JCA

Journal of College Access

Volume 3
Issue 2 *Special Edition: School Counseling and Postsecondary Success*

Article 7

7-3-2017

The Relationship Between Perceived Career Barriers and Career Decision Self-Efficacy on Initial Career Choice Among Low-Income, First Generation, Pre-Freshman, College-Bound Students

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ABSTRACT

This study was an investigation of the predictive value of perceived career barriers and career decision self-efficacy on the certainty of initial career choice among low-income pre-freshman college students, an under-studied college population with respect to career development (Winograd & Shick Tryon, 2009). The moderating effects of certain cultural characteristics (race, gender and college generational status) on the certainty of initial career choice were also examined. A non-experimental correlational research design was utilized, along with a multiple linear regression analysis, to investigate the predictability of perceived career barriers and career decision self-efficacy, directly and as moderated by the cultural characteristics of gender, race and college generational status on the certainty of initial career choice among pre-freshmen low-income, first generation college-bound students.

Keywords: perceived career barriers, career decision-making self-efficacy, career choice, low-income students, first generation, career counseling, social cognitive career theory

Low-income, first generation college bound students are faced with unique challenges as it relates to college access, particularly in the area of college and career readiness (Engle, Tinto, & The Pell Institute for the Study of Opportunity in Higher Education, 2008; Winograd & Schick Tryon, 2009). This population is said to lack the preparation and knowledge needed to thrive in a college environment, are often less academically prepared, and require intentional guidance and advisement to help shape their academic and career aspirations (Engle et al., 2008; Hertel, 2002; Titus, 2006; Winograd & Shick Tryon, 2009). Low-income, first-generation college students are more likely to come from racial and ethnic minority groups and enter college academically underprepared for the rigors of college course work in the content areas of reading, writing, math and science (Engle et al., 2008; Gloria & Castellanos, 2012; Storlie, Mostade, & Duenyas, 2015; Tate et al., 2015; Titus, 2006; Winograd & Shick Tryon, 2009).

As the topic of college and career readiness for historically underrepresented students continues to gain national recognition through programs like First Lady Michelle Obama's Reach Higher Initiative and former President Obama's College Opportunity Agenda (The White House Office of the Press

Secretary, 2014), secondary and post-secondary counselors need to be prepared to support such a vulnerable, yet highly capable student population. Critical to college and career readiness is the exploration and crystallization of career choices early on (Super, 1990). Students arrive on campus from different social, economic, educational, family and cultural backgrounds, which impacts many factors related to their success in college, as well as the career choices and opportunities they see for themselves (Brown & Lent, 1996; Gordon & Steele, 2003; Luzzo, 1999; Luzzo & McWhirter, 2001; McWhirter, 1997). Students who have been historically underrepresented in higher education (e.g., low income, racial/ethnic minorities, first generation college students) are often faced with unique challenges that may impact their career choices including false realities about occupations (Burton, 2006; Gordon & Steele, 2003; Gloria & Castellanos, 2012; Lepre, 2007; Ringer & Dodd, 1999; Storlie et al., 2015; Tate et al., 2015). To that end, this study focused on of the career choices of pre-freshman, college bound students from financially and educationally disadvantaged backgrounds who were admitted to college via a college access program.

Career Development in College

Traditional-aged students enter college with diverse educational experiences, a myriad of cultural characteristics, and varying degrees of exposure to the world of work. Contextual factors may impact both their beliefs and feelings about future college experiences and career choices (Duffy & Klingaman, 2009; Gloria & Rodriguez, 2000; Engle et al., 2008; Tovar-Murray, Jenifer, Andrusyk, D'Angelo, & King, 2012). First generation college students, in particular, are said to lack the preparation and knowledge needed to thrive in a college environment naturally, are often less academically prepared and require intentional guidance and advisement to help shape their academic and career aspirations (Engle et al., 2008; Hertel, 2002; Titus, 2006; Winograd & Shick Tryon, 2009).

In recent years, universities have developed summer bridge programs to aid in transitioning of historically marginalized groups in higher education for academic remediation, to form a connection to college, and to understand explicit expectations during students' collegiate careers (Kallison & Stader, 2012; Tate et al., 2015; Tomasko, Ridgway, Waller, & Olesik, 2016; Walpole et al., 2008). While there is a body of research on first generation students and historically marginalized populations (Atherton, 2014; Hinz, 2016; Macias, 2013; Pascarella, Pierson, Wolniak, & Terenzini, 2004), there is limited research on how diverse factors impact college career choices. More specifically, the ways in which cultural characteristics might moderate between perceived career barriers and certainty of initial career choice and between career decision self-efficacy and certainty of initial career choice (Winograd & Shick Tryon, 2009). Therefore, this study

focused on pre-freshman college students from low-income backgrounds who were admitted to college via a college access summer bridge program. The interplay between race, gender and college generational status were considered, as supported by the literature, indicating gender and race to be major influencers on the existence of perceived barriers to career decision-making and on levels of career decision self-efficacy (Luzzo, 1993; 1996; Luzzo & McWhirter, 2001, McWhirter, 1997; Trusty et al., 2000).

Theoretical Framework

Social Cognitive Career Theory

Social Cognitive Career Theory (SCCT) provides a useful framework for understanding the effects of self-efficacy on initial career choice and was used to frame this study (Albert & Luzzo, 1999; Lent, 2005; Lent et al., 1994, 2002; Luzzo, 1996; McWhirter, 1997). Grounded in Bandura's (1986) Social Cognitive Theory, SCCT describes specific mediators for learning experiences which can, in turn, influence career behaviors, including making initial career choices. In general, SCCT refers to influences among individuals, their behavior, and their environments and how these factors ultimately shape thoughts and behavior. In addition, SCCT attempts to explain the development of career interests and choices (Albert & Luzzo, 1999). Research supporting SCCT has postulated that these cognitive and contextual factors directly impact career choices and actions (Lent et al., 1994).

Career Decision Self-Efficacy

Career decision self-efficacy has been considered a significant factor in the career development of college students for many years (Betz, 2004; Chung, 2002; Conklin, Dahling, & Garcia, 2013; Foltz & Luzzo, 1998; Gloria & Hird, 1999; Grier-Reed & Ganuza, 2012; Quimby & O'Brien, 2004; Taylor & Betz, 1983). Grounded in Bandura's (1977) concept of self-efficacy, career decision self-efficacy refers to an individual's belief that he or she can successfully complete tasks necessary to making career decisions (Taylor & Betz, 1983). Students with lower levels of career decision self-efficacy often make initial career choices primarily based on parent expectations or job and salary outlook without considering career congruence with their skills, interests, personality traits, or abilities, which lends to the need for further investigation into the certainty of career choices (Alika, 2012; Betz, 2004; Keller & Whiston, 2008; Kniveton, 2004; Wang & Castaneda-Sound, 2008). Furthermore, students with lower levels of career decision-making self-efficacy often exhibit feelings of depression, stress, and anxiety related to unclear goals and plans regarding their careers post-graduation (Lent & Hackett, 1987; Robbins, 1985; Wang, Zhang, & Shao, 2010).

Certainty of Career Choice

Career choice has been a widely-researched topic within the fields of counseling and

vocational psychology and is considered one of the most significant developmental tasks for college students (Amundson, Borgen, Iaquinta, Butterfield, & Koert, 2010; Dik, Sargent, & Steger, 2008; Galles & Lenz, 2013; Niles & Harris-Bowlsbey, 2005). A common thread among much of the existing research is the idea that career choice is shaped by both internal and external factors, and is based upon life experiences at a given point in time (Forbus, Newbold, & Mehta, 2011; Galles & Lenz, 2013; Super, 1990). Determining levels of career certainty for pre-freshman college students may be of particular interest to counselors and administrators, as it can ultimately effect whether or not someone will solidify a college major that may lead to that specific occupation (Astin, 1993; Gordon & Steele, 2003; Ringer & Dodd, 1999). Traditional age college students tend to be at a developmental stage where they are still working to crystallize their career interests and overall self-concept, which may base their initial decisions, that is, decisions during their pre-freshman experiences, on limited life and work experiences (Chickering & Reisser, 1993; Super, 1990; Suzuki, Amrein-Beardsley, & Perry, 2012). Certainty of career choice may be related to developing career maturity, that is, the maturation of attitudes related to making career decisions (Luzzo, 1993). Savickas (1994) described career maturity as the ability to make well-informed and appropriate decisions regarding careers. Previous research with undergraduate students suggests career maturity, self-concept, and self-efficacy are directly correlated with certainty of career choice (Farrell & Horvath, 1999).

Purpose of the Study

The purpose of this study was to identify the relationships and interactions between perceived barriers and career decision self-efficacy on the initial career choices among students in a college access program. More specifically, the primary research questions for this study were:

(1A) To what extent, if any, do perceived career barriers significantly predict certainty of initial career choice among college access students?

(2A) To what extent, if any, does career decision self-efficacy significantly predict certainty of initial career choice among college access students?

The secondary questions were:

(1B) To what extent, if any, do perceived career barriers indirectly, via the moderators of gender, race and ethnicity and college generational status, significantly predict certainty of initial career choice among college access students?

(2B): To what extent, if any, does career decision self-efficacy indirectly, via the moderators of gender, race and ethnicity and college generational status predict certainty of

initial career choice among college access students?

Methodology

Participants

Participants were drawn from a population of pre-college freshman participating in a six-week summer bridge program at a public university in the northeast, all scheduled to fully matriculate in the fall upon successful completion of the program. Students were intentionally chosen to allow for proper investigation of initial career choices prior to beginning their college tenure. Of the106 summer bridge students who participated in the study; 64% identified as female and 36% male, with 47% identifying as Hispanic, 38% African American, 7.5% Asian, 4.7% White, 1.9% Other, and 0.9% American Indian. As it pertained to college generational status, 70% were first generation college students and 30% were not first generation college students, while 42% came from households where a high school diploma or trade school certificate was listed as highest education level. Furthermore, the majority of participants (68%) were children of immigrants, although most were United States citizens (85%) themselves.

Data Collection and Procedures

Data collection took place during one of the mandatory weekly meeting sessions for students enrolled in the pre-college program. Prior to the meeting, the director of the program informed students of the purpose of the researcher's visit. After introductions, the researcher, explained the study and administered all study documents, including informed consent.

Instruments

Participants completed: 1) a demographic questionnaire; 2) the Perceived Barriers Scale (McWhirter, 1997); and 3) the Career Decision Self-Efficacy Scale-Short Form (Betz & Luzzo, 1996). The surveys were completed in paper format and took approximately 10-15 minutes to complete. It is important to note that students under the age of 18 did not participate in the study. Permission was granted for the use of the survey instruments by both respective authors.

Demographic Survey. The demographic questionnaire is a researcher created survey that included questions in the following areas: a) gender, b) college generational status (e.g., yes or no to being a first-generation college student), c) race, d) parents' country of origin, e) student country of origin, f) number of people in their household, g) highest household educational level (e.g., less than high school, high school, college, graduate degree), and h) parent(s) or guardian(s) occupations.

Perceived Barriers Scale. The Perceived Barriers Scale (McWhirter, 1997), consisting of 32 questions, measuring the existence of perceived career and educational barriers was

used in this study. Likert-type item responses range from strongly agree (5) to strongly disagree (1). The instrument is divided into two different categories (items 1-11 for career-related barriers, "In my future career I will probably….be treated differently because of my racial/ethnic background"; items 12-32 measuring educational barriers, "Not being prepared enough is…currently a barrier to my educational aspirations"). Total scores are determined by summing the responses after performing reverse scoring on the negatively worded responses. Higher scores indicate a higher perception of barriers. The scale obtained a Cronbach's alpha of .90, with alpha coefficients of .86 and .88 for both subscales. There is a test-retest reliability of .78 over a two-month time span, yielding a stability coefficient of .72 and .68 for the two subscales (Kenny, Blustein, Chaves, Grossman, & Gallagher, 2003; Luzzo & McWhirter, 2001; McWhirter et al., 1998). Although the primary focus of this study was on the career-related barriers portion of the scale, participants were asked to complete both parts of the survey instrument.

Career Decision Self-Efficacy Scale Short Form. The Career Decision Self-Efficacy Scale-Short Form (CDSE-SF: Betz & Taylor, 2006; Taylor & Betz, 1983), consisting of 25 questions measuring beliefs about successfully completing tasks necessary for career decision-making, was used to measure participants' levels of career decision self-efficacy. The CDSE-SF, consisting of 25 items is a shortened version of the original Career Decision Self-Efficacy Scale, which consisted of 50 items (Taylor & Betz, 1983). Participants select from a 5-level confidence continuum, ranging from no confidence at all (1) to compete confidence (5) in the following 5 subscales: (1) Self-Appraisal; (2) Occupational Information; (3) Goal-Selection; (4) Planning; and (5) Problem Solving (Betz & Klein, 1996). The CDSE-SF yields six scores; subscale scores for the five components of career decision self -efficacy and a total score. Total summed scores range from 25 to 125, with higher scores indicating greater levels of career decision-making self-efficacy. CDSE-SF response values for the five items for each scale are summed and then divided by 5. Scores are interpreted relative to their prediction of approach versus avoidance behavior. High self-efficacy or confidence predicts approach behavior, while low self-efficacy predicts avoidance behavior. Therefore, confidence scores are interpreted relative to the original response continuum.

Certainty of Career Choice. While there was no particular standardized instrument to measure certainty of career choice, career counselors do use an interview format to assess the degree of certainty (Durr & Tracey, 2009; Kim et al., 2014; Tracey, 2010). In order to assess certainty of career choice, a question was included in the demographic questionnaire that was similar to an interview question career counselors would use with clients to assess certainty of career choice.

The specific question on the demographic form to serve this purpose was: Please rate the certainty of your current career choice. Participants were asked to circle the best option from the following Likert-type response: 1) I am sure, 2) I have somewhat of an idea, and 3) No idea. While this method may be viewed as a limitation of the study, it was a viable method for allowing students to self-report their sense of certainty of their initial career choices.

Data Analysis

Data was analyzed using SPSS 20.0. This study utilized a hierarchical multiple linear regression in accordance with the moderation model proposed by Baron and colleagues (Baron & Kenny, 1986; Frazier et al., 2004). Before performing a hierarchical multiple regression analysis to test for moderation (Baron & Kenny, 1986; Frazier, Tix, & Barron, 2004), statistical analyses were conducted to gather descriptive information on the sample. Statistical tests were conducted to test for and address any violations of assumptions for hierarchical multiple regression (Polit, 2010). Hierarchical multiple linear regression analyses were conducted in accordance with moderation for each research question, with the criterion variable of certainty of initial career choice. The standardized predictor variable (perceived career barriers or career decision self-efficacy) was entered on the first step of the hierarchical multiple linear regression model. The dummy-coded cultural characteristic variables of gender, race and college generation status were entered on the second step of the hierarchical multiple linear regression model. The interaction terms of the predictor and moderating variables were entered at the third step of the hierarchical multiple linear regression model.

Results

Demographic Survey

This study surveyed 106 pre-freshman college students participating in a summer bridge program at a northeastern university. In addition to gender, race, and college generational status, supplemental descriptive data was collected on the demographic questionnaire that helps contextualize additional factors that contribute to the career decision-making process for pre-freshman students. Based on the results, almost half of the participants (42%) came from households where a high school diploma or trade school certificate was listed as the highest education level. Furthermore, most participants (68%) were children of immigrants, although most were United States citizens (85%) themselves. Interestingly to note, over half of the participants (56%) considered their parent(s) an integral part of their career decision-making process. Lastly, data were collected to determine additional factors that have helped influence career choices. Factors were chosen in the following sequential order: (1) Family; (2) Television/media; (3) Other (experiences, career research, interests and

passion); (4) Friends; (5) Teachers; and (6) Counselors. While the demographics of the sample population was comparable to other similar college access programs in the region, results are not generalizable due to the limited sample.

Perceived Barriers Scale

The Perceived Barriers Scale (McWhirter, 1997) examined the role that perceived barriers play in the career decision-making process. Total scores were determined by summing the responses after performing reverse scoring on the negatively worded responses. Higher scores indicated a higher perception of barriers. Perceived Barriers Scale scores in this study ranged from a low of 1 to a high of 44 (M=28.53, SD=8.66).

Career Decision Self-Efficacy Scale Short Form

The Career Decision Self-Efficacy Scale-Short Form (CDSE-SF: Betz & Taylor, 2006; Taylor & Betz, 1983), assessed how successfully an individual could complete the necessary tasks to career decision-making by considering the role of self-efficacy expectations. CDSE-SF scores were calculated by summing the response values for the 25 items. CDSE-SF scores for this study ranged from a low of 45 to a high of 125 (M=94.38; SD=17.31). Scores were then divided by 25, resulting in a score range of 3.28-4.28 (moderate to good confidence). Scale scores were interpreted using the following criteria: 3.5 or above (good confidence), 2.5 to 3.5 (moderate confidence), 1.0 to 2.5 (low confidence) (Betz & Taylor, 2006).

Career Certainty

Certainty of Career Choice was measured using a Likert-type question on the demographic questionnaire (M=2.30, SD=.76). Results indicated 48.1% reported being sure about their current career choice, 34% reported having somewhat of an idea, and 17.9% reported having no idea.

Hypothesis Testing

Hypothesis 1A

Perceived career barriers, as measured by the Perceived Barriers Scale (Luzzo & McWhirter, 2001; McWhirter, 1997), will significantly predict certainty of initial career choice, as measured by a Likert-type question on the demographic form, among pre-freshmen college students enrolled in the summer bridge program. A linear regression was conducted to test this hypothesis. Based on the results from the linear regression, perceived career barriers did not significantly predict certainty of initial career choice, $F(1, 104) = .032$, $p = .858$, and explained 0.00% of the variance in the variable of certainty of initial career choice.

Hypothesis 1B

The variables of gender, race, and college generational status will moderate between perceived career barriers and certainty of initial career choice, among pre-freshmen college students. The interactions of perceived

career barriers and gender, perceived career barriers and race, and perceived career barriers and college generation status were entered on the third and last step of the regression model (see Table 1 on page 87). As indicated in Table 1, the only significant model was the third model, Fchange(3, 98) = 5.02, p = .003, which, based on the R^2 change value of .129, which contributed 12.9% of the variance of the dependent variable of certainty of initial career choice. When examining univariate effects, there were two significant predictors. Perceived career barriers significantly predicted certainty of career choice, β(106) = .32, t(1, 105) = 2.34, p = .021, although perceived career barriers did not necessarily predict certainty of initial career choice without testing for moderating effects of the cultural variables. Based on the coding of variables, the lower the perceived career barriers, the higher the certainty of career choice. The only other significant predictor in the third model was the interaction of perceived career barriers and college generation status, β(106) = -.41, t(1, 105) = -3.51, p = .001. Based on the coding of college generation status, being a first generation college student and having high-perceived career barriers predicted lower levels of certainty of career choice.

Hypothesis 2A

Career self-efficacy, as measured by the Career Decision Self-Efficacy Scale-SF (Betz & Taylor, 2006; Taylor & Betz, 1983), will significantly predict certainty of initial career choice, as measured by a Likert-type question on the demographic form, among pre-freshmen college students. A linear regression was conducted to test this hypothesis. Based on the results from the linear regression, career decision self-efficacy did significantly predict certainty of initial career choice, F(1, 103) = 7.61, p = .007. Based on the R^2 value of .069, career decision self-efficacy explained 6.9% of the variance in the variable of career certainty.

Hypothesis 2B

The variables of gender, race, and college generational status will moderate between career decision self-efficacy and certainty of initial career choice, among pre-freshmen college students. A multiple linear regression was conducted, with the variables of gender, race, and college generation status entered on the first step of the regression model, followed by the variable of career decision self-efficacy. The interactions of career decision self-efficacy and gender, career decision self-efficacy and race, and career decision self-efficacy and college generation status were entered on the third and last step of the regression model (see Table 2 on page 88). The only significant model was the second model, where gender, race, college generation status, and career decision self-efficacy predicted certainty of career choice, Fchange(1, 100) = 7.79, p = .006. Based on the R^2 change value of .071, this model explained 7.1% of the variance in the dependent variable of certainty of career choice. When examining univariate effects, the only significant

Table 1.
Multiple Linear Regression: Gender, Race, and College Generation Status, Perceived Career Barriers, and Interaction Terms Predicting Certainty of Career Choice (N = 106)

	β	*T*	*R*	*SEE*	R^2	R^2_{change}	*P*
Model 1			.18	.76	.031	.031	.358
Gender	.10	1.00					.321
Race	-.11	-1.14					.258
College Generation Status	.10	1.06					.292
Model 2			.18	.76	.031	.000	.907
Gender	.10	.98					.329
Race	-.11	-1.22					.260
College Generation Status	.10	1.05					.294
Perceived Career Barriers	-.01	-.06					.949
Model 3			.40	.72	.160	.129	.009
Gender	.12	1.19					.236
Race	-.17	-1.77					.080
College Generation Status	.13	1.33					.188
Perceived Career Barriers	*.32*	*2.34*					*.021*
Gender by Perceived Career Barriers	-.18	-1.44					.154
Race by Perceived Career Barriers	.11	1.11					.272
College Generation Status by Perceived Career Barriers	*-.41*	*-3.51*					*.001*

Note. Model 1: $F_{change}(3, 102) = 1.09$, $p = .358$; Model 2: $F_{change}(1, 101) = .004$, $p = .949$; Model 3: $F_{change}(3, 98) = 5.02$, $p = .003$. Significant results in italics.

Table 2.
Multiple Linear Regression: Gender, Race, and College Generation Status, Career Decision

	B	*T*	*R*	*SEE*	R^2	R^2_{change}	*P*
Model 1			.166	.76	.027	.027	.419
Gender	.09	.91					.366
Race	-.10	-1.00					.318
College Generation Status	.11	1.09					.279
Model 2			.313	.73	.098	.071	.006
Gender	.07	.72					.471
Race	-.13	-1.31					.195
College Generation Status	.10	1.04					.300
Career Decision Self-Efficacy	*.27*	*2.79*					*.006*
Model 3			.352	.74	.124	.026	.376
Gender	-.70	-1.31					.193
Race	-.25	-.46					.650
College Generation Status	.53	.92					.358
Career Decision Self-Efficacy	.21	1.34					.183
Gender by Career Decision Self-Efficacy	.80	1.45					.150
Race by Career Decision Self-Efficacy	.09	.16					.874
College Generation Status by Career Decision Self-Efficacy	-.43	-.74					.464

Note. Model 1: $F_{change}(3, 101) = .52$, $p = .419$; Model 2: $F_{change}(1, 100) = 7.79$, $p = .006$; Model 3: $F_{change}(3, 97) = .95$, $p = .418$. Significant results in italics.

predictor in the second model was career decision self-efficacy, $\beta(106) = .27$, $t(1, 105) = 2.79$, $p = .006$.

Discussion

This study surveyed 106 pre-freshman college students participating in a summer bridge program at a Northeastern university. As it pertained to college generational status, 70% were first generation college students and 30% were not first generation college students. These statistics were comparable to those in similar college access programs across the region and country (Engle et al., 2008; U.S. Department of Education, 2012; Winograd & Schick Tryon, 2009) though results remain non-generalizable by the limited sample size.

Perceived Career Barriers and Certainty of Initial Career Choice

This study used a linear regression to test the predictive value of perceived career barriers and the certainty of initial career choice of college access program pre-freshman college students. Based on the results from the linear regression, perceived career barriers did not significantly predict certainty of initial career choice. Despite the existing research supporting the significance of perceived career barriers on the career decision-making process (Howard et al., 2010; Lent et al., 2002; Luzzo & McWhirter, 2001; McWhirter, 1997; Rivera et al., 2007; Swanson et al, 1996; Swanson & Woitke, 1997), data collected from this study failed to show a significant relationship between perceived career barriers and the initial career choice among pre-freshman college students. These results seem to contradict the literature suggesting a strong relationship between the two variables (Luzzo & McWhirter, 2001; McWhirter, 1997). Although the data in this study seem to contradict other studies, the results must be interpreted with caution because of a smaller sample size and the fact that the students were pre-entry freshmen.

A hierarchical multiple linear regression was run to control for the moderating effects of cultural characteristics (race, gender, and college generational status) on perceived career barriers to the initial career choice of college access pre-freshman college students. Prior research suggests that these cultural characteristics have a direct impact on the existence of perceived career barriers and, in turn, could directly affect career choice (Albert & Luzzo, 1999; Lent et al., 2002; Luzzo & McWhirter, 2001; McWhirter, 1997). These results showed that, when considering controlling for the moderating effects of certain cultural characteristics, the lower the perceived career barriers, the higher the certainty of career choice. The most significant results pertained to the moderating effects of college generational status, which indicated that being a first generation college student and having high perceived career barriers predicted lower levels of certainty of career choice. Results regarding race and gender were inconsistent with the literature

(McWhirter, 1997), as they did not appear to predict levels of certainty of career choice.

Career Decision Self-Efficacy and Certainty of Initial Career Choice

The results from the linear regression indicate career decision self-efficacy did significantly predict certainty of initial career choice, which is consistent with supporting literature that positive relationships between career decision self-efficacy and career choice (Betz, 1994, 2004; Betz & Taylor, 2006, Conklin, et al., 2013; Foltz & Luzzo, 1998; Grier-Reed & Ganuza, 2013; Lent & Hackett, 1987; Taylor & Betz, 1983). In relation to the moderating effects of the three characteristics (race, gender, and college generation status), it appeared that race and gender played some role, although results were not statistically significant to show up when tested individually. Results from this study seem to conflict with other empirical studies that addressed similar questions where racial and ethnic variables did serve as predictors of career decision self-efficacy (Gloria & Hird, 1999). Despite the conflicting literature, very little research exists examining all three cultural characteristics (race, gender, college generational status) simultaneously.

Moderating Results

Regarding perceived career barriers, this study failed to identify any significant relationships between perceived career barriers and certainty of initial career choice among college access pre-freshman college students. When considering the moderating effects of certain cultural characteristics, there were some interactions when testing all three cultural variables at once (race, gender, college generational status); however, when measured individually, the only significant variable when testing for the predictive value of perceived career barriers to certainty of initial career choice was college generational status. One reason this may have occurred with this sample population may have to do with participants' understanding of their own gender and racial identity development. Similarly, their lack of experience in the workplace may speak to their lack of understanding regarding discrimination. It is also important to note that the sample population were all high-achieving students who chose to go to college; thus, results were influenced by the homogeneity of this group of first generation college students.

With respect to career decision self-efficacy, although results from this study did show career decision self-efficacy to be a significant predictor to certainty of initial career choice, there was not much significance when factoring in cultural variables individually. In other words, race did not moderate between career decision self-efficacy and certainty of initial career choice, gender did not moderate between career decision self-efficacy and certainty of initial career choice nor did college generational status alone. However, when all three variables were tested simultaneously, cultural characteristics did show some moderation between career

decision self-efficacy and certainty of initial career choice.

Implications for Practice

This study is about the implementation developmental task, via an educational choice, in Super's (1990) exploration stage of career development. More specifically, it focused on a special minority population, college access students, in the pre-enrollment stage of their college careers. Therefore, suggestions for implications for practice center on the career development needs of these students, as well as other similar minority populations.

P-20 Counselors

Results from this study potentially have implications for any educational/counseling professional who is able to help enhance the career development within special populations of college students, such as college access students. Although these results cannot be generalized because of the limited sample and sample size, the findings may provide insight into working with non-college access populations who may have similar demographic characteristics, such as racial and ethnic minority students, students from financially disadvantaged backgrounds and first generation college students.

As stated previously, the results of this research can inform career counselors and other educational professionals about factors that may be contributing to the initial career choices of minority students both in high school and in initial college entry; thus helping them decide on appropriate interventions to enhance the initial career choices of these students. Because adolescence is the stage of career exploration involving crystallization, specification, and implementation (Super 1990; Zunker, 2006), school and college career counselors may find the data interesting, particularly as it relates to the positive relationship between career decision self-efficacy and initial career choice. Since there is a significant relationship, they can consider career-related interventions that would enhance this relationship.

"School and college career counselors may also consider programs and services that include early career counseling initiatives, implementation of career service programming, and career-related courses geared toward increasing career decision self-efficacy for minority student populations in particular."

School and college career counselors may also consider programs and services that include early career counseling initiatives, implementation of career service programming, and career-related courses geared toward increasing career decision self-efficacy for minority student populations in particular. For example, researchers have proposed that exposure to role models in students' fields of interest can serve as highly beneficial to increasing career decision self-efficacy (Alike, 2012; Betz, 2004; Conklin et al.,

2013; Dockery & McKelvey, 2013). Therefore, school and college career counselors can use this data to aid with the planning of career-related interventions that would expose students to professionals in a variety of fields who may come from similar cultural backgrounds to mitigate career decision self-efficacy. Career-related interventions should focus on helping students understand their values, interests, personality traits and skills (Niles & Harris-Bowlsbey, 2005; Zunker, 2006). This can positively impact career decision self-efficacy by empowering students to seek information about themselves and career-related information during their early years in college.

Limitations

Several limitations may have impacted the overall results of this study. First, the sample population used was limited to one university within the Northeast region of the United States. Second, the size of the sample and sampling method (i.e., convenience) may have impacted the data. This study was limited to only one college access program rather than including other access programs in the local region. Although the demographics of the university were comparable to that of similar studies, results may not be generalizable to other colleges and universities. Third, amongst the sample population of first generation college students, all students were high-achieving students who decided to attend college. Consequently, results are non-generalizable to first generation college-bound students who struggle academically and decide not to attend college. This study can be improved by using a larger sample population across various universities within the region and nationally. Next, based on the non-significant findings regarding perceived career barriers, it was evident that some of the questions on the Perceived Barriers Scale (McWhirter, 1997) may have been too complex for pre-freshman college students, and the lack of comprehension of scale content may have skewed the data. Lastly, the lack of an assessment tool that was longer and standardized to effectively measure certainty of initial career choice may have impacted the results of this study.

Recommendations for Future Research

Although the findings from this study can foster a better understanding of factors influencing the initial career choices of college access students, more research is warranted to better understand the career development of college access students, a representative population comprised of multiple minority identities. Specifically, additional research exploring the relationship between perceived career barriers and career decision self-efficacy and their impacts on the career decision-making process is recommended. In addition, more information is needed about the effects of certain cultural characteristics (race and gender) on the career decision-making process, since this study did not show any significant impacts on initial career choice

when measured individually, with the exception of college generational status. Moreover, although race, gender, and college generation status were the primary cultural characteristics mentioned throughout existing literature, it may be worth assessing the moderating effects of additional characteristics. For instance, since we know that college generational status played a significant role in the existence of perceived career barriers in this study, parental/ guardian influence may play a role in career choice among college access students. As previously mentioned, parental involvement and encouragement is considered on the most influential factors when considering overall college experience, including academic and career decision making (Forbus et al., 2011; Hertel, 2002; Holcomb-McCoy, 2010; Titus, 2006). To that end, additional research investigating family influence on certainty of career choice is strongly recommended.

Conclusion

Within the past two decades, a significant amount of research has emerged addressing the role of perceived career barriers on the career decision-making process for high school and college students (Albert & Luzzo, 1999, Brown & Lent, 1996; Lent et al., 1994, 2002; Luzzo, 1993; Luzzo & McWhirter, 2001; McWhirter, 1997; Swanson & Woitke, 1997). In conclusion, this study highlighted two major influencers on the career decision-making process for pre-freshman college bound students; perceived career barriers and career decision self-efficacy. Supplemental data was provided to emphasize the moderating effects of certain cultural characteristics (race, gender and college generational status). This study added to the limited research on college access populations and provided enough evidence to support a continued focus on the unique career development needs of such a population. Furthermore, this study highlighted the significance of cognitive and contextual factors influencing career decisions, including the perception of career barriers, levels of self-efficacy, and cultural characteristics (i.e., race, gender, college generational status), as postulated by Social Cognitive Career Theory. Data gathered should inform practice for school and college career counselors, administrators and counselor educators. Lastly, results from this study may help to catapult future research focused on the impact of career development on the overall college student experience among special populations like pre-college freshmen and other minority student populations.

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