

THE INFLUENCE OF CONTEXTUAL BARRIERS AND COPING EFFICACY
ON THE CAREER INTEREST/CHOICE GOAL RELATIONSHIP

A Dissertation Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
of the Requirements for the Degree

Doctor of Philosophy

by

Amanda Netterville Kirkland

December, 2010

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Approved by Dissertation Committee:

Dr. Consuelo Arbona, Chairperson

Dr. Margaret Watson, Committee Member

Dr. Nicole Coleman, Committee Member

Dr. Mary Armsworth, Committee Member

Dr. Robert K. Wimpelberg, Dean
College of Education

December 2010

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Abstract

Due to the significant role that careers play in the lives of many individuals, understanding the career developmental process is of particular importance. Interests and goals are key components in the process of career choice and implementation. Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994) proposes that under optimal conditions, career interests give rise to congruent career choice goals; goals, in turn lead to actions directed at implementing the chosen goals. Among college students, having established goals that correspond to their interests has been associated with desired career and academic outcomes, such as college achievement in terms of GPA (Tracey & Robbins, 2006) and college major persistence (Allen & Robbins, 2008; Schaefer, Epperson, & Nauta, 1997).

Original hypotheses of SCCT state that contextual barriers have a direct relation to goals. However, studies have shown that contextual barriers are more likely to relate to goals indirectly through self-efficacy (Lent, Brown, Nota, et al., 2003; Lent, Brown, Schmidt, et al., 2003; Lent et al., 2001; Smith, 2001) suggesting that SCCT may need some modification (Lent, Brown, Nota, et al., 2003; Lent et al., 2001). It has also been proposed that self-efficacy related to coping with barriers, or coping efficacy, may moderate the barrier-goal relation (Lent, Brown, and Hackett, 2000). In other words, there may be a direct correlation between barriers and goals only when coping efficacy is low. It has also been suggested that contextual barriers may moderate the relation of

interests to goals; that is, the relation of interest to goals will be stronger when perceived barriers are low.

The purpose of this study was to examine these moderation and mediated effects. Specifically this study examined (1) if barriers moderate the relation of career interests to career goals, (2) if coping efficacy moderates the relation of barriers to career goals, and (3) to what extent coping efficacy mediates the relation of barriers to career goals. Hierarchical regression analyses were used to examine these effects in the relation of interests, perceived barriers, and coping efficacy to academic and career goals. Participants in the study were community college students. The following instruments were used to assess the constructs of interest: (1) Perception of Barriers scale (Luzzo and McWhirter, 2001), (2) Coping with Barriers (CWB) scale (Luzzo and McWhirter, 2001), (3) a measure of career interest developed by Lent, Brown, Nota, et al. (2003), (4) and a measure of career consideration (goals) developed by Lent et al. (2003).

For the overall sample, coping efficacy was not found to moderate or mediate the relation of educational barriers to choice goals. Also, educational barriers did not moderate the interest/goal relation. However, there was a direct positive correlation between educational barriers and academic goals for Holland's Artistic, Social, and Conventional themes. Because the primary analyses offered very few findings as expected, exploratory analyses were conducted with career barriers and coping efficacy that are specifically relevant for females and African Americans. Analyses with only the African American females and with both African American and Caucasian females revealed that coping efficacy did not have a moderating or mediating effect on the career barrier/ goal relation nor was there evidence for a moderating effect of career barriers on

the interest/ goal relation. For the African American participants (both male and female) no evidence was found for a mediating effect of coping efficacy on the career ethnic discrimination barrier/ goal relation. However, coping efficacy moderated the relation of career ethnic discrimination barriers to choice goals only for the Social theme. Also, career ethnic discrimination barriers moderated the relation of interests to goals only for the Enterprising theme.

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Chapter I

Introduction

Due to the significant role that careers play in the lives of many individuals, understanding the career developmental process is of particular importance. Interests and goals are key components in the process of career choice and implementation. Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994) proposes that under optimal conditions, career interests give rise to congruent career choice goals; goals, in turn lead to actions directed at implementing the chosen goals. Among college students, having established goals that correspond to their interests has been associated with desired career and academic outcomes. For instance, congruence between interest and choice of college major, which is considered a career goal, was predictive of college achievement in terms of GPA (Tracey & Robbins, 2006) and college major persistence (Allen & Robbins, 2008; Schaefer, Epperson, & Nauta, 1997).

According to the SCCT, several factors influence the development of interests and goals. These factors include contextual influences, such as supports and barriers, which are proximal to choice behavior. Unfortunately, many individuals encounter contextual barriers, such as discrimination, competing obligations, and financial problems, throughout the career process. Lent et al. (1994) proposed that environmental barriers encountered at the time of active decision making will decrease the likelihood of establishing career goals that are congruent with expressed career interests. This is particularly significant to the career development of women and ethnic minorities because research has shown that these individuals tend to anticipate more career-related

barriers, such as sex and ethnic discrimination, than Caucasian men (Luzzo & McWhirter, 2001; McWhirter, 1997; Quimby, Seyala, & Wolfson, 2007; Smith, 2001).

Furthermore, in 2007, only 19% of African Americans and 13% of Hispanics in the U.S. who were at least 25 years of age had attained a bachelor's degree, compared to 32% of Caucasians. Additionally, 40% of Hispanics and 17% of African Americans in that age group had not completed high school, compared to 9% of Caucasians (U.S. Department of Education, 2007). The lack of post-secondary education puts African Americans and Hispanics at a huge economic disadvantage because individuals with a bachelor's degree earn about 77% more than high school graduates, and individuals with a professional degree earn 50% more than those with a bachelor's degree. Census data shows that on average, both African American and Hispanic households earn significantly less than Caucasian households (38% and 30% less, respectively) (U.S. Census Bureau, 2007).

Increasing the level of educational attainment for members of ethnic/racial minority groups would not only improve their earning potential, but society at large would also benefit because of the reduction in crime, the decrease of dependency on public welfare and Medicaid, increased voting rates, more volunteerism, and greater civic involvement that are associated with high levels of education and income (Bowen, 1997). Bowen (1997) also noted that the greatest benefit of educational attainment is the increase in educational attainment of future generations.

In addition to earnings disparity based on ethnicity, there is also inequality between genders. In 2008, women working full-time, year round in the U.S. made only 77% of the earnings of men, and among part-time workers, women earned only 73% of

that of men (the National Committee on Pay Equity, 2008). This is even more troubling when also broken down by ethnicity. In 2006, African American women made only 64% of the earnings of Caucasian men and Hispanic women made only 52% of that of white men (National Committee on Pay Equality, 2007). This is in spite of the fact that women earn bachelor's degrees at the same rate as men (AAUW Educational Foundation, 2007). However, students who attained degrees in female-dominated majors earn less than students who graduated in male dominated majors (U.S. Department of Education, National Center for Education Statistics, 2001). Furthermore, researchers have found that among Hispanic females, the choice of lower prestige and female-dominated careers were related to higher levels of perceived career barriers, such as discrimination (Flores & O'Brien, 2002; Rivera, Blumberg, Chen, Ponterotto, & Fores, 2007).

Original hypotheses of SCCT state that barriers may either moderate the relation of interests to career goals or have a direct, negative relation to goals. Research concerning the barriers as moderators hypothesis is scant (Lent et al., 2001). Therefore, more research is needed to determine the validity of this hypothesis. Also, research does not typically support the hypothesis concerning a direct relationship between barriers and goals. Instead, studies have shown that barriers are more likely to relate to goals indirectly through self-efficacy (Lent, Brown, Nota, et al., 2003; Lent, Brown, Schmidt, et al., 2003; Lent et al., 2001; Smith, 2001) suggesting that SCCT may need some modification (Lent, Brown, Nota, et al., 2003; Lent et al., 2001).

First, it has been suggested that self-efficacy related to coping with barriers, or coping efficacy, may moderate the barrier-goal relation (Lent, Brown, and Hackett, 2000). In other words, there may be a direct correlation between barriers and goals only

when coping efficacy is low. To date, research to test this assertion has not been published and is, therefore, needed. Lent et al. (2000) have proposed that coping efficacy may mediate the barrier-goal relationship as well. Studies are also needed to examine this hypothesis.

The first purpose of this study is to examine an original hypothesis of SCCT which posits that contextual barriers serve to moderate the interests-goal relationship. Specifically, this study will explore the possibility that the level of perceived contextual barriers will affect the strength of the interest-goal correlation (e.g., the interests-goal correlation will be stronger when level of perceived barriers is low). The second purpose of the present study is to explore the suggested modifications to the SCCT. Specifically, coping efficacy will be investigated to determine if it serves as either a mediator or moderator for the barrier-goal relation. The present study will seek to determine if barriers and goals are indirectly linked through coping efficacy (i.e., coping efficacy as a mediator) or if barriers and goals are directly linked when coping efficacy is low but not directly related when coping efficacy is high (i.e., coping efficacy as a moderator).

Participants of this study are female and ethnic minority community college students. Lent, Brown, and Hackett (1994) noted the potential of SCCT to guide research on the career development of ethnic minorities and females, particularly in the area of contextual factors, such as discrimination, family role conflict, and sexual harassment. Additionally, the study focuses on females and ethnic minority students due to the disparity in income, educational attainment, and perception of contextual barriers previously mentioned. Participants were sampled from community colleges because research shows that only 32% of Caucasians, 33% of African Americans, and 25% of

Hispanics who first enroll in two year community colleges will transfer to a four year college or university within six years, making attainment of a bachelor's degree less likely. Also, African Americans, Hispanics, and Native Americans are more likely to enroll in two year community colleges than Caucasians and Asians. Exploring the effects of contextual barriers and coping efficacy could help shed light on this trend. In fact, researcher have uncovered several contextual differences between community college students and students at four your colleges/universities. For example, the socioeconomic status of community college students tend to be lower in regards to household income and parents' education level (Bailey, 2003). Compared to students in four-year colleges, community- college students are also more likely to have the competing commitments of employment and childcare responsibilities (Bailey, 2000) and are twice as likely to be single with a dependent.

The following chapter provides a review of the literature pertaining to relevant constructs of the SCCT. First, there is an overview of the SCCT followed by sections that examines previous research on (1) the relationship between interest and goals (2) proximal contextual barriers (3) the relationships between contextual barriers, interests, and goals (4) self-efficacy as a mediator between contextual barriers and goals (5) coping efficacy. The chapter concludes with a section detailing the purpose of the present study. Chapter III focuses on the method's utilized in the present study. Chapter IV presents results of the analyses conducted to examine the research questions posed in the study. Finally, Chapter V provides a discussion of the study findings and suggestions for further research.

Chapter II

Literature Review

In response to the proliferation of theories aimed at explaining career development, Lent et al. (1994) proposed the SCCT as a means of integrating common aspects of various theories. The foundation for SCCT is Bandura's (1986) social cognitive theory, but SCCT also incorporates elements of other models such as the social learning theories proposed by Krumboltz, Mitchell, and Jones (1976) and Hackett and Betz (1981) as well as non-social learning models (e.g., Dawis & Lofquist, 1984; Holland, 1985; Super, 1990). SCCT focuses on both career and academic behaviors because the development of these behaviors shares common causal mechanisms. The aim of SCCT is to explain the means by which career and academic interests are formed, career and academic choices are made and implemented, and level of performance (i.e., accomplishments and persistence) is obtained (Lent et al., 1994).

The SCCT conceptual framework assumes that interests, career choice, and performance are three distinct but inter-related aspects of career development. Figure 1 provides a diagram of the hypothesized relations of the SCCT constructs. The first aspect is that of interests which are defined as patterns of likes, dislikes, and indifferences concerning careers and career-related activities (Lent et al., 1994). According to SCCT, academic and career interests result primarily from two social cognitive variables: self-efficacy and outcome expectations. Self-efficacy is defined as a belief in one's abilities to accomplish a particular level of performance (Bandura, 1986). Self-efficacy is attained through four types of learning experiences: (a) personal performance accomplishments, (b) vicarious learning, (c) social persuasion, and (d) physiological arousal (Lent &

Brown, 1996). Outcome expectations are beliefs concerning the consequences of carrying out certain behaviors (Lent & Brown, 1996). It appears that individuals are likely to develop interests for activities they feel they are good at and for which they expect positive outcomes.

The second aspect is that of career choice. The framework put forth by Lent et al. (1994) considers two dimensions of career choice: choice goals and choice actions. Choice goals are the plans to engage in a chosen activity or series of activities, such as declaring a college major (Lent et al., 1994). By establishing goals, individuals increase the chance that they will obtain desired future outcomes. This is because goals help people persevere towards their aspirations even when their behaviors are not reinforced in the short-term (Albert & Luzzo, 1999). In the progression of career development, interests often give rise to congruent choice goals. For example, an interest in mathematics may lead to the declaration of an engineering major. The establishment of choice goals then prompts choice actions. Choice actions are behaviors that are aimed at accomplishing the career goals (e.g., taking courses that fulfill the degree requirements for a declared college major). SCCT posits that self-efficacy and outcome expectations also exert a direct effect on choice goals and choice actions. According to SCCT, individuals are more likely to set goals and follow a course of action for obtaining those goals if they feel they are capable of doing so and if they expect favorable outcomes. The third aspect of career development is performance which includes achievements (e.g., GPA) and persistence (e.g., stability of academic major) (Lent et al., 1994). Performance directly results from choice actions and self-efficacy.

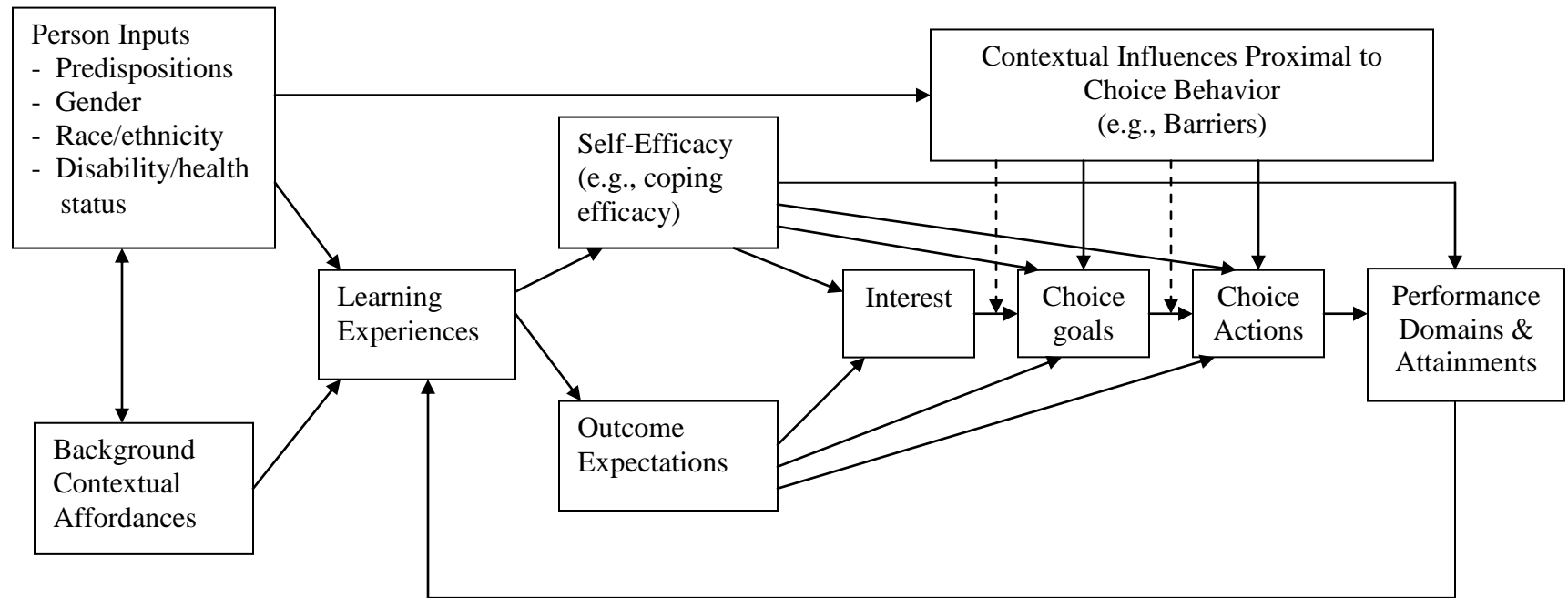


Figure 1. Model representing hypothesized relations of the Social Cognitive Career Theory. Solid lines represent direct relations, and dashed lines represent moderating effects. Copyright 1993 by R. W. Lent, S. D. Brown, and G. Hackett.

Thus far, the focus has been on the cognitive-person variables that allow individuals to exercise personal control over their academic and career development. Lent et al. (1994) proposed several more variables that can affect career interests and career choice behavior including person (e.g. gender, race, health status), experiential (e.g., vicarious learning, social persuasion), and contextual (e.g. barriers, supports) factors. These may operate as antecedents of the cognitive-person variables, moderators of theoretical relations, and/or as direct influences on career development.

Relationship between Interest and Goals

One aspect of the SCCT focuses on the factors that prompt academic and career goal selection. One such factor is that of academic and career interests. According to the SCCT, interest in a particular educational or career field usually leads to the establishment of goals in that area. Research generally supports this assertion across a variety of settings including high school (Lent, Brown, Nota, et al., 2003; Nauta & Epperson, 2003; Smith-Weber, 1999) and college (Byars-Winston, 2006; Diegelman & Subich, 2001; Gainor & Lent, 1998; Lent, Brown, Schmidt, et al., 2003; Lent et al., 2001, 2005; Nauta & Epperson, 2003; Smith, 2001; Waller, 2006). For example, in a study of both male and female high school students in Italy, interests were directly linked to choice goals across Holland's themes (Lent et al., 2003).

There are a number of practical implications for understanding the relationship between interests and goals. First, research shows that course grades and college major persistence are predicted by correspondence between interest and academic goals, (i.e., choice of college major; Allen & Robbins, 2008; Schaefer, Epperson, & Nauta, 1997; Tracey & Robbins, 2006). Therefore, success in college as it relates to grades and

persistence may be increased by helping students identify and choose college majors that are congruent with their interests. This may be a particularly useful strategy for career counselors working with African American and Hispanic students because African Americans and Hispanics are less likely to attain a bachelor's degree than Caucasians and Asians and in turn have lower incomes.

Second, due to recent trends in retirement, there is a shortage of employees in a variety of career fields. For instance, positions in the fields related to science, technology, engineering, and math (STEM) need to be filled (National Science Foundation, 2003, 2004). Studies reveal that the choice of a math or science related major was predicted by interests in those areas for samples of mostly white college students (Nauta & Epperson, 2003) and samples of African-American college students attending both historically Black colleges and universities and predominately white universities (Byars-Winston, 2006; Gainor & Lent, 1998; Lent et al., 2005; Waller, 2006).

In order to increase the number of college students who set career goals in areas related to STEM majors, it has been suggested that interventions be established in high school to increase interest in STEM subjects among students who show promise in those areas (Nauta & Epperson, 2003). Such interventions would be of particular significance for women and minorities who are underrepresented in the more lucrative male dominated careers, such as STEM fields (National Science Foundation, 2006). In fact, Smith-Weber (1999) found that the expressed career interests of African American high school girls predicted the gender type of the careers they were considering and the level of education they expected to complete (both choice goals). Furthermore, although the percentage of women who earn bachelor's degrees is the same as that of men, women

earn the majority of the degrees in education, psychology, and the health professions, and men are more likely to choose major in mathematics, engineering, physical sciences, and business. For example, according to the U.S. Department of Education (National Center for Education Statistics, 2001) only 2% of female college students majored in engineering compared to 12% of males. The same data shows that female-dominated majors tend to lead to lower paying jobs than male-dominated majors.

Focus on Proximal Contextual Barriers

As noted, one proposition of SCCT is that under favorable conditions, interests usually correspond to choice goals. While most research shows support for a relationship between interests and goals, some studies with Asian American university students (Tang, Fouad, & Smith 1999), Mexican American female high school students (Flores & O'Brien, 2002), and high school students in Turkey (Özyürek, 2005) have failed to find such a link. Özyürek (2005) speculated that the restrictive nature of the college admissions process in Turkey may explain the lack of significant relation between math interests and math preference (i.e., goals) in his study. Each year, only students who obtain the highest scores on the entrance exams are allowed to declare math-related majors. Because compared to other majors, math related fields offer better employment prospects in a country with a high unemployment rate, it is likely that students who are eligible, declare math-related majors even if they have no interest in that area. In addition, Flores and O'Brien (2002) hypothesized that some individuals, especially women of color, may not have the opportunity to pursue career choices that are consistent with their interests. In other words, the choice of career goals for some individuals will be affected more by environmental barriers, such as job market constraints, financial

concerns, childcare responsibilities, or discrimination, than by interests. Additionally, Burlew and Johnson (1992) found that African American women in nontraditional careers reported experiencing more contextual barriers, including racial and gender discrimination and family obligations, than African American women in traditionally female fields.

The view that individuals are affected by environmental factors is consistent with the SCCT framework and previous research. Studies consistently show that individuals commonly encounter contextual career barriers, such as discrimination, commitment to nonwork roles, job market and economy, time concerns, and lack of support (Brown, Reedy, Fountain, Johnson, & Dichiser, 2000; McWhirter, Torres, & Rasheed, 1998; Perrone, Civileto, Webb, & Fitch, 2004), and that these barriers may be more salient for certain groups of people (e.g., women and minorities). For example, both university and high school female students are more likely to anticipate career-related barriers than their male peers (Luzzo & McWhirter, 2001; McWhirter, 1997; Smith, 2001). In addition, studies reveal that ethnic minorities report that they expect to encounter more educational and career-related barriers, such as sex and ethnic discrimination, than European Americans anticipate experiencing (Luzzo & McWhirter, 2001; McWhirter, 1997; Quimby, Seyala, & Wolfson, 2007).

It is also important to note that not all influences are contextual. For instance, lack of self-confidence, lack of experience, and decision making difficulties are internal barriers. Contextual barriers refer to perceived and objective external (i.e., environmental) road-blocks that may have an effect on career development (Lent et al., 1994). While both internal and environmental barriers can hinder career progress,

theoretically, they do so through different paths. Therefore, Lent et al. (2000) suggest distinguishing between the two.

The SCCT further delineates these contextual influences into those that are either distal or proximal to the career choice process. Distal factors are background influences, such as role model exposure and support or discouragement for engaging in certain activities, which were encountered in the past and aid in the development of interests and self-efficacy. Proximal contextual variables are encountered during the active process of planning for and implementing career choices (e.g., barriers which effect choice goals and actions) and are theorized to have a direct relation with choice goals. Both proximal and distal supports and barriers are important components for understanding the process of career development. However, the current study will focus only on proximal, contextual barriers due to the detrimental effect they are hypothesized to have on the process of translating career interests into related career goals and then taking action to reach those goals.

Relationship between Contextual Barriers, Interests, and Goals

While research has shown that individuals commonly encounter contextual career barriers (e.g., Brown, Reedy, Fountain, Johnson, & Dichiser, 2000; Perrone, Civilelto, Webb, & Fitch, 2004), it is unclear how these contextual barriers relate to the career process. According to an original hypothesis of SCCT, proximal, contextual barriers relate to choice goals directly by hindering pursuit of certain choice considerations. However, research focusing on the direct relation between proximal, contextual influences and choice goals is mixed. Only a few studies have found statistically significant correlations between barriers and certain choice goals. For example, as

Hispanic females perceived higher levels of barriers, they were more likely to choose lower prestige (Flores & O'Brien, 2002) and female-dominated careers (Rivera, Blumberg, Chen, Ponterotto, & Fores, 2007). Also, among an ethnically diverse group of students taking an introductory engineering class, Lent et al. (2005) found a negative relation between social barriers (e.g., pressure from family or friends to change major) and major choice goals (e.g., intentions to remain in engineering). While all of these relations have been statistically significant, they have also been quite small. In addition, studies with high school and college students found no link between perceived barriers and career choice traditionality (Flores & O'Brien, 2002), consideration of male dominated careers (Rivera, Blumberg, Chen, Ponterotto, & Fores, 2007), Holland's type of careers considered (Lent, Brown, Nota, et al., 2003), and major choices, or course enrollment intentions (Lent et al., 2001).

The SCCT also states that proximal contextual barriers moderate the interest/ goal relation so that when barriers are perceived to be high the interest/goal relation will be weaker than when barriers are perceived to be low. Lent et al. (2001) found that level of perceived barriers moderated the interest-goal relation in a sample of university students. The association between math/science interest and choice goals (i.e., major choices and course enrollment intentions) was stronger for participants who had lower barrier perceptions than those who perceived higher levels of barriers. More research is needed to test the validity of this hypothesis and to see if findings of Lent et al. (2001) will generalize to other populations.

Self-Efficacy as a Mediator between Contextual Variables and Goals

While only a few studies have found small yet significant direct associations of barriers to choice goals, several studies have discovered that barriers have a direct, negative relationship to self-efficacy (Lent et al., 2005; Lent, Brown, Nota, et al., 2003; Lent, Brown, Schmidt, et al., 2003; Quimby & O'Brien, 2004; Smith, 2001; Turner, Steward, & Lapan, 2004). For instance, in a study of nontraditional college women, higher levels of perceived barriers predicted lower levels of academic and career decision making self-efficacy (Quimby & O'Brien, 2004), and adolescents from single-parent homes (viewed as a barrier) reported much lower math self efficacy than their peers from two parent, intact families (Turner, Steward, & Lapan, 2004). These findings suggest that as more barriers are encountered, individuals may be less likely to feel capable of accomplishing their goals, and as self-efficacy decreases, individuals may be more likely to perceive barriers.

Given these findings, some researchers suggest that there may be a need to modify the SCCT (Lent et al., 2001; Lent, Brown, Nota, et al., 2003). Instead of the proposed direct-effects model, a partially or even fully mediated model may better explain the way in which contextual barriers relate to career goals. In fact, while Lent et al. (2005) found a small, direct negative relation between social barriers and major choice goals, there was a much stronger indirect relationship in which self-efficacy (a combination of academic self-efficacy and coping efficacy) mediated the relation of barriers to goals. Other studies involving college students reveal that task specific self-efficacy mediates the relationship between contextual barriers and major choice goals in the areas of engineering (Lent, Brown, Schmidt, et al., 2003) and math (Lent et al., 2001)

and that career self-efficacy mediates the relationship between the perceived likelihood of encountering career barriers and range of careers considered (Smith, 2001). Support for the mediated model has also been found in a high school sample. Lent, Brown, Nota, et al. (2003) found that for Italian students, occupational task self-efficacy mediated the relation between social barriers and type of career goals (i.e., Holland types).

Coping Self-Efficacy

According to the SCCT, self-efficacy is a set of beliefs about a particular performance domain (Lent et al., 1994). Research concerning self-efficacy within the SCCT framework has examined various types of self-efficacy, such as career decision making self-efficacy (Quimby & O'Brien, 2004), self-efficacy for transitioning to work or post-secondary education (Alliman-Brissett et al., 2004), and math self-efficacy (Ferry et al., 2000; Lent et al., 2001; Turner et al., 2004). Lent et al. (2000) pointed out that research should also focus more attention on coping with barriers self-efficacy, or coping efficacy, which is “one’s perceived capability to negotiate particular situational features that obstruct or complicate performance” (Lent et al., 2001, p. 476).

One reason for examining coping efficacy is due to the possible confounding effects of coping efficacy in the assessment of barriers. It is not uncommon for participants of studies examining career barriers to report few perceived barriers (e.g., Lease, 2006; Lent, Brown, Schmidt, et al., 2003; Lent et al., 2001). While it is likely that these participants truly face few barriers, some researchers have questioned whether barrier assessments, aimed at measuring barrier perceptions, are also measuring coping efficacy (Lent et al., 2000; Swanson et al., 1996). Swanson et al., (1996) surmise that when participants respond to certain items on barrier assessments, they first ask

themselves if a barrier is likely to occur and then if they believe they can overcome the barrier. Therefore, ratings of barrier perceptions may be low, not because participants do not anticipate barriers, but because levels of coping efficacy are high.

Research findings tend to provide support for the existence of a negative relation between coping efficacy and barrier perceptions. In one study, it was found that ethnic minorities not only anticipated more career barriers than European Americans, but they also reported lower coping efficacy for dealing with the barriers. (Luzzo & McWhirter, 2001). Other studies with both undergraduate students from various ethnic groups and with college graduates have indicated a negative relation between coping efficacy and perceived career barriers (Bryars-Winston, 2006; Lent et al., 2001; Perone et al., 2004). Studies that have assessed self-efficacy using measures that combine coping efficacy with task specific self-efficacy have found similar results (Lent, Brown, Schmidt, et al., 2003; Lent et al., 2001, 2005). Thus research focusing on barrier perceptions should also include, as a control, a measure of coping efficacy (Lent et al., 2000).

Other theoretical issues concerning coping efficacy have been raised by Lent et al. (2000). First, coping efficacy, like other forms of self-efficacy (e.g., academic milestones and task specific), has emerged as a mediator of the relation of perceived barriers to choice goals (Byars-Winston & Fouad, 2010; Lent et al., 2001, 2005; Lent, Brown, Schmidt, et al., 2003). See figure 2. However, these studies have only included participants attending four-year colleges and universities, and the participants generally reported few perceived barriers. Additional research is needed to determine if these results are generalizable to other populations, such as high school and community college

students and to those who report less favorable environmental conditions (e.g., more barriers).

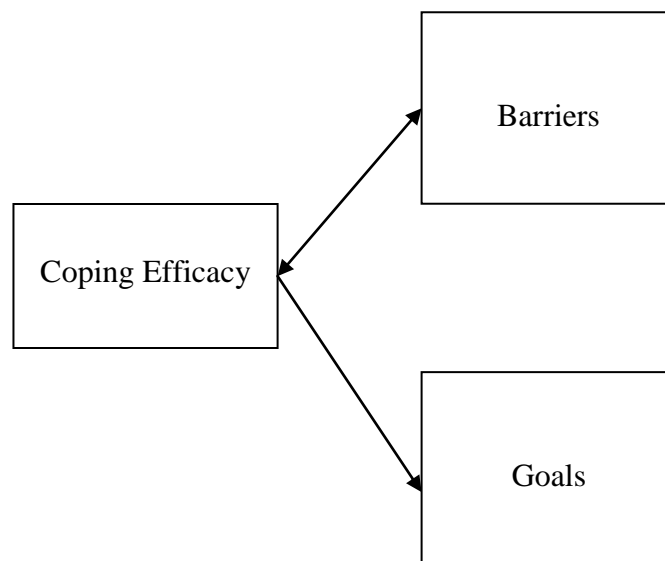


Figure 2. Model representing hypothesized way in which coping efficacy mediates barrier-goal relation.

Second, it has been suggested that coping efficacy may moderate the relationship between barriers and goals (Lent et al., 2000). See figure 3. Specifically, when coping efficacy is high, the association between barriers and goals will be small or nonexistent. However, when coping efficacy is weak, the barrier-goal correlation will be stronger as was originally purported by the SCCT. While this hypothesis has not been examined, Lent et al. (2005) found that students at historically black colleges and universities (HBCUs) reported stronger self-efficacy (i.e., academic milestones self-efficacy and

coping efficacy) than students at a predominately White university (regardless of race). Moreover, there was a significant negative correlation between barriers and major choice goals for the predominately White university sample but not for the HBCUs samples. These findings suggest that coping efficacy may have played a role in weakening the barrier-goal relationship for the HBCUs samples. By understanding the role of coping efficacy in career development, effective interventions could be developed to increase coping efficacy and thus mitigate the detrimental effects of barriers.

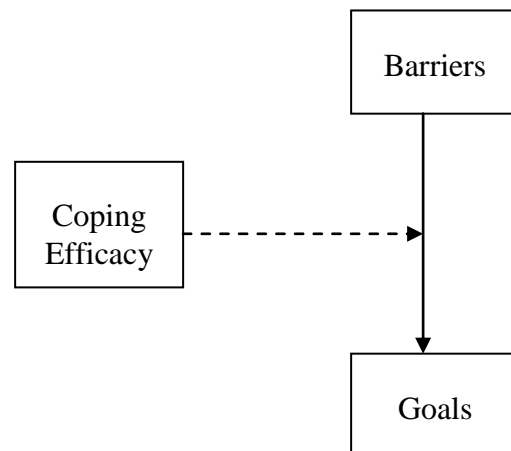


Figure 3. Model representing hypothesized way in which coping efficacy moderates barrier-goal relation. Solid line represents a direct relation, and dashed line represents a moderating effect.

Purpose of This Study

The study of career development is complex as evidenced by the number of theories aimed at explaining the process (e.g., Dawis & Lofquist, 1984; Hackett & Betz, 1981; Holland, 1985; Krumboltz, Mitchell, & Jones, 1976; Super, 1990). The importance of SCCT lies in its effort to unify these diverse theories thus clarifying the career choice process. Because theory guides research and aids in the development of interventions, it is necessary to determine if key components of theories are accurate. Therefore, additional research of the SCCT could have theoretical and practical significance.

A number of SCCT's hypotheses should be tested to determine if the framework needs modification. Further research examining the role of coping efficacy and contextual barriers could shed light on past research which has generally failed to support the SCCT hypothesis that barriers and choice goals are directly related. The purpose of the current study is twofold: (a) examine the role coping efficacy plays as either a moderator or mediator of the barrier/ goal link, and (b) test the hypothesis that barriers serve as moderators of the interest goal link.

Furthermore, Lent, Brown, and Hackett (2000) point out that SCCT has the potential to guide research on the career development of ethnic minorities and females, particularly in the area of contextual factors, such as discrimination, family role conflict, and sexual harassment. The present study focuses on females and ethnic minority students due to the disparity in income, educational attainment, and perception of contextual barriers between these individuals and Caucasian males. Participants were sampled from community colleges for two reasons. Because of the low transfer rate to a four year college or university, focusing on community college students allows for the

examination of career variables among students who are not likely to attain a bachelor's degree. Furthermore, African Americans, Hispanics, and Native Americans are more likely to enroll in two year community colleges than Caucasians and Asians. Also, Lent and Brown (2006) propose that researchers should examine specific types of contextual influences. For this reason, the current study will focus on the potential careers barriers of ethnic and gender discrimination and childcare responsibilities.

Understanding coping efficacy and contextual barriers as they relate to career development will aid in creating effective interventions. For instance, if it is found that contextual barriers have an impact on career development, high schools and colleges could implement programs that identify students who are at risk of being adversely affected by the barriers and then provide resources to help them manage them. Also, if it is found that coping efficacy has an effect on the barrier/ goal relationship, it is possible that an intervention could be designed to increase coping efficacy and thereby weaken the barriers' ability to constrain choice goals.

Because of the need for additional research, the purpose of this study is to examine the hypothesized relationship between several SCCT variables: barriers, interests, goals, and coping efficacy. The research questions that will be explored are as follows:

Hypothesis 1: To what extent educational barriers moderate the relation of interests to goals for the overall sample

Hypothesis 2: To what extent coping efficacy moderates the relationship of educational barriers to goals for the overall sample

Hypothesis 3: To what extent coping efficacy mediates the relationship of educational barriers to goals for the overall sample

Additionally, the scores of the unmodified version of the Career Barriers subscale of the POB that assess barriers of ethnic and gender discrimination and competing family commitments will be analyzed for a subsample that only includes African American female participants. The research questions that will be explored are as follows:

Hypothesis 4: To what extent career barriers moderate the relation of interests to goals for African American females

Hypothesis 5: To what extent coping efficacy moderates the relationship of career barriers to goals for African American females

Hypothesis 6: To what extent coping efficacy mediates the relationship of career barriers to goals for African American females

Because the primary analyses offered very few findings as expected, exploratory analyses were also conducted with career barriers and coping efficacy that are specifically relevant for certain groups. Exploratory analyses with all of the female participants (African American and Caucasian) were conducted using a modified version of the Career Related Barrier and Coping with Career Related Barriers subscales that only included items regarding gender discrimination and competing family commitments. Additionally, exploratory analyses with all of the African American participants (male and female) were conducted using a modified version of the Career Related Barrier and Coping with Career Related Barriers subscales that included only the items regarding ethnic discrimination. The research questions were the same as those of the primary analyses.

Chapter III

Method

Participants

Participants were 380 students attending Introductory English classes at one of four southern community colleges. There were 224 females and 156 males in the study ranging in age from 17 to 69 years ($M = 21.95$; $SD = 6.98$). Self-reports indicated that 75% were freshmen, 22.8% sophomores, >1% other, and 1.3% did not report their classification. Three hundred seventeen self reported their GPAs ($M = 2.89$; $SD = .56$). Regarding ethnicity, there were 195 (51.3%) African American participants and 185 (48.7%) Caucasian participants. Specifically, there were 121 (31.8%) African American females, 74 (19.5%) African males, 103 (27.1%) Caucasian females, and 82 (21.6%) Caucasian males. A summary of the demographic information is displayed in Table 1.

Table 1

Summary of Key Demographic Characteristics

| | African American Females | | | African American Males | | | Caucasian Females | | | Caucasian Males | | | Overall | | |
|--------------------------|--------------------------|-----------|--------------|------------------------|-----------|--------------|-------------------|-----------|--------------|-----------------|-----------|--------------|-----------|-----------|--------------|
| | Frequency | % | | Frequency | % | | Frequency | % | | Frequency | % | | Frequency | % | |
| N | 121 | 31.8 | | 74 | 19.5 | | 103 | 27.1 | | 82 | 21.6 | | 280 | 100 | |
| Educational Level | | | | | | | | | | | | | | | |
| Freshman | 88 | 72.7 | | 51 | 68.9 | | 83 | 80.6 | | 63 | 76.8 | | 285 | 75 | |
| Sophomore | 31 | 25.6 | | 22 | 29.7 | | 16 | 15.6 | | 18 | 22 | | 87 | 22.8 | |
| Other | - | - | | - | - | | 2 | 2.0 | | - | - | | 3 | >1 | |
| Missing | 2 | 1.7 | | 1 | 1.4 | | 2 | 1.9 | | 1 | 1.2 | | 5 | 1.3 | |
| | M | SD | Range | M | SD | Range | M | SD | Range | M | SD | Range | M | SD | Range |
| Age | 24.02 | 9.93 | 17-69 | 20.49 | 3.52 | 18-44 | 21.32 | 6.09 | 17-47 | 21.00 | 6.05 | 17-53 | 21.95 | 6.98 | 17-69 |
| GPA | 2.82 | .56 | 1.0-4.0 | 2.54 | .52 | 1.5-4.0 | 3.07 | .48 | 2.0-4.0 | 3.08 | .50 | 2.0-4.0 | 2.89 | .56 | 1.0-4.0 |

Procedure

Prior to data collection, approval was received from the University of Houston's Committee for the Protection of Human Subjects. Permission to recruit students was obtained from the college deans, professors, and instructors. To recruit students, the researcher went to the classroom to describe the study. It was explained that the project focused on the career development of community college students and that participation was voluntary. The students who chose to participate received packets containing an informed consent form, the research instruments, and instructions; they also received extra credit in their classes. The researcher verbally instructed them how to complete the instruments which they completed during class time with the researcher present.

Instruments

Demographic questionnaire. The demographic questionnaire consisted of items about the participant's personal characteristics (i.e., age, gender, ethnicity, educational level classification, major, intended future profession, and GPA).

Career interests. Career interests were measured using a scale developed by Lent et al. (2003). This measure contains a total of 42 occupational titles with 7 titles representing each of Holland's 6 themes (i.e., Artistic, Investigative, Realistic, Conventional, Social, Enterprising). These titles include musician and artist (Artistic); biologist and geologist (Investigative); auto mechanic and electrician (Realistic); accountant and bank teller (Conventional); high school teacher and social worker (Social); and business executive and sales manager (Enterprising). This scale is based on Gore and Leuwerke's (2000) 84-item version. Participants are asked to indicate how much "you think you would like or dislike the work activities that people in each of these

occupations perform.” Ratings are made on a scale of 0 (Strongly Dislike) to 9 (Strongly Like). A score was obtained for each of Holland’s six themes by adding up the ratings for the 7 titles representing each theme. Higher scores indicate stronger interest in occupations within a certain Holland theme.

Adequate reliability has been found for each of the themes. Cronbach’s alpha coefficients were .80 for the Realistic, .90 for Investigative, .83 for Artistic, .86 for Social, .89 for Enterprising, and .94 for Conventional. Validity wise, Gore and Leuwerke’s (2000) found interrelationships between self-efficacy, outcome expectations, and occupational considerations that were consistent with SCCT for their version of this measure.

Career choice goals. Career choice consideration was measured using a scale developed by Lent et al. (2003). This measure contains the same 42 occupational titles from the career interest measure with 7 titles representing each of Holland’s 6 themes (i.e., Artistic, Investigative, Realistic, Conventional, Social, Enterprising). These titles include musician and artist (Artistic); biologist and geologist (Investigative); auto mechanic and electrician (Realistic); accountant and bank teller (Conventional); high school teacher and social worker (Social); and business executive and sales manager (Enterprising). This scale is based on Gore (1996) and Gore and Leuwerke’s (2000) 84-item version. Participants are asked to indicate “how seriously you would consider” each occupation “as a possible career for yourself” on a scale of 0 (Not Very Seriously) to 9 (Very Seriously). A score was obtained for each of Holland’s six themes by adding up the ratings for the 7 titles representing each theme. Higher scores indicate more serious consideration of the occupations within a certain Holland theme.

Adequate reliability has been found for each of the themes. Cronbach's alpha coefficients were .85 for the Realistic, .92 for Investigative, .85 for Artistic, .87 for Social, .90 for Enterprising, and .94 for Conventional. Validity wise, Gore and Leuwerke's (2000) found interrelationships between self-efficacy, outcome expectations, and interests that were consistent with SCCT for their version of this measure.

Perceived barriers. Perceived barriers were assessed using the Educational Barriers and the Careers Barriers subscales of Luzzo and McWhirter's (2001) Perception of Barriers scale (POB). A modified version of the Educational Barriers subscale was used to measure perceived barriers for the primary analysis with the entire sample. The original subscale consists of 21 items which assess both internal (e.g., not being prepared enough, not being smart enough, not having enough confidence) and contextual barriers (e.g., money problems, childcare concerns, negative family attitudes about college). Because the present study sought to examine only contextual barriers, the ten items which measure internal barriers were not included in the analyses. For the remaining 11 items (e.g., money problems, family problems, and having to work while in school are/is currently a barrier to my educational aspirations), a Likert-type scale ranging from 5 (strongly agree) to 1 (strongly disagree) was used for item response. A score was obtained by adding up all of the responses, and perception of more barriers was indicated by higher scores. Luzzo and McWhirter (2001) reported a Cronbach's alpha coefficient of .88 for the original Educational Barriers subscale from a sample of undergraduates, and a test-retest reliability over a 2 month period yielded stability coefficients of .68. For the modified version of the Educational Barriers subscale in the present study, Cronbach's alpha coefficient was .86 for the entire sample.

Additional analyses were conducted using the Career Related Barriers subscale of the POB. There are 11 items on this subscale which examine barriers related to ethnic and gender discrimination and competing family commitments (e.g., In my future career, I will probably be treated differently because of my sex, experience negative comments about my racial/ethnic background, have difficulty finding quality daycare for my children). This unmodified Career Related Barriers subscale was analyzed for only the African American female participants because they are more likely than their white and/or male counterparts to experience all three types of barriers assessed with this subscale (i.e., gender and ethnic discrimination and competing family commitment). A Likert-type scale ranging from 5 (strongly agree) to 1 (strongly disagree) was used for item response. A score was obtained by adding up all of the responses, and perception of more barriers was indicated by higher scores. Luzzo and McWhirter's (2001) reported a Cronbach's alpha coefficients of .86 for this subscale from a sample of undergraduates. Test-retest reliability over a 2 month period yielded stability coefficients of .72.

Coping Efficacy. For the primary analysis with the entire sample, a modified version of the Coping with Educational Barriers subscale of the Coping with Barriers (CWB) scale was used as a measure of coping efficacy. The CWB is a 28 item instrument which parallels the POB scale with respect to item content and includes 2 subscales (i.e., Coping with Career-Related Barriers and Coping with Educational Barriers). A Likert-type scale ranging from 5 (highly confident) to 1 (not at all confident) is used for item response. Scores are obtained by summing the responses on each subscale. Higher scores reflect higher coping efficacy. The original Coping with Educational Barriers subscale consists of 20 items which assess participants' degree of confidence in overcoming

potential educational barriers (both internal and external). Luzzo and McWhirter (2001) reported a Cronbach's alpha coefficient of .93 for the Coping with Educational Barriers subscale. Test-retest reliability over a 2 month period of a randomly selected subsample of 55 participants yielded stability coefficients of .49. Only the 11 items which examined contextual barriers were included in the current analysis, (e.g., rate your degree of confidence in overcoming money problems, family problems, and negative family attitudes about college). For the modified version of the Coping with Educational Barriers subscale in the present study, Cronbach's alpha coefficient was .93 for the entire sample.

Additional analyses were conducted using the Coping with Career Related Barriers subscale of the CWB. There are 7 items on this subscale which examine participants' degree of confidence in overcoming barriers related to ethnic and gender discrimination and competing family commitments (e.g., rate your degree of confidence in overcoming discrimination due to my gender, negative comments about my racial/ethnic background, difficulty finding childcare). This unmodified Coping with Career Related Barriers subscale was used in analyses with only the African American female participants because they are more likely than their white and/or male counterparts to experience all three types of barriers assessed with this subscale (i.e., gender and ethnic discrimination and competing family commitment). Luzzo and McWhirter's (2001) reported a Cronbach's alpha coefficients of .88 for this subscale from a sample of undergraduates. Test-retest reliability over a 2 month period yielded a stability coefficient of .50.

Data Analysis

Analysis of Moderation Effect of Barriers on the Interest/Choice Consideration Relation:

To examine the hypothesis that barriers moderate the relation of interests to choice considerations (a goal) regarding careers in each of the six Holland types, six hierarchical multiple regression analyses were performed- one for each of Holland's themes. In each analysis, interests in the relevant Holland's theme (predictor variable) and barriers (moderator) were entered in the first step; the interaction term of interest and barriers was entered in the second step. A statistically significant change in R square from step 1 to step 2 indicates the presence of a moderation effect (Holmbeck, 2002). Choice consideration of careers in the respective Holland theme was the dependent variable in each regression analysis. Before running the regressions, the predictor and moderator variables were centered by subtracting the means from the raw score. Centering is recommended because predictor and moderator variables are usually highly correlated with the interaction terms produced from them, and centering reduces this multicollinearity (Frazier, Tix, & Barron, 2004).

Analysis of Moderation Effect of Coping Efficacy on Barrier/Choice Consideration Relation:

To determine if coping efficacy has a moderating effect on the relation of barriers to choice consideration (a goal) regarding careers in each of the six Holland themes, six hierarchical multiple regression analyses were performed, one for each of the themes. In these analyses, barriers were the predictor variable, coping efficacy was the moderator variable, and choice consideration was the dependent variable. The interaction between barriers and coping efficacy was also included in the regression because a significant

interaction indicates that there is significant moderation (Holmbeck, 2002). Before running the regressions, the predictor and moderator variables were centered by subtracting the means from the raw score.

Analysis of Mediation Effect of Coping Efficacy on Barriers/ Choice Consideration Relation

In order for coping efficacy to be a mediator of the barrier-career consideration relation, four conditions must be met: 1) barriers (predictor) are significantly associated with choice consideration, 2) barriers (predictor) are significantly associated with coping efficacy, 3) coping efficacy is significantly associated with choice consideration after controlling for barriers, 4) the association of barriers to choice consideration is significantly less after controlling for coping efficacy (Holmbeck, 1997). These conditions were tested using three multiple regressions per Holland's theme: 1) a regression with barriers as the predictor and choice consideration as the dependent variable, 2) a regression with barriers as the predictor and coping efficacy as the dependent variable, 3) a regression with barriers and coping efficacy simultaneously entered as the predictor variables and choice consideration as the dependent variable.

Chapter IV

RESULTS

Descriptive Analyses for Entire Sample with Modified Educational Barrier Scale

The means and standard deviations were computed for the scores of each assessment instrument for the overall sample which was used in the primary analysis (See table 2). ANOVAs were computed to determine if there were significant differences between perception of educational barriers and coping efficacy based on gender and ethnicity. Results showed that there were no differences between educational barriers, $F(1, 378) = .49, p > .05$, or coping efficacy, $F(1, 378) = .00, p > .05$, for men and women , but there were significant differences between African American and Caucasian participants for educational barriers, $F(1, 378) = 23.68, p < .001$, and coping efficacy, $F(1, 378) = 11.50, p \leq .001$. Results suggest that African Americans perceive more barriers to their education than do Caucasians and that they have lower self-efficacy for coping with these barriers. Correlations were also computed among predictor and criterion variables for the overall sample. Results indicated that interests and choice considerations were significantly correlated at the .01 level for each of Holland's themes. Results also show that there was a significant negative correlation between perceived educational barriers and coping efficacy at the .01 level. Additionally, there were negative correlations between coping efficacy and career choice consideration in the areas of Realistic ($p < .01$), Conventional ($p < .01$), and Social ($p < .05$). Perceived Educational barriers were significantly correlated with choice consideration for Holland's Artistic, Social, and Conventional themes at the .05 level. Table 3 summarizes the results.

Table 2

Means and Standard Deviations of Assessment Instruments for Entire Sample

| | Females | | Males | | African Americans | | Caucasians | | Overall | |
|-----------------------------|---------|-------|-------|-------|-------------------|-------|------------|-------|---------|-------|
| | M | SD | M | SD | M | SD | M | SD | M | SD |
| Educational Barriers | 24.63 | 9.85 | 23.93 | 9.01 | 26.58 | 10.08 | 21.97 | 8.25 | 24.34 | 9.51 |
| Coping Efficacy | 44.72 | 10.06 | 44.73 | 9.10 | 43.11 | 10.14 | 46.43 | 8.86 | 44.72 | 9.67 |
| Realistic Interest | 11.00 | 14.14 | 22.66 | 12.08 | 15.96 | 15.87 | 15.56 | 12.96 | 15.77 | 14.51 |
| Investigative Interest | 14.44 | 16.44 | 17.95 | 14.49 | 15.99 | 16.78 | 15.79 | 14.62 | 15.89 | 15.74 |
| Artistic Interest | 25.69 | 18.76 | 22.66 | 16.17 | 26.95 | 18.27 | 21.84 | 16.91 | 24.44 | 17.78 |
| Social Interest | 27.77 | 16.85 | 19.50 | 14.10 | 27.01 | 17.26 | 21.62 | 14.74 | 24.36 | 16.27 |
| Enterprising Interest | 21.95 | 17.60 | 27.03 | 16.33 | 27.05 | 18.45 | 20.84 | 15.28 | 24.04 | 17.25 |
| Conventional Interest | 20.84 | 19.09 | 16.55 | 15.38 | 24.66 | 18.97 | 13.28 | 14.32 | 19.08 | 17.76 |
| Realistic Consideration | 6.21 | 10.30 | 19.79 | 12.87 | 12.77 | 14.62 | 10.75 | 11.54 | 11.78 | 13.22 |
| Investigative Consideration | 8.87 | 12.59 | 13.69 | 14.06 | 11.48 | 13.67 | 10.19 | 13.13 | 10.85 | 13.41 |
| Artistic Consideration | 18.96 | 17.01 | 19.46 | 16.26 | 23.52 | 17.53 | 14.62 | 14.45 | 19.17 | 16.69 |
| Social Consideration | 23.69 | 16.63 | 16.18 | 13.90 | 24.32 | 16.99 | 16.65 | 13.83 | 20.57 | 15.97 |
| Enterprising Consideration | 16.73 | 17.10 | 22.27 | 16.14 | 22.69 | 18.34 | 15.14 | 14.33 | 19.01 | 16.91 |
| Conventional Consideration | 16.73 | 18.56 | 13.70 | 14.45 | 20.74 | 19.01 | 10.02 | 12.61 | 15.49 | 17.04 |

Note. Possible score range is 11-55 for Educational Barriers scale, 11-55 for Coping Efficacy scale, 0-63 for each Interest scale, and 0-63 for each Consideration scale.

Table 3

Correlations among Predictor and Criterion Variables (Entire Sample)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|---------|---------|----|
| 1. RI | - | | | | | | | | | | | | | |
| 2. II | .575** | - | | | | | | | | | | | | |
| 3. AI | .282** | .509** | - | | | | | | | | | | | |
| 4. SI | .283** | .443** | .551** | - | | | | | | | | | | |
| 5. EI | .423** | .345** | .456** | .545** | - | | | | | | | | | |
| 6. CI | .357** | .259** | .334** | .553** | .639** | - | | | | | | | | |
| 7. RC | .662** | .270** | .065 | .094 | .282** | .173** | - | | | | | | | |
| 8. IC | .337** | .659** | .307** | .275** | .257** | .218** | .489** | - | | | | | | |
| 9. AC | .158** | .349** | .755** | .396** | .401** | .303** | .262** | .488** | - | | | | | |
| 10. SC | .134** | .272** | .362** | .808** | .404** | .492** | .210** | .344** | .444** | - | | | | |
| 11. EC | .313** | .241** | .268** | .347** | .804** | .579** | .372** | .379** | .430** | .452** | - | | | |
| 12. CC | .237** | .139** | .181** | .394** | .535** | .834** | .264** | .299** | .324** | .532** | .685** | - | | |
| 13. EB | .035 | .062 | .029 | .059 | .059 | .101* | .058 | .066 | .118* | .108* | .082 | .117* | - | |
| 14. CE | -.090 | -.014 | -.058 | -.093 | -.108* | -.116* | -.138** | .004 | -.082 | -.114* | -.065 | -.134** | -.399** | - |

Note: RI= Realistic Interest; II= Investigative Interest; AI= Artistic Interest; SI= Social Interest; EI= Enterprising Interest;

CI= Conventional Interest; RC= Realistic Consideration; IC= Investigative Consideration; AC= Artistic Consideration;

SC= Social Consideration; EC= Enterprising Consideration; CC= Conventional Consideration; EB= Educational Barriers;

CE= Coping Efficacy. * $p < .05$, two-tailed, ** $p < .01$, two tailed.

Hypothesis 1- Primary Analysis of Moderation Effect of Educational Barriers on the Interest/Choice Consideration Relation with Entire Sample:

Six hierarchical regression analyses were conducted to examine to what extent educational barriers moderated the relation of interests to choice considerations (a goal) for all participants across Holland's themes. The scores of the modified version of the Educational Barriers subscale of the POB that included the 11 items that assess external educational barriers were used as the measure of educational barriers for the entire sample. This was done because these items are not limited to discrimination based on gender or ethnicity, and thus, they potentially apply to all participants.

For the Holland's Realistic theme regression, in the first step, Realistic Interest and Educational Barriers were entered into the equation, $F(2, 375) = 147.23, p < .001$, accounting for 44% of the variance. For Step 2, the interaction between Realistic Interest and Educational Barriers was added to the equation, but it did not add to the unique variance of Realistic choice consideration, ($\Delta R^2 = .00, p > .05$). A review of the β -coefficients revealed that the only significant predictor of Realistic choice consideration is Realistic Interest ($\beta = .66, p < .001$), and thus there is no evidence of a moderating effect.

Regarding the Investigative theme regression, in the first step, Investigative Interest and Educational Barriers were entered into the equation, $F(2, 373) = 143.39, p < .001$, accounting for 44% of the variance. The interaction between Investigative Interest and Educational Barriers added in Step 2 did not account for unique variance in Investigative choice consideration, ($\Delta R^2 = .00, p > .05$). An examination of the β coefficients in step 1 revealed that the only significant predictors of Investigative choice

consideration is Investigative Interest ($\beta = .66, p < .001$). In other words, controlling for interests, educational barriers did not contribute unique variance to Investigative choice considerations nor serve as a moderator of the relation of interests to choice goals.

For the Holland's Artistic theme regression, in the first step, Artistic Interest and Educational Barriers were entered into the equation, $F(2, 373) = 257.83, p < .001$, accounting for 58% of the variance. For Step 2, the interaction between Artistic Interest and Educational Barriers was added to the equation but did not account for unique variance of Artistic choice consideration, ($\Delta R^2 = .00, p > .05$). An examination of the β coefficient revealed that Artistic Interest ($\beta = .75, p < .001$) and Educational Barriers ($\beta = .10, p < .01$) significantly predicted Artistic choice consideration. Because the interaction was not a significant predictor, there is no evidence for a moderating effect for the Artistic theme.

For the regression involving the Holland's Social theme, in the first step, Social Interest and Educational Barriers were entered into the equation, $F(2, 370) = 354.67, p < .001$, accounting for 66% of the variance. For step 2, the interaction between Social Interest and Educational Barriers was added to the equation. With the interaction in the equation, no additional variance was accounted for, ($\Delta R^2 = .00, p > .05$). An examination of the β coefficients revealed that Social Interest ($\beta = .81, p < .001$) and Educational Barriers ($\beta = .06, p < .05$) were predictors of Social choice consideration. Because the interaction was not a significant predictor, there is no evidence for a moderating effect for the Social theme.

Regarding the Enterprising theme, in step one, Enterprising Interest and Educational Barriers were entered into the equation, $F(2, 370) = 339.86, p < .001$,

accounting for 65% of the variance. For Step 2, the interaction between Enterprising Interest and Educational Barriers was added to the equation. With the interaction in the equation, no additional variance was accounted for ($\Delta R^2 = .00$, $p > .05$). A review of the β coefficient revealed that Enterprising Interest ($\beta = .80$, $p < .001$) was the only significant predictor of Enterprising choice consideration, thus a moderating effect was not detected for this theme.

For the Conventional theme, in step one, Conventional Interest and Educational Barriers were entered into the equation, $F(2, 371) = 424.26$, $p < .001$, accounting for 70% of the variance. In step 2, the interaction between Conventional Interest and Educational Barriers was added to the equation but did not account for unique variance of Conventional choice consideration, ($\Delta R^2 = .00$, $p > .05$). An examination of the β coefficient revealed that the only significant predictor of Conventional choice consideration is Conventional Interest ($\beta = .83$, $p < .001$). In other words, educational barriers do not have a moderating effect on the interest/choice consideration relation in this area.

In sum, results showed that for all of Holland's themes, controlling for educational barriers, interests and choice consideration of careers for each theme were highly related. However, controlling for interest in the themes, educational barriers contributed unique variance to choice goals only for the Artistic and Social Holland career types. Furthermore, the interaction between interest and educational barriers was not a significant predictor of choice consideration for any of Holland's themes, and therefore, educational barriers did not have a moderating effect on the interest/choice consideration relation for any of the themes. Results are displayed in Table 4.

Table 4

Hierarchical Regression Analysis for Moderation Effect of Educational Barriers on Interests/Choice Consideration Relations for Entire Sample

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|---|--------|---------|---------|--------|--------------|-----------|
| Realistic Choice Consideration | | | | | | |
| Step 1 | | | | .44*** | .44*** | 147.23*** |
| Realistic Interest | .60*** | .04 | .66*** | | | |
| Educational Barriers | .05 | .05 | .04 | | | |
| Step 2 | | | | .44*** | .001 | 98.10*** |
| Realistic Interest | .60*** | .04 | .66*** | | | |
| Educational Barriers | .05 | .05 | .04 | | | |
| Interaction Between Interest and Barriers | | .004 | -.02 | | | |
| Investigative Choice Consideration | | | | | | |
| Step 1 | | | | .44*** | .44*** | 143.39*** |
| Investigative Interest | .56*** | .03 | .66*** | | | |
| Educational Barriers | .04 | .06 | .02 | | | |
| Step 2 | | | | .44*** | .00 | 95.42*** |
| Investigative Interest | .56*** | .03 | .66*** | | | |
| Educational Barriers | .04 | .06 | .03 | | | |
| Interaction Between Interest and Barriers | .001 | .004 | .02 | | | |
| Artistic Choice Consideration | | | | | | |
| Step 1 | | | | .58*** | .58*** | 257.83*** |
| Artistic Interest | .71*** | .03 | .75*** | | | |
| Educational Barriers | .17** | .06 | .10** | | | |
| Step 2 | | | | .58*** | .00 | 172.58*** |
| Artistic Interest | .71*** | .03 | .75*** | | | |
| Educational Barriers | .18** | .06 | .10** | | | |
| Interaction Between Interest and Barriers | .00 | .00 | .04 | | | |
| Social Choice Consideration | | | | | | |
| Step 1 | | | | .66*** | .66*** | 354.67*** |
| Social Interest | .79*** | .03 | .81*** | | | |
| Educational Barriers | .10* | .05 | .06* | | | |
| Step 2 | | | | .66*** | .00 | 237.88*** |
| Social Interest | .79*** | .03 | .81*** | | | |
| Educational Barriers | .10* | .05 | .06* | | | |
| Interaction Between Interest and Barriers | .01 | .00 | .05 | | | |

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|---|--------|---------|---------|--------|--------------|-----------|
| Enterprising Choice Consideration | | | | | | |
| Step 1 | | | | .65*** | .65*** | 339.86*** |
| Enterprising Interest | .79*** | .03 | .80*** | | | |
| Educational Barriers | .06 | .06 | .03 | | | |
| Step 2 | | | | .65*** | .00 | 229.39*** |
| Enterprising Interest | .79*** | .03 | .80*** | | | |
| Educational Barriers | .06 | .06 | .04 | | | |
| Interaction Between Interest and Barriers | .01 | .00 | .06 | | | |
| Conventional Choice Consideration | | | | | | |
| Step 1 | | | | .70*** | .70*** | 424.26*** |
| Conventional Interest | .80*** | .03 | .83*** | | | |
| Educational Barriers | .05 | .05 | .03 | | | |
| Step 2 | | | | .70*** | .00 | 282.41*** |
| Conventional Interest | .80*** | .03 | .83*** | | | |
| Educational Barriers | .05 | .05 | .03 | | | |
| Interaction Between Interest and Barriers | .00 | .00 | .02 | | | |

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.

Hypothesis 2- Primary Analysis of Moderation Effect of Coping Efficacy on Educational Barrier/Choice Consideration Relation for Entire Sample:

For the Holland's Realistic theme regression, in the first step, Coping Efficacy and Educational Barriers were entered into the equation, $F(2, 375) = 3.63$, $p \leq .05$, accounting for 2% of the variance. For Step 2, the interaction between Coping Efficacy and Educational Barriers was added to the equation, but it did not add to the unique variance of Realistic choice consideration, ($\Delta R^2 = .00$, $p > .05$). A review of the β coefficient revealed that only Coping Efficacy ($\beta = -.14$, $p < .05$) predicted Realistic choice consideration. In other words, Coping Efficacy was not found to moderate the relation between Educational barriers and Realistic choice consideration.

For the Holland's Investigative theme regression, in the first step, Coping

Efficacy and Educational Barriers were entered into the equation, $F(2, 376) = 1.04$, $p > .05$, and accounted for no significant amount of the variance. For Step 2, the interaction between Coping Efficacy and Educational Barriers was added to the equation, but it did not add to the unique variance of Investigative choice consideration, ($\Delta R^2 = .00$, $p > .05$). Thus, Coping Efficacy did not moderate the relation between Educational Barriers and Investigative choice consideration.

For the Holland's Artistic theme regression, in the first step, Coping Efficacy and Educational Barriers were entered into the equation, $F(2, 375) = 2.93$, $p > .05$, accounting for no significant variance. For Step 2, the interaction between Coping Efficacy and Educational Barriers was added to the equation, but it did not add to the unique variance of Artistic choice consideration, ($\Delta R^2 = .00$, $p > .05$). Therefore, no moderation effect was found for Coping Efficacy on the relation between Educational Barriers and Artistic choice consideration.

For the Holland's Social theme regression, in the first step, Coping Efficacy and Educational Barriers were entered into the equation, $F(2, 373) = 3.32$, $p < .05$, accounting for 2% of the variance. For Step 2, the interaction between Coping Efficacy and Educational Barriers was added to the equation, but it did not add to the unique variance of Realistic choice consideration, ($\Delta R^2 = .00$, $p > .05$). A review of the β coefficient revealed that none of the predictor variables independently predicted Social choice consideration. Therefore, Coping Efficacy was not found to moderate the relation between Educational Barriers and Social choice consideration.

For the Holland's Enterprising theme regression, in the first step, Coping Efficacy and Educational Barriers were entered into the equation, $F(2, 372) = 1.49$, $p > .05$,

accounting for no significant variance. For Step 2, the interaction between Coping Efficacy and Educational Barriers was added to the equation, but it did not add to the unique variance of Enterprising choice consideration, ($\Delta R^2 = .00$, $p > .05$). And so, Coping Efficacy was not found to moderate the relation between Educational Barriers and Enterprising choice consideration.

For the Holland's Conventional theme regression, in the first step, Coping Efficacy and Educational Barriers were entered into the equation, $F(2, 373) = 4.31$, $p < .05$, accounting for 2% of the variance. For Step 2, the interaction between Coping Efficacy and Educational Barriers was added to the equation, but it did not add to the unique variance of Conventional choice consideration, ($\Delta R^2 = .00$, $p > .05$). A review of the β coefficient revealed that none of the predictor variables independently predicted Conventional choice consideration. In other words, Coping Efficacy was not found to moderate the relation between Educational Barriers and Conventional choice consideration.

In sum, results showed that coping efficacy and Realistic choice consideration were negatively correlated when controlling for educational barriers, but coping efficacy and choice consideration were not significantly related for any of the other themes. When controlling for coping efficacy, educational barriers were not related to choice consideration for any of Holland's career themes. Furthermore, the interaction between coping efficacy and educational barriers was not a significant predictor of choice consideration for any of Holland's themes, and therefore, coping efficacy did not have a moderating effect on the educational barrier/choice consideration relation for any of the themes. Table 5 summarizes the results.

Table 5

*Hierarchical Regression Analysis for Moderation Effect of Coping Efficacy on**Educational Barriers/Choice Consideration Relations for Entire Sample*

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|--|-------|------|---------|-------|--------------|-------|
| Realistic Choice Consideration | | | | | | |
| Step 1 | | | | .02* | .02* | 3.63* |
| Coping Efficacy | -.19* | .08 | -.14* | | | |
| Educational Barriers | .01 | .08 | .00 | | | |
| Step 2 | | | | .02* | .00 | 2.53 |
| Coping Efficacy | -.19* | .08 | -.14* | | | |
| Educational Barriers | .00 | .08 | .00 | | | |
| Interaction Between Coping Efficacy and Barriers | -.00 | .01 | -.03 | | | |
| Investigative Choice Consideration | | | | | | |
| Step 1 | | | | .01 | .01 | 1.04 |
| Coping Efficacy | .05 | .08 | .04 | | | |
| Educational Barriers | .11 | .08 | .08 | | | |
| Step 2 | | | | .01 | .00 | .77 |
| Coping Efficacy | .05 | .08 | .04 | | | |
| Educational Barriers | .11 | .08 | .08 | | | |
| Interaction Between Coping Efficacy and Barriers | -.00 | .01 | -.02 | | | |
| Artistic Choice Consideration | | | | | | |
| Step 1 | | | | .02 | .02 | 2.93 |
| Coping Efficacy | -.07 | .10 | -.04 | | | |
| Educational Barriers | .18 | .10 | .10 | | | |
| Step 2 | | | | .02 | .00 | 1.99 |
| Coping Efficacy | -.07 | .10 | -.04 | | | |
| Educational Barriers | .17 | .10 | .10 | | | |
| Interaction Between Coping Efficacy and Barriers | -.00 | .01 | -.02 | | | |
| Social Choice Consideration | | | | | | |
| Step 1 | | | | .02* | .02* | 3.32* |
| Coping Efficacy | -.14 | .09 | -.08 | | | |
| Educational Barriers | .12 | .09 | .07 | | | |
| Step 2 | | | | .02* | .00 | 2.31 |
| Coping Efficacy | -.14 | .09 | -.08 | | | |
| Educational Barriers | .13 | .09 | .08 | | | |
| Interaction Between Coping Efficacy and Barriers | .01 | .01 | .03 | | | |

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|--|------|------|---------|-------|--------------|-------|
| Enterprising Choice Consideration | | | | | | |
| Step 1 | | | | .01 | .01 | 1.49 |
| Coping Efficacy | -.07 | .10 | -.04 | | | |
| Educational Barriers | .12 | .10 | .07 | | | |
| Step 2 | | | | .01 | .00 | 1.08 |
| Coping Efficacy | -.07 | .10 | -.04 | | | |
| Educational Barriers | .11 | .10 | .06 | | | |
| Interaction Between Coping Efficacy and Barriers | -.01 | .01 | -.03 | | | |
| Conventional Choice Consideration | | | | | | |
| Step 1 | | | | .02* | .02* | 4.31* |
| Coping Efficacy | -.18 | .10 | -.10 | | | |
| Educational Barriers | .14 | .10 | .08 | | | |
| Step 2 | | | | .02* | .00 | 2.91* |
| Coping Efficacy | -.18 | .10 | -.10 | | | |
| Educational Barriers | .13 | .10 | .07 | | | |
| Interaction Between Coping Efficacy and Barriers | -.00 | .01 | -.02 | | | |

Note. *** $p \leq .001$; ** $p < .01$; * $p < .05$.

Hypothesis 3- Primary Analysis of Mediation Effect of Coping Efficacy on Educational Barriers/ Choice Consideration Relation with Entire Sample:

To test the first condition (i.e., educational barriers are significantly associated with choice consideration), regressions were run for each of Holland's themes with Educational Barriers as the predictor and choice consideration as the dependent variable. For the Realistic theme, Educational Barriers did not account for any significant amount of the variance of Realistic choice consideration, $F(1, 376) = 1.28$, $p > .05$. Thus, Coping Efficacy would not serve as a mediator between Educational Barriers and choice consideration for the Realistic theme. For the Investigative theme, Educational Barriers did not significantly predict Investigative choice consideration, $F(1, 377) = 1.67$, $p > .05$, and so Coping Efficacy would not serve as a mediator between Educational Barriers and choice consideration for the Realistic theme. For the Artistic theme, Educational Barriers

predicted Artistic choice consideration, $F(1, 376) = 5.32, p < .05$ ($\beta = .12, p < .05$), accounting for 1 % of the variance. For the Social theme, Educational Barriers predicted 1% of the variance of Social choice consideration, $F(1, 374) = 4.37, p < .05$ ($\beta = .11, p < .05$). For the Enterprising theme, Educational Barriers did not predict Enterprising choice consideration, $F(1, 373) = 2.50, p > .05$, which means Coping Efficacy would not serve as a mediator between Educational Barriers and choice consideration for the Realistic theme. For the Conventional theme, Educational Barriers predicted Conventional choice consideration, $F(1, 374) = 5.15, p < .05$ ($\beta = .12, p < .05$), accounting for 1 % of the variance. Table 6 summarizes the results.

Table 6

Summary of Regression Analysis for Educational Barrier/Choice Consideration

Relations for Entire Sample

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|---|------|---------|---------|-------|--------------|-------|
| Realistic Choice Consideration | | | | | | |
| Educational Barriers | .08 | .07 | .06 | .00 | .00 | 1.28 |
| Investigative Choice Consideration | | | | | | |
| Educational Barriers | .09 | .07 | .07 | .00 | .00 | 1.67 |
| Artistic Choice Consideration | | | | | | |
| Educational Barriers | .21* | .09 | .12* | .01* | .01* | 5.32* |
| Social Choice Consideration | | | | | | |
| Educational Barriers | .18* | .09 | .11* | .01* | .01* | 4.37* |
| Enterprising Choice Consideration | | | | | | |
| Educational Barriers | .15 | .09 | .08 | .01 | .01 | 2.50 |
| Conventional Choice Consideration | | | | | | |
| Educational Barriers | .21* | .09 | .12* | .01* | .01* | 5.15* |

Note. * $p < .05$.

To test the second condition (i.e., educational barriers are associated with coping efficacy, a regression was run with Educational Barriers as the predictor and Coping Efficacy as the dependent variable. Educational Barriers accounted for 16% of the variance of Coping Efficacy, ($\beta = -.40$, $p < .001$), $F(1, 378) = 71.71$, $p < .001$. Table 7 summarizes the results.

Table 7

Summary of Regression Analysis for Coping Efficacy/Barrier Relation for Entire Sample

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|------------------------|---------|------|---------|--------|--------------|----------|
| Coping Efficacy | | | | | | |
| Educational Barriers | -.41*** | .05 | -.40*** | .16*** | .16*** | 71.71*** |

Note. *** $p < .001$.

To test the third condition (i.e., coping efficacy is significantly associated with choice consideration after controlling for barriers), a regression was run with Educational Barriers and Coping Efficacy simultaneously entered as the predictor variables and choice consideration as the dependent variable for the three areas which were found to be significant in the first condition (i.e. Artistic, Social, and Conventional). For the Artistic theme, results indicated that the model did not account for any significant variance, $F(2, 375) = 2.93$, $p > .05$. For the Social theme, the model accounted for 2% of the variance of Social choice consideration, $F(2, 373) = 3.32$, $p < .05$. However, neither Educational Barriers nor Coping Efficacy independently predicted Social choice consideration. For the Conventional theme, the model accounted for 2% of the variance of Conventional choice consideration, $F(2, 373) = 4.31$, $p < .05$. However, neither Educational Barriers nor Coping Efficacy alone accounted for choice consideration in this area. In sum, Coping Efficacy was not found to significantly predict choice consideration after

controlling for barriers for any of the themes. Table 8 presents findings.

Table 8

Summary of Regression Analysis for Coping Efficacy/Choice Consideration Relation

While Controlling for Educational Barriers for Entire Sample

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|--|------|------|---------|-------|--------------|-------|
| Artistic Choice Consideration | | | | | | |
| Step 1 | | | | .02 | .02 | 2.93 |
| Educational Barriers | .18 | .10 | .10 | | | |
| Coping Efficacy | -.07 | .10 | -.04 | | | |
| Social Choice Consideration | | | | | | |
| Step 1 | | | | .02* | .02* | 3.32* |
| Educational Barriers | .12 | .09 | .07 | | | |
| Coping Efficacy | -.14 | .09 | -.08 | | | |
| Conventional Choice Consideration | | | | | | |
| Step 1 | | | | .02* | .02* | 4.31* |
| Educational Barriers | .14 | .10 | .08 | | | |
| Coping Efficacy | -.18 | .10 | -.10 | | | |

Note. * $p < .05$.

In order for coping efficacy to be a mediator of the barrier-career consideration relation, four conditions must be met: 1) barriers (predictor) are significantly associated with choice consideration, 2) barriers (predictor) are significantly associated with coping efficacy, 3) coping efficacy is significantly associated with choice consideration after controlling for barriers, 4) the association of barriers to choice consideration is significantly less after controlling for coping efficacy (Holmbeck, 1997). In sum, for the first condition, results showed that educational barriers significantly predicted choice consideration for the Artistic, Social, and Conventional themes. The second condition was met because coping efficacy and educational barriers were negatively correlated. However, the third condition was not met because coping efficacy was not related to

choice consideration for the Artistic, Social, and Conventional themes when controlling for educational barriers, and therefore, no further analyses were conducted. Hence, no evidence of mediation was found.

Descriptive Analyses for African American Females with Unmodified Career Barrier Scale

The scores of the unmodified version of the Career Barriers subscale of the POB that assess barriers of ethnic and gender discrimination and competing family commitments was analyzed for a subsample that only included African American female participants. The means and standard deviations were computed for the scores of each assessment instrument for the African American female participants. (See Table 9). Correlations were also computed among predictor and criterion variables for these participants (see Table 10). Results indicated that interests and choice considerations were significantly correlated at the .01 level for each the Holland's themes. However, there were no significant correlations between career barriers and coping efficacy, between coping efficacy and career choice consideration for any of Holland's themes, or .between career barriers and career choice consideration for any of Holland's themes

Table 9

*Means and Standard Deviations of Assessment**Instruments for African American Females*

| | M | SD |
|-----------------------------|----------|-----------|
| Career Barriers | 27.03 | 10.50 |
| Coping Efficacy | 26.59 | 8.23 |
| Realistic Interest | 12.46 | 16.09 |
| Investigative Interest | 14.23 | 17.35 |
| Artistic Interest | 27.44 | 19.88 |
| Social Interest | 28.52 | 18.67 |
| Enterprising Interest | 24.67 | 19.27 |
| Conventional Interest | 26.50 | 19.59 |
| Realistic Consideration | 8.08 | 12.63 |
| Investigative Consideration | 9.07 | 12.61 |
| Artistic Consideration | 22.54 | 18.48 |
| Social Consideration | 26.43 | 18.11 |
| Enterprising Consideration | 20.22 | 18.80 |
| Conventional Consideration | 22.22 | 20.05 |

Note. Possible score range is 11-55 for Career Barriers scale, 7-35 for Coping Efficacy scale, 0-63 for each Interest scale, and 0-63 for each Consideration scale.

Table 10

Correlations among Predictor and Criterion Variables (African American Females)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|------|----|
| 1. RI | - | | | | | | | | | | | | | |
| 2. II | .786** | - | | | | | | | | | | | | |
| 3. AI | .462** | .607** | - | | | | | | | | | | | |
| 4. SI | .526** | .603** | .588** | - | | | | | | | | | | |
| 5. EI | .459** | .450** | .580** | .682** | - | | | | | | | | | |
| 6. CI | .486** | .379** | .400** | .663** | .716** | - | | | | | | | | |
| 7. RC | .506** | .407** | .241** | .325** | .274** | .284** | - | | | | | | | |
| 8. IC | .363** | .533** | .387** | .399** | .303** | .264** | .728** | - | | | | | | |
| 9. AC | .226* | .363** | .754** | .430** | .474** | .325** | .391** | .557** | - | | | | | |
| 10. SC | .274** | .346** | .339** | .775** | .510** | .576** | .444** | .437** | .470** | - | | | | |
| 11. EC | .278** | .277** | .336** | .473** | .770** | .630** | .427** | .496** | .499** | .582** | - | | | |
| 12. CC | .293** | .167 | .211* | .469** | .588** | .818** | .420** | .358** | .371** | .624** | .725** | - | | |
| 13. CB | .130 | .146 | .040 | -.045 | -.009 | .156 | .079 | .166 | -.012 | -.029 | .100 | .041 | - | |
| 14. CE | -.070 | -.062 | -.093 | -.199* | -.167 | -.070 | -.036 | -.007 | -.055 | -.103 | -.020 | -.058 | .113 | - |

Note: RI= Realistic Interest; II= Investigative Interest; AI= Artistic Interest; SI= Social Interest; EI= Enterprising Interest; CI= Conventional Interest; RC= Realistic Consideration; IC= Investigative Consideration; AC= Artistic Consideration; SC= Social Consideration; EC= Enterprising Consideration; CC= Conventional Consideration; CB= Career Barriers; CE= Coping Efficacy. * $p < .05$, two-tailed, ** $p < .01$, two tailed.

Hypothesis 4- Primary Analysis of Moderation Effect of Career Barriers on the Interest/Choice Consideration Relation with African American Female Participants:

Six hierarchical regression analyses were conducted to examine to what extent career barriers moderated the relation of interests to choice considerations (a goal) for African American female participants across Holland's themes. The scores of the unmodified version of the Career Barriers subscale of the POB was used as the measure of career barriers for the sample of African American females because these items assess barriers and coping efficacy related to both gender and ethnic discrimination and competing family responsibilities.

For the Holland's Realistic theme regression, in the first step, Realistic Interest and Career Barriers were entered into the equation, $F(2, 119) = 20.54, p < .001$, accounting for 26% of the variance. For Step 2, the interaction between Realistic Interest and Career Barriers was added to the equation, but it did not add to the unique variance of Realistic choice consideration, ($\Delta R^2 = .00, p > .05$). A review of the β - coefficients revealed that the only significant predictor of Realistic choice consideration is Realistic Interest ($\beta = .51, p < .001$), and thus there is no evidence of a moderating effect.

Regarding the Investigative theme regression, in the first step, Investigative Interest and Career Barriers were entered into the equation, $F(2, 117) = 23.92, p < .001$, accounting for 29% of the variance. The interaction between Investigative Interest and Career Barriers added in Step 2 did not account for unique variance in Investigative choice consideration, ($\Delta R^2 = .00, p > .05$). An examination of the β coefficients in step 1 revealed that the only significant predictors of Investigative choice consideration is Investigative Interest ($\beta = .52, p < .001$). In other words, controlling for interests, career

barriers did not contribute unique variance to Investigative choice considerations nor serve as a moderator of the relation of interests to choice goals.

For the Holland's Artistic theme regression, in the first step, Artistic Interest and Career Barriers were entered into the equation, $F(2, 118) = 78.45, p < .001$, accounting for 57% of the variance. For Step 2, the interaction between Artistic Interest and Career Barriers was added to the equation but did not account for unique variance of Artistic choice consideration, ($\Delta R^2 = .00, p > .05$). An examination of the β coefficient revealed that Artistic Interest ($\beta = .76, p < .001$) alone significantly predicted Artistic choice consideration. Because the interaction was not a significant predictor, there is no evidence for a moderating effect for the Artistic theme.

For the regression involving the Holland's Social theme, in the first step, Social Interest and Career Barriers were entered into the equation, $F(2, 114) = 85.72, p < .001$, accounting for 60% of the variance. For step 2, the interaction between Social Interest and Career Barriers was added to the equation. With the interaction in the equation, no additional variance was accounted for, ($\Delta R^2 = .00, p > .05$). An examination of the β coefficients revealed that Social Interest ($\beta = .78, p < .001$) was the only predictor of Social choice consideration. Because the interaction was not a significant predictor, there is no evidence for a moderating effect for the Social theme.

Regarding the Enterprising theme, in step one, Enterprising Interest and Career Barriers were entered into the equation, $F(2, 118) = 90.43, p < .001$, accounting for 61% of the variance. For Step 2, the interaction between Enterprising Interest and Career Barriers was added to the equation. With the interaction in the equation, no additional variance was accounted for ($\Delta R^2 = .00, p > .05$). A review of the β coefficient revealed

that Enterprising Interest ($\beta = .77, p < .001$) was the only significant predictor of Enterprising choice consideration, thus a moderating effect was not detected for this theme.

For the Conventional theme, in step one, Conventional Interest and Career Barriers were entered into the equation, $F(2, 117) = 122.45, p < .001$, accounting for 68% of the variance. In step 2, the interaction between Conventional Interest and Career Barriers was added to the equation but did not account for unique variance of Conventional choice consideration, ($\Delta R^2 = .00, p > .05$). An examination of the β coefficient revealed that the only significant predictor of Conventional choice consideration is Conventional Interest ($\beta = .83, p < .001$). In other words, career barriers do not have a moderating effect on the interest/choice consideration relation in this area.

In sum, results showed that for all of Holland's themes, controlling for career barriers, interests and choice consideration of careers for each theme were highly related in this sample of African American females. However, controlling for interest in the themes, educational barriers did not contribute unique variance to choice goals for any of Holland's career types. Furthermore, the interaction between interest and career barriers was not a significant predictor of choice consideration for any of Holland's themes. Therefore, career barriers did not have a moderating effect on the interest/choice consideration relation for any of the themes. Results of these regressions are displayed in Table 11.

Table 11

*Hierarchical Regression Analysis for Moderation Effect of Career Barriers on**Interests/Choice Consideration Relations for African American Females*

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|--|--------|---------|---------|--------|--------------|----------|
| Realistic Choice Consideration | | | | | | |
| Step 1 | | | | .26*** | .26*** | 20.54*** |
| Realistic Interest | .40*** | .06 | .51*** | | | |
| Career Barriers | .02 | .10 | .01 | | | |
| Step 2 | | | | .26*** | .00 | 13.63*** |
| Realistic Interest | .40*** | .06 | .51*** | | | |
| Career Barriers | .02 | .10 | .02 | | | |
| Interaction Between Interest and Barriers | -.00 | .01 | -.03 | | | |
| Investigative Choice Consideration | | | | | | |
| Step 1 | | | | .29*** | .29*** | 23.92*** |
| Investigative Interest | .38*** | .06 | .52*** | | | |
| Career Barriers | .10 | .10 | .08 | | | |
| Step 2 | | | | .29*** | .00 | 16.12*** |
| Investigative Interest | .37*** | .06 | .51*** | | | |
| Career Barriers | .09 | .10 | .07 | | | |
| Interaction Between Interest and Barriers | .00 | .01 | .06 | | | |
| Artistic Choice Consideration | | | | | | |
| Step 1 | | | | .57*** | .57*** | 78.45*** |
| Artistic Interest | .71*** | .06 | .76*** | | | |
| Career Barriers | -.08 | .11 | -.05 | | | |
| Step 2 | | | | .57*** | .00 | 52.61*** |
| Artistic Interest | .71*** | .06 | .76*** | | | |
| Career Barriers | -.08 | .11 | -.05 | | | |
| Interaction Between Interest and Barriers | .01 | .01 | .06 | | | |
| Social Choice Consideration | | | | | | |
| Step 1 | | | | .60*** | .60*** | 85.72*** |
| Social Interest | .75*** | .06 | .78*** | | | |
| Career Barriers | -.01 | .10 | -.00 | | | |
| Step 2 | | | | .60*** | .00 | 56.65*** |
| Social Interest | .75*** | .06 | .78*** | | | |
| Career Barriers | -.01 | .10 | -.00 | | | |
| Interaction Between Interest and Barriers | .00 | .01 | .01 | | | |

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|---|--------|---------|---------|--------|--------------|---------------|
| Enterprising Choice Consideration | | | | | | |
| Step 1 | | | | .61*** | .61*** | 90.43*** |
| Enterprising Interest | .75*** | .06 | .77*** | | | |
| Career Barriers | .19 | .10 | .11 | | | |
| Step 2 | | | | .61*** | .00 | 61.66*** |
| Enterprising Interest | .76*** | .06 | .78*** | | | |
| Career Barriers | .18 | .10 | .10 | | | |
| Interaction Between Interest and Barriers | .01 | .01 | .09 | | | |
| Conventional Choice Consideration | | | | | | |
| Step 1 | | | | .68*** | .68*** | 122.45** * |
| Conventional Interest | .85*** | .05 | .83*** | | | |
| Career Barriers | -.17 | .10 | -.09 | | | |
| Step 2 | | | | .68*** | .00 | 81.44*** |
| Conventional Interest | .85*** | .06 | .83*** | | | |
| Career Barriers | -.18 | .10 | -.10 | | | |
| Interaction Between Interest and Barriers | .00 | .01 | .04 | | | |

Note. *** $p < .001$; ** $p < .01$ * $p < .05$

Hypothesis 5. Primary Analysis of Moderation Effect of Coping Efficacy on Educational Barrier/Choice Consideration Relation for African American Females:

For the Holland's Realistic theme regression, in the first step, Coping Efficacy and Career Barriers were entered into the equation, $F(2, 119) = .50$, $p > .05$, but accounted for none of the variance. For Step 2, the interaction between Coping Efficacy and Career Barriers was added to the equation, but it did not add to the unique variance of Realistic choice consideration, ($\Delta R^2 = .00$, $p > .05$). In other words, Coping Efficacy was not found to moderate the relation between Career Barriers and Realistic choice consideration.

For the Holland's Investigative theme regression, in the first step, Coping Efficacy and Career Barriers were entered into the equation, $F(2, 119) = 1.73$, $p > .05$,

and accounted for no significant amount of the variance. For Step 2, the interaction between Coping Efficacy and Career Barriers was added to the equation, but it did not add to the unique variance of Investigative choice consideration, ($\Delta R^2 = .00$, $p > .05$). Thus, Coping Efficacy did not moderate the relation between Career Barriers and Investigative choice consideration.

For the Holland's Artistic theme regression, in the first step, Coping Efficacy and Career Barriers were entered into the equation, $F(2, 119) = .18$, $p > .05$, accounting for no significant variance. For Step 2, the interaction between Coping Efficacy and Career Barriers was added to the equation, but it did not add to the unique variance of Artistic choice consideration, ($\Delta R^2 = .00$, $p > .05$). Therefore, no moderation effect was found for Coping Efficacy on the relation between Career Barriers and Artistic choice consideration.

For the Holland's Social theme regression, in the first step, Coping Efficacy and Career Barriers were entered into the equation, $F(2, 117) = .65$, $p > .05$, accounting for none of the variance. For Step 2, the interaction between Coping Efficacy and Career Barriers was added to the equation, but it did not add to the unique variance of Realistic choice consideration, ($\Delta R^2 = .01$, $p > .05$). Therefore, Coping Efficacy was not found to moderate the relation between Career Barriers and Social choice consideration.

For the Holland's Enterprising theme regression, in the first step, Coping Efficacy and Career Barriers were entered into the equation, $F(2, 118) = .67$, $p > .05$, accounting for no significant variance. For Step 2, the interaction between Coping Efficacy and Career Barriers was added to the equation, but it did not add to the unique variance of Enterprising choice consideration, ($\Delta R^2 = .00$, $p > .05$). And so, Coping Efficacy was not

found to moderate the relation between Career Barriers and Enterprising choice consideration.

For the Holland's Conventional theme regression, in the first step, Coping Efficacy and Career Barriers were entered into the equation, $F(2, 118) = .35, p > .05$, accounting for none of the variance. For Step 2, the interaction between Coping Efficacy and Career Barriers was added to the equation, but it did not add to the unique variance of Conventional choice consideration, ($\Delta R^2 = .00, p > .05$). In other words, Coping Efficacy was not found to moderate the relation between Career Barriers and Conventional choice consideration.

In sum, results showed that when controlling for coping efficacy, career barriers were not related to choice consideration for any of Holland's career themes, and coping efficacy and choice consideration were not correlated when controlling for career barriers for any of the Holland's themes,. Furthermore, the interaction between coping efficacy and career barriers was not a significant predictor of choice consideration for any of Holland's themes. Therefore, coping efficacy did not have a moderating effect on the career barrier/choice consideration relation for any of the themes. Table 12 summarizes the results.

Table 12

*Hierarchical Regression Analysis for Moderation Effect of Coping Efficacy on**Interests/Choice Consideration Relations For African American Females*

| Variable | B | SE B | β | R ² | ΔR^2 | F |
|--|------|------|---------|----------------|--------------|------|
| Realistic Choice Consideration | | | | | | |
| Step 1 | | | | .01 | .01 | .50 |
| Coping Efficacy | -.07 | .14 | -.05 | | | |
| Career Barriers | .10 | .11 | .08 | | | |
| Step 2 | | | | .02 | .00 | .35 |
| Coping Efficacy | -.08 | .15 | -.05 | | | |
| Career Barriers | .10 | .11 | .08 | | | |
| Interaction Between Coping Efficacy and Barriers | -.00 | .01 | -.02 | | | |
| Investigative Choice Consideration | | | | | | |
| Step 1 | | | | .03 | .03 | 1.73 |
| Coping Efficacy | -.04 | .14 | -.03 | | | |
| Career Barriers | .20 | .11 | .17 | | | |
| Step 2 | | | | .03 | .00 | 1.15 |
| Coping Efficacy | -.05 | .15 | -.03 | | | |
| Career Barriers | .20 | .11 | .17 | | | |
| Interaction Between Coping Efficacy and Barriers | -.00 | .01 | -.01 | | | |
| Artistic Choice Consideration | | | | | | |
| Step 1 | | | | .00 | .00 | .18 |
| Coping Efficacy | -.12 | .21 | -.05 | | | |
| Career Barriers | -.01 | .16 | -.01 | | | |
| Step 2 | | | | .00 | .00 | .16 |
| Coping Efficacy | -.09 | .22 | -.04 | | | |
| Career Barriers | -.01 | .16 | -.00 | | | |
| Interaction Between Coping Efficacy and Barriers | .01 | .02 | .04 | | | |
| Social Choice Consideration | | | | | | |
| Step 1 | | | | .01 | .01 | .65 |
| Coping Efficacy | -.22 | .20 | -.10 | | | |
| Career Barriers | -.03 | .16 | -.02 | | | |
| Step 2 | | | | .02 | .01 | .79 |
| Coping Efficacy | -.14 | .22 | -.06 | | | |
| Career Barriers | -.03 | .16 | -.02 | | | |
| Interaction Between Coping Efficacy and Barriers | .02 | .02 | .10 | | | |

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|--|------|------|---------|-------|--------------|-----|
| Enterprising Choice Consideration | | | | | | |
| Step 1 | | | | .01 | .01 | .67 |
| Coping Efficacy | -.08 | .22 | -.04 | | | |
| Career Barriers | .19 | .17 | .11 | | | |
| Step 2 | | | | .01 | .00 | .47 |
| Coping Efficacy | -.12 | .24 | -.05 | | | |
| Career Barriers | .19 | .17 | .11 | | | |
| Interaction Between Coping Efficacy and Barriers | -.01 | .02 | -.03 | | | |
| Conventional Choice Consideration | | | | | | |
| Step 1 | | | | .01 | .01 | .35 |
| Coping Efficacy | -.16 | .23 | -.07 | | | |
| Career Barriers | .10 | .18 | .05 | | | |
| Step 2 | | | | .01 | .00 | .27 |
| Coping Efficacy | -.12 | .26 | -.05 | | | |
| Career Barriers | .10 | .18 | .05 | | | |
| Interaction Between Coping Efficacy and Barriers | .01 | .02 | .03 | | | |

Note. *** $p \leq .001$; ** $p < .01$; * $p < .05$.

Hypothesis 6. Primary Analysis of Mediation Effect of Coping Efficacy on Career

Barriers/ Choice Consideration Relation with African American Females:

To test the first condition (i.e., career barriers are significantly associated with choice consideration), regressions were run for each of Holland's themes with Career Barriers as the predictor and choice consideration as the dependent variable. For the Realistic theme, Career Barriers did not account for any significant amount of the variance of Realistic choice consideration, $F(1, 120) = .75, p > .05$. For the Investigative theme, Career Barriers did not significantly predict Investigative choice consideration, $F(1, 120) = 3.40, p > .05$. For the Artistic theme, Career Barriers did not account for any significant amount of the variance of Artistic choice consideration, $F(1, 120) = .02, p > .05$. For the Social theme, Career Barriers did not account for any significant amount of

the variance of Social choice consideration, $F(1, 120) = .10, p > .05$. For the Enterprising theme, Career Barriers did not predict Enterprising choice consideration, $F(1, 119) = 1.21, p > .05$. For the Conventional theme, Career Barriers did not account for any significant amount of the variance of Conventional choice consideration, $F(1, 119) = .20, p > .05$.

In order for coping efficacy to be a mediator of the barrier-career consideration relation, four conditions must be met: 1) barriers (predictor) are significantly associated with choice consideration, 2) barriers (predictor) are significantly associated with coping efficacy, 3) coping efficacy is significantly associated with choice consideration after controlling for barriers, 4) the association of barriers to choice consideration is significantly less after controlling for coping efficacy (Holmbeck, 1997). In sum, for the first condition, results showed that Career Barriers were not predictive of choice consideration for any of Holland's themes. Therefore, Coping Efficacy could not serve as a mediator between Career Barriers and choice consideration for African American females. No further analyses were needed to test that remaining conditions. Table 13 summarizes the results.

Table 13

Summary of Regression Analysis for Barrier/Choice Consideration Relations for African American Females

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|---|------|------|---------|-------|--------------|------|
| Realistic Choice Consideration | | | | | | |
| Career Barriers | .10 | .11 | .08 | .01 | .01 | .75 |
| Investigative Choice Consideration | | | | | | |
| Career Barriers | .20 | .11 | .17 | .03 | .03 | .07 |
| Artistic Choice Consideration | | | | | | |
| Career Barriers | -.02 | .16 | -.01 | .00 | .00 | .02 |
| Social Choice Consideration | | | | | | |
| Career Barriers | -.05 | .16 | -.03 | .00 | .00 | .10 |
| Enterprising Choice Consideration | | | | | | |
| Career Barriers | .18 | .16 | .10 | .01 | .01 | 1.21 |
| Conventional Choice Consideration | | | | | | |
| Career Barriers | .08 | .18 | .04 | .00 | .00 | .20 |

Note. * $p < .05$.

Exploratory Ad Hoc Analyses

Because the primary analyses offered very few of the expected findings, exploratory analyses were conducted with career barriers and coping efficacy that are specifically relevant for certain groups. Exploratory analyses with all of the female participants (African American and Caucasian) were conducted using a modified version of the Career Related Barrier and Coping with Career Related Barriers subscales that only included items regarding gender discrimination and competing family commitments. The modified version of the Career Related Barrier subscale included 7 items, (e.g., in

my future career, I will probably be treated differently because of my sex, have a harder time getting hired than people of the opposite sex, and have difficulty getting time off when my children are sick), that yielded a Cronbach's alpha coefficient of .82. The modified version of the Coping with Career Related Barriers subscale included 5 items, (e.g., rate your degree of confidence in overcoming discrimination due to your gender, negative comments about your sex, and difficulty finding quality childcare), that yielded a Cronbach's alpha coefficient of .88.

Additionally, exploratory analyses with all of the African American participants (male and female) were conducted using a modified version of the Career Related Barrier and Coping with Career Related Barriers subscales that included only the items regarding ethnic discrimination. This modified version of the Career Related Barrier subscale included 4 items, (e.g., in my future career, I will probably be treated differently because of my ethnic/racial background, have a harder time getting hired than people of other racial/ethnic backgrounds, and experience discrimination because of my racial/ethnic background), that yielded a Cronbach's alpha coefficient of .87 was obtained. This modified version of the Coping with Career Related Barriers subscale included 2 items, (i.e., rate your degree of confidence in overcoming discrimination due to your ethnicity and negative comments about your racial/ethnic background), that yielded a Cronbach's alpha coefficient of .91 was obtained.

Exploratory Analysis with Female Participants (African American and Caucasian) with Modified Career Related Barriers and Coping Efficacy Subscales (Gender Discrimination/Family Commitments).

Career Barriers as Moderator of the Relation of Interests to Choice

Consideration. Hierarchical multiple regression analyses were performed for each of Holland's themes to examine to what extent career related barriers due to gender discrimination moderate the relation of interests to choice goals for only the female participants. Results indicated that the interaction of interest and barriers was not significant for any of the Holland's themes, and therefore, career barriers of gender discrimination and competing family commitments do not moderate the relation of interest to choice consideration for female participants.

Coping Efficacy as Moderator of the Relation of Career Barriers to Choice

Consideration. Hierarchical multiple regression analyses were performed for each of Holland's themes. Results indicated that the interaction of career barriers and coping efficacy was not a significant predictor of choice consideration for any of the themes. Therefore, coping efficacy does not moderate the relation of interest to choice consideration for female participants.

Coping Efficacy as a Mediator of the Relation of Career Barriers to Choice

Consideration. To test the first condition (i.e., career barriers are significantly associated with choice consideration), regressions were run for each of Holland's themes with career barriers as the predictor and choice consideration as the dependent variable. Results indicated that career barriers significantly predicted choice consideration for the Realistic and Investigative themes only. For the Realistic theme, career barriers accounted for 2%

of the variance in choice consideration, ($B = .16$, $p < .05$), $F(1, 222) = 5.28$, $p < .05$, and for the Investigative theme, career barriers accounted for 2% of the variance, ($B = .19$, $p < .05$), $F(1, 222) = 4.76$, $p < .05$. Table 14 summarizes the results.

Table 14

*Summary of Regression Analysis for Coping Efficacy/Choice Consideration Relation
While Controlling for Career Barriers for Female Participants*

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|---|------|---------|---------|-------|--------------|-------|
| Realistic Choice Consideration | | | | | | |
| Career Barriers | .16* | .07 | .15* | .02* | .02* | 5.28* |
| Investigative Choice Consideration | | | | | | |
| Career Barriers | .19* | .09 | .15* | .02* | .02* | 4.76* |

Note. * $p < .05$.

To test the second condition (i.e., career barriers are associated with coping efficacy), a regression was run with career barriers as the predictor and coping efficacy as the dependent variable. However, career barriers was not significantly correlated with coping efficacy $F(1, 223) = .43$, $p > .05$. Therefore, coping efficacy does not mediate the barrier/choice consideration relation, and no further analyses were run.

In sum, for the female participants, results of the exploratory analyses showed that career barriers (gender discrimination and competing family commitments) did not have a moderating effect on the interest/choice consideration relation for any of Holland's career types because the interaction between interest and career barriers was not a significant predictor of choice consideration for any of Holland's themes. Also, coping efficacy did not have a moderating effect on the relation between career barriers and choice consideration because the interaction between coping efficacy and career barriers

was not a significant predictor of choice consideration for any of Holland's themes. Additionally, coping efficacy did not have a mediating effect on the relation between career barriers and choice consideration because career barriers was not significantly correlated with coping efficacy, although career barriers significantly predicted choice consideration for the Realistic and Investigative themes.

Exploratory Analysis with African American Participants (Male and Female) with Modified Career Related Barriers and Coping Efficacy Subscales (Ethnic Discrimination).

Career Barriers as Moderator of the Relation of Interests to Choice

Consideration. Hierarchical multiple regression analyses were performed for each of Holland's themes to examine to what extent career related barriers due to ethnic discrimination moderate the relation of interests to choice goals for only the African American participants. Results indicated that the interaction of interest and career barriers was not significant for the Holland's Realistic, Investigative, Artistic, Social, and Conventional themes. Evidence of a moderating effect was found for the Enterprising theme. In the first step, Enterprising Interest and Career Barriers were entered separately into the equation, $F(2, 191) = 158.82, p < .001$, accounting for 62% of the variance. For Step 2, the interaction between Enterprising Interest and Career Barriers was added to the equation and accounted for a slight but significant increase in variance of Enterprising choice consideration, $(\Delta R^2 = .01, p < .05)$. An examination of the β coefficient revealed that Enterprising Interest ($\beta = .79, p < .001$) significantly predicted Enterprising choice consideration. According to Frazier et al. (2004), in equations that include interaction terms, the β coefficients are not properly standardized and thus are not interpretable.

Therefore, the unstandardized regression coefficient (B) was interpreted for the interaction term instead and revealed that the interaction of interest and career barriers ($B = .02, p < .05$) also significantly predicted Enterprising choice consideration. Figure 4 displays the interaction, and Table 15 summarizes the findings for the significant results.

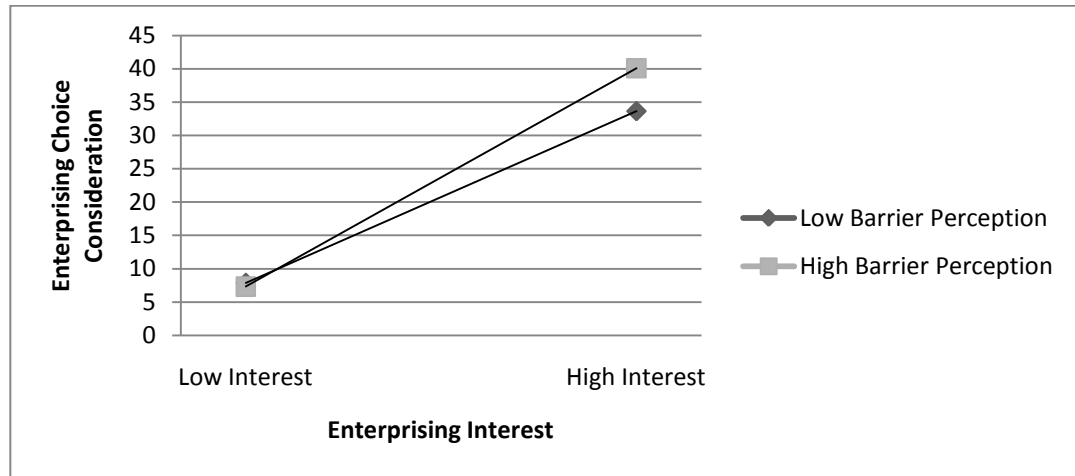


Figure 4. Interaction between Enterprising Interest and Barrier Perception on Enterprising Choice Consideration.

Table 15

Exploratory Hierarchical Regression Analysis for Moderation Effect of Career Barriers on Interests/Choice Consideration Relations for African American Participants

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|---|--------|---------|---------|--------|--------------|-----------|
| Enterprising Choice Consideration | | | | | | |
| Step 1 | | | | .62*** | .62*** | 158.82*** |
| Enterprising Interest | .77*** | .04 | .78*** | | | |
| Perceived Barriers | .32 | .18 | .08 | | | |
| Step 2 | | | | .63*** | .01* | 109.37*** |
| Enterprising Interest | .79*** | .04 | .79*** | | | |
| Perceived Barriers | .32 | .17 | .08 | | | |
| Interaction Between Interest and Barriers | .02* | .01 | .10* | | | |

Note. *** $p < .001$; * $p < .05$

Given that a moderator effect was found for Holland's Enterprising themes, post hoc probes were conducted to determine how career barriers affect the relationship between interests and choice considerations in this area. For these analyses, new conditional moderator variables were computed based on high (1 SD above the mean) and low (1 SD below the mean) levels of career barrier perception. Examination of the simple slopes show that with high ($\beta = .89$, $p < .001$) and low ($\beta = .70$, $p < .001$) levels of career barrier perception, Enterprising Interest has a significant effect on choice consideration. Specifically, when career barrier perception is high and when it is low, Enterprising interest is positively related to Enterprising choice consideration. However, the correlation is slightly stronger for the group that perceives high levels of barriers than for the group that perceived lower levels of barriers. Table 16 shows results.

Table 16

Post Hoc Analysis for Moderation Effect of Career Barriers on Interests/Choice

Consideration Relations for African American Participants

| Variable | B | SE B | β | R^2 | F |
|--|--------|---------|---------|--------|-----------|
| Enterprising Choice Consideration | | | | | |
| Step 1 | | | | .63*** | 109.37*** |
| Enterprising Interest | .88*** | .07 | .89*** | | |
| Perceived Barriers (HIGH) | .32 | .17 | .08 | | |
| Interaction Between Interest and Barriers (HIGH) | .02* | .01 | .14* | | |
| Enterprising Choice Consideration | | | | | |
| Step 1 | | | | .63*** | 109.37*** |
| Enterprising Interest | .69*** | .06 | .70*** | | |
| Perceived Barriers (LOW) | .32 | .17 | .08 | | |
| Interaction Between Interest and Barriers (LOW) | .02* | .01 | .12* | | |

Note. *** $p < .001$; * $p < .05$.

Coping Efficacy as a Moderator of the Relation of Career Barrier to Choice

Consideration. Hierarchical multiple regression analyses were performed for each of Holland's themes. Results indicated that the interaction of career barriers and coping efficacy was not a significant predictor of choice consideration for the Realistic, Investigative, Artistic, Enterprising, and Conventional themes. For the Holland's Social theme regression, in the first step, Coping Efficacy and Career Barriers were entered into the equation, $F(2, 192) = .88, p > .05$, accounting for no significant amount of the variance. For Step 2, the interaction between Coping Efficacy and Career Barriers was added to the equation, and this accounted for a slight but significant increase in variance for Social choice consideration, $(\Delta R^2 = .03, p < .05)$, $F(3, 191) = 2.65, p \leq .05$. Therefore, coping efficacy was found to moderate the relation between Career Barriers and Social choice consideration. Figure 5 displays the interaction, and Table 17 summarizes the findings for the significant results.

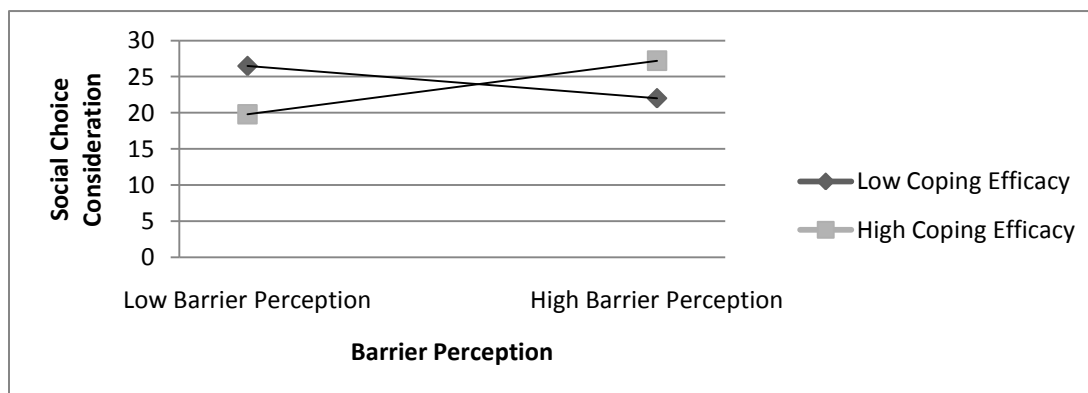


Figure 5. Interaction between Social Interest and Career Barrier Perception on Social Choice Consideration.

Table 17

Exploratory Hierarchical Regression Analysis for Moderation Effect of Coping Efficacy on the Relation of Career Barrier to Social Choice Consideration for African American Participants

| Variable | B | SE B | β | R ² | ΔR^2 | F |
|--|------|------|---------|----------------|--------------|-------|
| Social Choice Consideration | | | | | | |
| Step 1 | | | | .01 | .01 | .88 |
| Career Barriers | .20 | .27 | .06 | | | |
| Coping Efficacy | -.59 | .50 | -.09 | | | |
| Step 2 | | | | .04* | .03* | 2.65* |
| Career Barriers | .16 | .26 | .04 | | | |
| Coping Efficacy | -.15 | .52 | -.02 | | | |
| Interaction Between Barriers and Coping Efficacy | .26* | .01 | .19* | | | |

Note. * $p \leq .05$.

Given that a moderator effect was found for Holland's Social theme, post hoc probes were conducted to determine how coping efficacy affects the relationship between career barriers and choice considerations in the Social area. For this analysis, new conditional moderator variables were computed based on high (1 SD above the mean) and low (1 SD below the mean) levels of coping efficacy. Examination of the simple slopes show that with high ($\beta = .22$, $p < .05$), but not low ($\beta = -.13$, $p > .05$) levels of coping efficacy, career barriers have a significant effect on Social choice consideration. Specifically, as career barriers increase, there is an increase in Social Choice Consideration. This occurs when coping efficacy is high but not when coping efficacy is low. Table 18 shows results.

Table 18

Post Hoc Analysis for Moderation Effect of Coping Efficacy on Career Barrier/ Social Choice Consideration Relation

| Variable | B | SE B | β | R^2 | F |
|---|------|---------|---------|-------|-------|
| Social Choice Consideration | | | | | |
| Step 1 | | | | .04* | 2.65* |
| Perceived Barriers | .80* | .36 | .22* | | |
| Coping Efficacy (HIGH) | -.15 | .52 | -.02 | | |
| Interaction Between Coping Efficacy and Barriers (HIGH) | .26* | .10 | .25* | | |
| Social Choice Consideration | | | | | |
| Step 1 | | | | .04* | 2.65* |
| Perceived Barriers | -.48 | .38 | -.13 | | |
| Coping Efficacy (LOW) | -.15 | .52 | -.02 | | |
| Interaction Between Coping Efficacy and Barriers (LOW) | .26* | .10 | .26* | | |

Note. * $p < .05$.

Coping Efficacy as a Mediator of the Relation of the Career Barriers to Choice Consideration. To test the first condition (i.e., career barriers are significantly associated with choice consideration), regressions were run for each of Holland's themes with career barriers as the predictor and choice consideration as the dependent variable. Results indicated that career barriers significantly predicted choice consideration for the Realistic, Investigative, and Enterprising themes only. For the Realistic theme, career barriers accounted for 3% of the variance in choice consideration, ($\beta = .16$, $p < .05$), $F(1, 194) = 4.99$, $p < .05$, and for the Investigative theme, career barriers accounted for 2% of the variance, ($\beta = .15$, $p < .05$), $F(1, 195) = 4.72$, $p < .05$. For the Enterprising theme, career barriers accounted for 2% of the variance, ($\beta = .15$, $p < .05$), $F(1, 193) = 4.38$, $p < .05$. Table 19 summarizes the results.

Table 19

Summary of Regression Analysis for Career Barrier/Choice Consideration Relations for African American Participants

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|---|------|------|---------|-------|--------------|-------|
| Realistic Choice Consideration | | | | | | |
| Perceived Barriers | .49* | .22 | .16* | .03* | .03* | 4.99* |
| Investigative Choice Consideration | | | | | | |
| Perceived Barriers | .45* | .21 | .15* | .02* | .02* | 4.72* |
| Enterprising Choice Consideration | | | | | | |
| Perceived Barriers | .59* | .28 | .15* | .02* | .02* | 4.38* |

Note. * $p < .05$.

To test the second condition (i.e., career barriers are associated with coping efficacy), a regression was run with career barriers as the predictor and coping efficacy as the dependent variable. Career barriers accounted for 2% of the variance of coping efficacy, ($\beta = .15$, $p < .05$), $F(1, 196) = 4.22$, $p < .05$. Table 20 summarizes the results.

Table 20

Summary of Regression Analysis for Coping Efficacy/Barrier Relation for African American Participants

| Variable | B | SE B | β | R^2 | ΔR^2 | F |
|------------------------|------|------|---------|-------|--------------|-------|
| Coping Efficacy | | | | | | |
| Perceived Barriers | .08* | .04 | .15* | .02* | .02* | 4.22* |

Note. * $p < .05$.

To test the third condition (i.e., coping efficacy is significantly associated with choice consideration after controlling for career barriers), a regression was run with career barriers and coping efficacy simultaneously entered as the predictor variables and

choice consideration as the dependent variable for the three areas which were found to be significant in the first condition (i.e. Realistic, Investigative, and Enterprising). However, results indicated that coping efficacy did not significantly predict choice consideration after controlling for career barriers for any of the themes, and therefore, no further analyses were conducted. Hence, no evidence of mediation was found.

In sum, for the African American participants, results of the exploratory analyses showed that career barriers (ethnic discrimination) have a moderator effect on the relation of interests to choice consideration for only the Enterprising theme because the interaction of interest and career barriers significantly predicted choice consideration for only that theme. Post hoc probes indicated that with high (1 SD above the mean) and low (1 SD below the mean) levels of career barrier perception, Enterprising Interest has a significant effect on choice consideration. Also, coping efficacy was found to moderate the relation between career barriers and choice consideration for only the Social theme. Post hoc probes indicated that with high (1 SD above the mean) but not low (1 SD below the mean) levels of coping efficacy, career barriers have a significant effect on Social choice consideration. However, coping efficacy did not have a mediating effect on the relation between career barriers and choice consideration. Results indicated that career barriers significantly predicted coping efficacy and choice consideration for Realistic, Investigative, and Enterprising themes. However, results indicated that coping efficacy was not significantly predictive of choice consideration after controlling for career barriers for any of those themes.

Chapter V

Discussion

The purpose of this study was to examine the relation among several variables that according Social Cognitive Career Theory predict career goals. More specifically, the purpose of the study was to examine (a) to what extent coping efficacy moderated or mediated the relation of career barriers to career goals, and (b) to what extent career barriers moderated the relation of career interests to career goals.

According to the SCCT, proximal, contextual barriers relate to choice goals directly by hindering pursuit of certain career considerations, yet only a few studies have found support for such a correlation (Flores & O'Brien, 2002; Lent et.al, 2005; Rivera, et al., 2007). Instead, several studies have found that the relation of career barriers to goals is indirect and that it is mediated by various types of self-efficacy (i.e., academic self-efficacy, coping efficacy, task-specific self-efficacy, and career self-efficacy) (Lent, et. al, 2001; 2005; Lent, Brown, Schmidt, et al., 2003; Smith, 2001; and Lent, Brown, Nota, et al., 2003). This has led some researchers to wonder if SCCT needs modification (Lent, Brown, Nota, et al., 2003; Lent et al., 2001).

The present study examined the mediating effect of coping efficacy on the relation of contextual educational barriers (such as financial concerns, family disapproval, and relationship issues) to career choice consideration across Holland's types. For the overall sample, educational barriers were negatively related to coping efficacy and positively related to choice consideration in the Artistic, Social, and Conventional themes. However, findings revealed that there was not a significant relation between coping efficacy and choice consideration for any of the Holland's themes, thus

coping efficacy did not mediate the educational barrier/goal relation. Other studies have found evidence that coping efficacy mediates the relation of math and science related barriers (Lent et al., 2001), social barriers (Lent et al., 2003, 2005), and generalized barriers (Byars-Winston & Fouad, 2008) to career goals. However, in each of these studies coping efficacy and career goals were limited to the areas of math, science, and engineering. The current study included a much broader spectrum of career goals. Additionally, in the studies that found evidence of a mediated path between barriers and goals, a stronger mediated path linked coping efficacy to goals through academic self-efficacy (i.e., confidence in one's ability to perform math, science, and engineering tasks), outcome expectations (i.e. personal beliefs about probable outcomes), and social supports. These variables were not included in the present study.

Findings in the present study, indicated that there were significant direct relations between educational barriers and choice consideration within Holland's Artistic, Social, and Conventional themes. This is consistent with the predications of the SCCT. However, previous research examining the direct relation between barriers and goals is mixed. Two studies with Hispanic females have found that as perception of barriers increase, participants were more likely to choose lower prestige (Flores & O'Brien, 2002) and female-dominated careers (Rivera, et al., 2007). Lent et al. (2005) also found a negative correlation between social barriers and major choice goals in engineering. Other studies have failed to find a link between gender and ethnic discrimination barriers and career choice traditionality (Flores & O'Brien, 2002), between generalized measures of career barriers and consideration of male dominated careers (Rivera, et al., 2007), between social barriers and Holland's type of careers considered (Lent, Brown, Nota, et al., 2003),

and between barriers specifically related to math/science major choices and course enrollment intentions (Lent et al., 2001).

A recently published meta analysis (Sheu, Lent, Brown, Miller, Hennessy, & Duffy, 2010) examining the choice model of social cognitive career theory across Holland's themes found that Lent et al. (2003) conducted the only study from 1981 to 2008 which examined the relationship between career barriers and choice goals for the Artistic, Social, and Conventional themes. Most other studies focused on STEM fields that are represented by the Realistic, Investigative, and Enterprising codes. Lent et al. (2003) did not find a link between barriers and choice considerations for choice of careers in any of the Holland's themes. However, the participants in Lent et al. (2003) study were high school students in Italy whereas the current study included a sample of community college students in the United States. Besides cultural differences that may exist between American and Italian students, Lent et al. (2003) pointed out that barriers may not be as immediately significant for high school students as they may be for college students and working adults. Furthermore, barriers may be especially salient for community college students who, compared to students at four year colleges are more likely to be of lower socioeconomic status (i.e., household income and parents' educational level), to have competing commitments of employment and childcare responsibilities and to be single with a dependent (Bailey, 2000).

Interestingly, the link between educational barriers and choice consideration was positive, suggesting that as the perception of barriers increases career consideration becomes stronger for Artistic, Conventional, and Social career fields. It is possible that students who perceive high levels of educational barriers are likely to chose career goals

in the Social, Artistic, and Conventional domains because the college majors that lead to careers in these fields are perceived as less academically demanding. Furthermore, the perception of educational barriers are not as strongly related to career goals in the Investigative, Realistic, and Enterprising domains because the students who choose these areas tend to perceive themselves as having the educational resources to pursue them. In fact, Felder, Felder, and Dietz (1998) found that students entering college with a major in the engineering fields which are often coded within the Realistic, Investigative, and Enterprising themes often perform better academically in high school than other students.

A second possible explanation for the positive link between educational barriers and choice consideration for Social, Artistic, and Conventional careers could lie in the way a person views barriers. According to SCCT, “supports, opportunities, and barriers-like beauty- lie at least partly in the eye of the beholder” (Lent et al., 1994, p. 106). While some might consider financial constraints and social discouragement as insurmountable obstacles, others may perceive them as motivational challenges. Creed, Patton, and Bartrum (2004) found that engagement in career planning and exploration in male and female high school students increased with the increase in external barrier perception (e.g., finances, mobility, job training availability, etc.).

Because the majority of studies have failed to find a direct link between barriers and choice considerations (Sheu et al., 2010), Lent et al. (2000) proposed that coping efficacy may moderate the barrier/goal relation. They suggested that when coping efficacy is high, the association between barriers and goals will be small or nonexistent, but when coping efficacy is weak, the barrier/goal correlation will be stronger. However, in the present study coping efficacy did not moderate the educational barrier/goal

relation among any of the Holland's themes. Instead, as previously mentioned, there was a direct link between educational barriers and choice consideration in the Artistic, Social, and Conventional themes independent of coping efficacy. These findings suggest that students believed that educational barriers would affect their career choices regardless of their beliefs in their ability to cope with them .

Additionally, coping efficacy for the sample was high overall. The median score for the Coping with Educational Barriers subscale is 22, and the mean score for the participants was 44.72 with a standard deviation of 9.67. Low levels of coping efficacy were defined as 1 standard deviation below the mean which would still be well above the median scale score. Additional research is needed to determine if coping efficacy moderates the link between barriers and goals in populations that express a wider range of coping efficacy especially at the lower end.

Findings also revealed that educational barriers did not moderate the interest/goal relation. This is contradictory to the findings of Lent et al. (2001) who found that math and science interest was more strongly related to math/science goals for college students who perceived low levels of barriers (e.g., negative social or family influences and financial constraints) as opposed to students who perceived higher levels of barriers. However, the participants for Lent et al.'s (2001) study reported relatively high levels of interest in math and science. The current study examined interest and goals for a much broader spectrum of career fields, yet interests and choice consideration was relatively low in all areas. For example, for each theme, the median score on both the interest and the choice consideration assessment is 31.5. The highest mean score for interest was 24.44 (Artistic), and the highest mean score for choice consideration was 20.57 (Social).

Lent et al. (2001) suggested that barriers may not be as significant to the choice process in areas where interests and goals are low.

Exploratory Analyses

Because the primary analyses offered very few of the expected findings , exploratory analyses were conducted with career barriers and coping efficacy that are specifically relevant for certain groups. Studies have found that university and high school female students (Luzzo & McWhirter, 2001; McWhirter, 1997; Smith, 2001) and ethnic minority students (Luzzo & McWhirter, 2001; McWhirter, 1997; Quimby, Seyala, & Wolfson, 2007) report experiencing more career related barriers than their male and Caucasian peers, respectively. Ethnic minorities have also been found to report lower coping efficacy for dealing with these barriers (Luzzo & McWhirter, 2001). In the present study, no differences were found between male and female participants for levels of educational barrier perception or coping efficacy. However, African American participants did report higher levels of educational barrier perception and lower levels of coping efficacy than the Caucasian participants.

Because of these possible gender and ethnic differences, exploratory analyses were performed to examine to what extent gender and ethnic discrimination related barriers were associated to career choice goals among women and African American students. For these analyses, the Career Related Barrier subscale of the POB was used as a measure of career barriers. This subscale limits barriers to gender and ethnic discrimination and competing family responsibility. Scores of the unmodified version of this subscale were only analyzed for the African American female participants because

they were the students most likely to experience both the gender and ethnic discrimination barriers.

For the African American female participants, neither coping efficacy nor career barriers were significantly correlated with choice consideration for any of the Holland's themes. Therefore, coping efficacy did not have a mediating effect on the career barrier/goal relation. Findings also revealed that coping efficacy did not moderate the relation of career barriers to goals, and career barriers did not moderate the relation of interests to goals. As with the overall sample, a mediated route from career barriers to choice goals may include additional variables such as contextual supports, outcome expectations, and other domain specific types of self-efficacy which were not included in this study. Additionally, the African American females in the study reported low levels of interests and choice consideration for all of the themes. For example, for each theme, the median score on both the interest and the choice consideration assessment is 31.5. The highest mean score for interest was 28.52 (Social), and the highest mean score for choice consideration was 26.43 (Social). The low variability in choice goals scores may account for the lack of correlation between career barriers and the choice process variables (i.e., choice goals, coping efficacy).

The Career Related Barrier subscale was also modified to create two new subscales. One assessed ethnic discrimination barriers only and the other assessed gender discrimination barriers and competing family responsibility. Analyses with the ethnic discrimination barriers subscale were conducted only for the African American participants (both male and female). No evidence was found for a mediating effect of coping efficacy on the career ethnic discrimination barrier/goal relation. However,

coping efficacy moderated the relation of career ethnic discrimination barriers to choice goals only for the Social theme. In this case, when coping efficacy was high, there was a slight positive correlation between career barriers and Social consideration. However, there was not a significant correlation between career barriers and Social consideration when coping efficacy was low. Perhaps some students feel that they will be less likely to encounter ethnic discrimination in careers that are in the Social domain.

Nevertheless, it is curious that the positive correlation exists between career ethnic discrimination barriers and Social consideration when coping efficacy is high but not when it is low. It should be noted that “low” was defined as 1 standard deviation below the mean. However, the coping efficacy levels for this sample were quite high. One standard deviation below the mean was slightly above the median score for the scale, thus scores grouped into the “low” group were not truly low but rather average.

Also, career ethnic discrimination barriers moderated the relation of interests to goals only for the Enterprising theme. The relation of interests to goals in the Enterprising field was positive and statistically significant at both low and high levels of barriers. However, the relation was stronger among students who reported higher levels of barriers compared to students who reported lower levels of barriers. In other words, as career ethnic discrimination barrier perceptions increased, so did career consideration for the Enterprising themes. One possible explanation may lie in the personality type of individuals who are characterized as Enterprising. Campbell and Holland (1972) described people with Enterprising personality types as orally aggressive, concerned with power, and having skills for dominating and leading. Perhaps individuals with this type of personality see barriers as challenges rather than obstacles. As previously mentioned,

researchers have found positive relationships between career barriers and career planning and exploration (Creed, Patton, & Bartrum, 2004) and outcome expectations (Lindley, 2005).

Finally, analyses with the subscale that included only gender discrimination/competing family responsibility items were conducted only with the female participants (African American and Caucasian). Results showed that coping efficacy did not moderate or mediate the gender discrimination/competing family responsibility barrier/goal relation for any of the Holland themes. Similarly, gender discrimination/competing family responsibility barriers did not moderate the relation of interests to goals relation among the female college students. Again the lack of findings may be attributable to the low levels of interests and choice consideration across Holland's themes.

Limitations

In order to maximize sample size, the primary analysis included both men and women and both African Americans and Caucasians. However, intergroup differences are overlooked with this approach. When the exploratory analyses were conducted, samples were based on gender and ethnicity, but this resulted in decreased sample sizes, which increased the likelihood of a Type I error (Gall, Gall, & Borg, 2003). Additional research should be conducted with larger sample sizes that examine particular ethnic groups/gender. Furthermore, similar research is needed with Hispanics, Native Americans, and Asians participants as they were not included in this study.

Another limitation of the study was that the participants tended to report high levels of coping efficacy. For example, the mean score of 44.72 for coping efficacy for

the overall sample was well above the scale's midpoint of 33. Additionally, the participants in the overall sample tended to have a rather low perception of educational barriers. The mean score of 24.34 was well below the scale's midpoint of 33. Correlations between variables may be different in populations with lower levels of coping efficacy and higher levels of barrier perception.

A third limitation of this study was the measures of barriers and coping efficacy. The SCCT distinguishes between barriers that are intrapersonal versus contextual, generalized versus task-specific, and distal versus proximal (Lent, Brown, Hackett, 2000). The current study focused on proximal, contextual career/educational barriers. However, the more widely used measures of barriers, (e.g., Career Barrier Inventory and the Perception of Barriers Scale) often include both internal and external barriers which are generalized rather than specific. In order to examine only the contextual barriers, the Perception of Barriers Scale had to be modified by excluding internal barriers. Cronbach's alpha revealed adequate scale reliability. However, measures that are specifically designed to assess contextual barriers are needed.

A fourth limitation of the study was the low levels of interests and career consideration expressed by the participants. Lent et al. (2001) surmise that barriers may not be as important to the choice process in areas where interests and goals are low. The scores of individuals with low interest in a particular theme may have canceled out the higher scores of other participants. Therefore, research should focus on groups of individuals who already have expressed interests in various areas.

Future Research

According to the SCCT, interests give rise to goals and goals give rise to actions. Barriers are hypothesized to also moderate the relation between goals and actions and to directly affect actions. Longitudinal research is needed to examine how barriers fit into this aspect of the theory. It is possible that barriers exert a greater influence on career choice behavior the further along in the process one gets (Lent, Brown, Nota, et al., 2003). Additionally, research should examine the role of contextual supports. Contextual supports are also hypothesized to moderate the interest/goal and goal/action link and to directly affect goals and actions.

In this study, the assessment of educational barriers for the primary analysis was very general while the assessment of career related barriers for the exploratory analyses were limited to gender and ethnic discrimination and family responsibility. Future research should continue to examine more specifically additional types of barriers, such as financial constraints and social discouragement, and the relationship of coping efficacy to those types of barriers. Future research could also explore additional ways in which coping efficacy affects career behavior.

Because the appraisal of contextual influences can vary by person and situation, future research should also investigate the phenomenological aspects of environmental factors. Lent, Brown, and Hackett (2000) point out that these factors can be viewed as minor obstacles, insurmountable barriers, character building opportunities, or personal challenges and that it is the appraisal that prompts various reactions (e.g., rejection or pursuit of a choice). Lent et al (2000) point out that qualitative and traditional methods could be used to explore the bases for these differing views.

Additionally, research should focus on the interaction between contextual barriers and supports in the Social, Artistic, and Conventional areas. Previous research has mostly been directed to the Realistic, Enterprising, and Investigative themes because these tend to encompass the higher paying, higher prestige jobs. However, understanding why people choose careers in the Social, Artistic, and Conventional careers could shed light on why they do not choose Realistic, Enterprising, and Investigative careers.

Implication

Several studies have found a negative relation between coping efficacy and environmental barriers (Lent et al., 2001; 2003, 2005), and the results of the present study are consistent with those findings. It appears that greater levels of coping efficacy are associated with the perception of fewer barriers. Therefore, interventions for increasing coping efficacy may be helpful. Also, results revealed a direct, positive relation between barriers and goals in some areas, (i.e., Artistic, Social, and Conventional). This suggests that while coping efficacy enhancing components to career counseling may be effective, other interventions should be included. For example, techniques aimed at reframing barriers as challenges rather than obstacles may motivate some clients.

Counselors may also encourage clients to develop mentoring relationships with professionals who have overcome similar barriers, such as discrimination and competing family commitments. These mentors could serve as models who provide opportunities for vicarious learning as well as verbal persuasion (e.g., encouragement) for overcoming barriers. Albert and Luzzo (1999) suggest that counselors establish a database of professionals in various career fields who would be willing to serve as mentors.

Finally, some obstacles to career development, such as gender and ethnic discrimination, are the result of sociopolitical and cultural environments and institutional racism. Counselors may want to consider political activism as a way of eliminating these barriers.

References

- AAUW Educational Foundation (2007). *Behind the gap*. Washington, DC.
- Albert, K. A., & Luzzo, D. A. (1999). The role of perceived barriers in career development: A social cognitive perspective. *Journal of Counseling & Development, 77*, 431-436.
- Allen, J., & Robbins, S. B. (2008). Prediction of college major persistence based on vocational interests, academic preparation, and first-year academic performance. *Research in Higher Education, 49*, 62-79.
- Alliman-Brissett, A. E., Turner, S. L., & Skovholt, T. M. (2004). Parental support and African American adolescents' career self-efficacy. *Professional School Counseling, 7*, 124-132.
- Bailey, T., & Weininger, E. (2000). *Performance, graduation, and transfer of immigrants and natives in City University of New York community colleges*. New York: Columbia University Community College Research Center.
- Bailey, T., Leinbach, T., Scott, M., Alfonso, M., Kienzl, G., & Kennedy, B. (2003). *The characteristics of occupational sub-baccalaureate students entering the new millennium*. (U. S. Department of Education Contract No. ED-00-CO-0023). Washington, DC: U. S. Department of Education.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bowen, H. R. (1997). *Investment in learning: The individual and social value of American higher education*. Baltimore: Johns Hopkins University Press.
- Brown, C., Reedy, D., Fountain, J., Johnson, A., & Dichiser, T. (2000). Battered

- women's career decision-making self-efficacy: Further insights and contributing factors. *Journal of Career Assessment*, 8, 251-265.
- Burlew, A. K., & Johnson, J. L. (1992). Role conflict and career advancement among African American women in nontraditional professions. *Career Development Quarterly*, 40, 302- 312.
- Byars-Winston, A. M. (2006). Racial ideology in predicting social cognitive career variables for Black undergraduates. *Journal of Vocational Behavior*, 69, 134-148.
- Byars-Winston, A. M., & Fouad, N. A. (2008). Math and science social cognitive variables in college students: Contributions of contextual factors in predicting goals. *Journal of Career Assessment*, 16, 425- 440.
- Byars-Winston, A. M., & Fouad, N. A. (2010). Math and science social cognitive variables in college students: Contributions of contextual factors in predicting goals, *Journal of Career Assessment*, 18, 425-440.
- Campbell, D. P., & Holland, J. L. (1972). A merger in vocational interest research: Applying Holland's theory to Strong's data. *Journal of Vocational Behavior*, 2, 353-376.
- Creed, P. A., Patton, W., & Bartrum, D. (2004). Internal and external barriers, cognitive style, and the career development variables of focus and indecision. *Journal of Career Development*, 30, 277- 294.
- Dawis, R.V. & Lofquist, L. H. (1984). *A psychological theory of work adjustment: An individual differences model and its applications*. Minneapolis: University of Minnesota Press.
- Diegelman, N. M., & Subich, L. M. (2001). Academic and vocational interests as a

- function of outcome expectancies in social cognitive career theory. *Journal of Vocational Behavior*, 59, 394-405.
- Felder, R. M., Felder G. N., & Dietz, E. J. (1998). A longitudinal study of engineering student performance and retention: V. Comparisons with traditionally taught students. *Journal of Engineering Education*, 87, 469- 480.
- Ferry, T. R., Fouad, N. A., & Smith, P. L. (2000). The role of family context in a social cognitive model for career-related choice behavior: A math and science perspective. *Journal of Vocational Behavior*, 57, 348-364.
- Flores, L. Y., & O'Brien, K. M. (2002). The career development of Mexican American adolescent women: A test of social cognitive career theory. *Journal of Counseling Psychology*, 49, 14-27.
- Frazier, P. A., Tix, A. P., & Barron, K. E. (2004). Testing Moderator and Mediator Effects in Counseling Psychology Research. *Journal of Counseling Psychology* 51 (1), 115-134.
- Gainor, K. A., & Lent, R. W. (1998). Social cognitive expectations and racial identity attitudes in predicting the math choice intentions and Black college students. *Journal of Counseling Psychology*, 45, 403-413.
- Gore, P. A., & Leuwerke, W.C. (2000). Predicting occupational consideration: A comparison of self-efficacy beliefs, outcome expectations, and person-environment congruence. *Journal of Career Assessment*, 8, 237-250.
- Hackett, G., & Betz, N.E. (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior*, 18, 326-336.
- Holland, J. L. (1985). *Making vocational choices: A theory of vocational personalities and work environments* (2nd ed.) Englewood Cliffs, NJ: Prentice-Hall.

- Holmbeck, G., (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology*, 65(4), 599-610.
- Holmbeck, G. N., (2002). Post-hoc probing of significant moderational and mediational effects in studies of pediatric populations. *Journal of Pediatric Psychology*, *Special Issue on Methodology and Design* 27(1), 87-96.
- Krumboltz, J. D., Mitchell, A.M., & Jones, G. B. (1976). A social learning theory of career selection. *The Counseling Psychologist*, 6, 71-81.
- Lease, S. H. (2006). Factors predictive of the range of occupations considered by African American juniors and seniors in high school. *Journal of Career Development*, 32, 333-350.
- Lent, R. W., & Brown, S. D. (1996). Social cognitive approach to career development: An overview. *Career Development Quarterly*, 44, 310-321.
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 45, 79-122.
- Lent, R. W., Brown, S. D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of Counseling Psychology*, 47, 36-49.
- Lent, R. W., Brown, S. D., Brenner, B., Chopra, S. B., Davis, T., Talleyrand, R., et al.

- (2001). The role of contextual supports and barriers in the choice of math/science educational options: A test of social cognitive hypotheses. *Journal of Counseling Psychology, 48*, 474-483.
- Lent, R. W., Brown, S. D., Nota, L., & Soresi, S. (2003). Testing social cognitive interest and choice hypotheses across Holland types in Italian high school students. *Journal of Vocational Behavior, 62*, 101-118.
- Lent, R. W., Brown, S. D., Schmidt, J., Brenner, B., Lyons, H., & Treistman, D. (2003). Relation of contextual supports and barriers to choice behavior in engineering majors: Test of alternative social cognitive models. *Journal of Counseling Psychology, 50*, 458-465.
- Lent, R. W., Brown, S. D., Sheu, H-B., Schmidt, J., Brenner, B. R., Gloster, C. S., et al. (2005). Social cognitive predictors of academic interests and goals in engineering: Utility for women and students at historically Black universities. *Journal of Counseling Psychology, 52*, 84-92.
- Lindley, L. D. (2005). Perceived barriers to career development in the context of social cognitive career theory. *Journal of Career Assessment, 13*, 271- 287.
- Luzzo, D. A., & McWhirter, E. H. (2001). Sex and ethnic differences in the perception of educational and career-related barriers and levels of coping efficacy. *Journal of Counseling & Development, 79*, 61-67.
- McWhirter, E. H. (1997). Perceived barriers to education and career: ethnic and gender differences. *Journal of Vocational Behavior, 50*, 124-140.
- McWhirter, E. H., Torres, D., & Rasheed, S. (1998). Assessing barriers to women's career adjustment. *Journal of Career Assessment, 6*, 449-479.

- National Committee on Pay Equity. (2007). *The wage gap, by gender and race*. Washington, DC. Retrieved July 2, 2010, from www.pay-equity.org.
- National Committee on Pay Equity. (2008). *Women's earnings as a percentage of men's, 1951-2008*. Retrieved July 2, 2010, from www.pay-equity.org.
- National Science Foundation, Division of Science Resources Studies (NSF/SRS). (2003). Women, minorities, and persons with disabilities in science and engineering: 2002 (NSF Rep. No. 03-312). Arlington, VA: Author.
- National Science Foundation (2004). The role of community colleges in the education of recent science and engineering graduates. (NSF 04-315). Arlington, VA: Author.
- Nauta, M. M., & Epperson, D. L. (2003). A longitudinal examination of the social-cognitive model applied to high school girls' choices of nontraditional college majors and aspirations. *Journal of Counseling Psychology, 50*, 448-457.
- NCES (National Center for Education Statistics). 2001. *Bridging the Gap: Academic Preparation and Postsecondary Success of First-Generation Students*. NCES 2001153. Edward C. Warburton, Rosio Bugarin, and Anne-Marie Nuñez. Project Officer: C. Dennis Carroll. Washington, DC: U.S. Department of Education.
- Özyüek, R. (2005). Informative sources of math-related self-efficacy expectations and their relationship with math-related self-efficacy, interest, and preference. *International Journal of Psychology, 40*, 145-156.
- Perrone, K. M., Civiletto, C. L., Webb, L. K., & Fitch, J. C. (2004). Perceived barriers to and supports of the attainment of career and family goals among academically talented individuals. *International Journal of Stress Management, 11*, 114-131.
- Quimby, J. L., & O'Brien, K. M. (2004). Predictors of student and career decision-

- making self-efficacy among nontraditional college women. *The Career Development Quarterly*, 52, 323-339.
- Quimby, J. L., Seyala, N. D., & Wolfson, J. L. (2007). Social cognitive predictors of interest in environmental science: Recommendations for environmental educators. *Journal of Environmental Education*, 38, 43-52.
- Rivera, L. M., Blumberg, F., Chen, E. C., Ponterotto, J. G., & Flores, L. Y. (2007). The effects of perceived barriers, role models, and acculturation on the career self-efficacy and career consideration of Hispanic women. *The Career Development Quarterly*, 56, 47-61.
- Schaefer, K. G., Epperson, D. L., & Nauta, M. M. (1997). Women's career development: Can theoretically derived variables predict persistence in engineering majors? *Journal of Counseling Psychology*, 44, 173-183.
- Sheu, H. B., Lent, L. W., Brown, S. D., Miller, M. J., Hennessy, K. D., & Duffy, R. D. (2010). Testing the choice model of social cognitive career theory across Holland themes: A meta-analytic path analysis. *Journal of Vocational Behavior*, 76, 252-264.
- Smith, S. M. (2001). A social cognitive approach to the career development of undergraduate students. *Delta Pi Epsilon Journal*, 43, 200-214.
- Smith-Weber, S. M. (1999). Career self-efficacy among African-American female adolescents. *Delta Pi Epsilon Journal*, 41, 141-157.
- Super, D.E. (1990). A life-span, life-space approach to career development. In D. Brown, L. Brooks, & Associates, *Career choice and development* (pp. 197-261). San Francisco: Jossey-Bass.

- Swanson, J. L., Daniels, K. K., & Tokar, D. M. (1996). Assessing perceptions of career-related barriers: The Career Barriers Inventory. *Journal of Career Assessment*, 4, 219-244.
- Tang, M., Fouad, N. A., & Smith, P. L. (1999). Asian Americans' career choices: A path model to examine factors influencing their career choices. *Journal of Vocational Behavior*, 54, 142-157.
- Tracey, T. J., & Robbins, S. B. (2006). The interest-major congruence and college success relation: A longitudinal study. *Journal of Vocational Behavior*, 69, 64-89.
- Turner, S. L., Steward, J. C., & Lapan, R. T. (2004). Family factors associated with sixth-grade adolescents' math and science career interests. *The Career Development Quarterly*, 53, 41-52.
- U. S. Census Bureau (2007). *Current population survey*. Allegany County, N.Y.
Retrieved July 2, 2010, from <http://quickfacts.census.gov>.
- Waller, B. (2006). Math interest and choice intentions of non-traditional African-American college students. *Journal of Vocational Behavior*, 68, 538-547.

APPENDIX A

INTERESTS

Interests

Instructions: Please indicate your degree of interest in each of the following occupations. That is, how much do you think you would like or dislike the work activities that people in each of these occupations perform. Use the 0-9 scale, below, to show your degree of interest in each occupation.

| Occupation | How much would you like the work activities performed by a(n): | | | | | | | | | |
|-------------------------------|--|---|---|---|---|---|---|---|---|---------------|
| | Strongly Dislike | | | | | | | | | Strongly Like |
| Firefighter | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Auto Mechanic | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Carpenter | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Fish and Wildlife Specialist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Truck Driver | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Bus Driver | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Electrician | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Biologist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Astronomer | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Anthropologist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Chemist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Writer of Scientific Articles | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Geologist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Scientific Research Worker | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Poet | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Musician | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Novelist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Actor/Actress | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Journalist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Artist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Singer | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Sociologist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| High School Teacher | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Juvenile Delinquency Expert | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Marriage Counselor | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Social Science Teacher | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Youth Camp Director | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Social Worker | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Advertising Executive | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Manufacturer's Representative | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Business Executive | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Restaurant Manager | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Sales Person | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Real Estate Salesperson | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Sales Manager | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Business Teacher | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Accountant | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Credit Investigator | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Bank Teller | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Tax Expert | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Financial Analyst | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Payroll Clerk | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

APPENDIX B

CHOICE CONSIDERATION

Occupational Considerations

Instructions: For each occupation listed below, please indicate how seriously you would consider it as a possible career for yourself. Use the 0-9 scale, below, to show how seriously you would consider each occupation.

| How seriously would you consider becoming a(n): | | | | | | | | | | |
|---|-----------------------|---|---|---|---|---|---|---|---|-------------------|
| Occupation | Not Very Seriously | | | | | | | | | Very Seriously |
| Firefighter | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Auto Mechanic | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Carpenter | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Fish and Wildlife Specialist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Truck Driver | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Bus Driver | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Electrician | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Biologist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Astronomer | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Anthropologist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Chemist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Writer of Scientific Articles | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Geologist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Scientific Research Worker | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Poet | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Musician | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Novelist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Actor/Actress | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Journalist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Artist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Singer | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Sociologist | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| High School Teacher | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Juvenile Delinquency Expert | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Marriage Counselor | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Social Science Teacher | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Youth Camp Director | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Social Worker | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Advertising Executive | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Manufacturer's Representative | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Business Executive | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Restaurant Manager | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Sales Person | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Real Estate Salesperson | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Sales Manager | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Business Teacher | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Accountant | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Credit Investigator | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Bank Teller | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Tax Expert | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Financial Analyst | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Payroll Clerk | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

APPENDIX C

PERCEIVED BARRIERS

PERCEIVED BARRIERS

Each of the statements below begins with, "**In my future career, I will probably...**", or a similar phrase. Please respond to each statement according to what you **think (or guess)** will be true for you.

| "In my future career, I will probably...." | Strongly Agree | | Not Sure | Strongly Disagree | |
|--|---------------------------|---|---------------------|------------------------------|---|
| 1. ... be treated differently because of my sex. | A | B | C | D | E |
| 2. ... be treated differently because of my ethnic/racial background. | A | B | C | D | E |
| 3. ... experience negative comments about my sex (such as insults or rude jokes). | A | B | C | D | E |
| 4. ... experience negative comments about my racial/ethnic background (such as insults or rude jokes). | A | B | C | D | E |
| 5. ... have a harder time getting hired than people of the opposite sex. | A | B | C | D | E |
| 6. ... have a harder time getting hired than people of other racial/ethnic backgrounds. | A | B | C | D | E |
| 7. ... experience discrimination because of my sex. | A | B | C | D | E |
| 8. ... experience discrimination because of my racial/ethnic background. | A | B | C | D | E |
| 9. ... have difficulty finding quality daycare for my children. | A | B | C | D | E |
| 10. ... have difficulty getting time off when my children are sick. | A | B | C | D | E |
| 11. ... have difficulty finding work that allows me to spend time with my family. | A | B | C | D | E |

For each item below, finish the sentence with: **"... currently a barrier to my educational aspirations."** For example, Item 14 would read: **"Money problems are ... currently a barrier to my educational aspirations."**

| | Strongly Agree | | Not Sure | Strongly Disagree | |
|---|-----------------------|---|-----------------|--------------------------|---|
| 12. Money problems are... | A | B | C | D | E |
| "...currently a barrier to my educational aspirations" | | | | | |
| 13. Family problems are... | A | B | C | D | E |
| 14. Not being smart enough is... | A | B | C | D | E |
| 15. Negative family attitudes about college are... | A | B | C | D | E |
| 16. Not fitting in at college is... | A | B | C | D | E |
| 17. Lack of support from teachers is... | A | B | C | D | E |
| 18. Not being prepared enough is... | A | B | C | D | E |
| 19. Not knowing how to study well is... | A | B | C | D | E |
| 20. Not having enough confidence is... | A | B | C | D | E |
| 21. Lack of support from friends to pursue my educational aspirations is... | A | B | C | D | E |
| 22. My gender is... | A | B | C | D | E |
| 23. People's attitudes about my gender are... | A | B | C | D | E |
| 24. My ethnic background is... | A | B | C | D | E |
| 25. People's attitudes about my ethnic background are... | A | B | C | D | E |
| 26. Childcare concerns are... | A | B | C | D | E |
| 27. Lack of support from my "significant other" to pursue education is... | A | B | C | D | E |
| 28. My desire to have children is... | A | B | C | D | E |
| 29. Relationship concerns are... | A | B | C | D | E |
| 30. Having to work while I go to school is... | A | B | C | D | E |
| 31. Lack of role models or mentors is... | A | B | C | D | E |

32. Lack of financial support is...

A

B

C

D

E

APPENDIX D

COPING WITH BARRIERS

| | | | | | |
|--|---|---|---|---|---|
| 50. My gender... | A | B | C | D | E |
| 51. People's attitudes about my gender... | A | B | C | D | E |
| 52. My ethnic background... | A | B | C | D | E |
| 53. People's attitudes about my ethnic background... | A | B | C | D | E |
| 54. Childcare concerns... | A | B | C | D | E |
| 55. Lack of support from my "significant other"... | A | B | C | D | E |
| 56. My desire to have children... | A | B | C | D | E |
| 57. Relationship concerns... | A | B | C | D | E |
| 58. Having to work while I go to school... | A | B | C | D | E |
| 59. Lack of role models or mentors... | A | B | C | D | E |
| 60. Lack of financial support... | A | B | C | D | E |

Finally, please indicate your level of agreement with the following four statements:

| "In general, I think that..." | Strongly Agree | Not Sure | Strongly Disagree | | |
|--|----------------|----------|-------------------|---|---|
| 61. ...there are many barriers facing me as I try to achieve my <i>educational</i> goals. | A | B | C | D | E |
| 62. ...I will be able to overcome any barriers that stand in the way of achieving my <i>educational</i> goals. | A | B | C | D | E |
| 63. ...there are many barriers facing me as I try to achieve my <i>career</i> goals. | A | B | C | D | E |
| 64. ...I will be able to overcome any barriers that stand in the way of achieving my <i>career</i> goals. | A | B | C | D | E |