DISSERTATION

NURSING AS A CAREER CHOICE BY HISPANIC/LATINO COLLEGE STUDENTS

Submitted by

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ABSTRACT

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A culturally competent healthcare workforce is essential to meet the needs of an increasingly diverse society. Greater diversity in the healthcare workforce is expected have many benefits, including improved access to care for the medically underserved and the promotion of research in areas of societal need (Cohen, Gabriel, & Terrell, 2002). The need for a culturally diverse healthcare workforce includes the profession of registered nursing.

There is a significant disparity between the percentage of Hispanic/Latino individuals in the United States population and the percentage of Hispanic/Latino nurses. Although the number of Hispanic/Latino college students has increased over the past several years, Hispanic/Latino students remain significantly underrepresented in pre-licensure nursing programs. It is necessary for the number of Hispanic/Latino nursing students to increase in order to expand the number of Hispanic/Latino nurses in the healthcare workforce.

A quantitative research design was used for this study. The Career Search Questionnaire (CSQ) developed by Roberts (2008) was administered with the addition of four questions and modifications in the demographic section of the instrument. The survey was administered to students enrolled in freshman or sophomore level college courses at three comprehensive state public universities and one community college in a Western state. The total number of participants in the sample was 961.

Study findings indicated that Hispanic/Latino students were just as interested in and had as high feelings of confidence about activities associated with nursing as a career choice when

compared with non-Hispanic/Latino students. Very few statistically significant differences were found between the two groups of students (Hispanic/Latino and non-Hispanic/Latino), and there were few differences in the correlations of Hispanic/Latino and non-Hispanic/Latino students with demographic and CSQ variables. One exception was that gender was not statistically significant for Hispanic/Latino students, suggesting that gender was not a predictive variable for interest in activities associated with nursing among Hispanic/Latino students.

Additional findings indicated that both Hispanic/Latino and non-Hispanic/Latino students identified having lower feelings of confidence in successfully completing math and science courses that are often required pre-requisite courses for nursing programs. Shadowing a nurse, mentoring by a nurse, healthcare work experience, and volunteer healthcare experience were the top factors identified by both Hispanic/Latino and non-Hispanic/Latino students as necessary for success in a nursing program.

Analysis of the Career Search Questionnaire indicated that the instrument differentiated between interest in activities associated with nursing and non-nursing careers and, likewise, the CSQ differentiated between nursing and non-nursing career self-efficacy. The CSQ appears to be a better predictor of interest in a healthcare career in general rather than specifically nursing.

Implications for practice include use of the CSQ questionnaire as an advising tool for students in the career decision-making process, and identification of strategies that could be implemented by nursing programs to promote success for Hispanic/Latino students considering nursing as a career choice. Future research studies could include broadening the sample to include Hispanic/Latino students enrolled in community colleges, private, and proprietary higher education institutions. Consideration of nursing as a career choice by healthcare providers in

related fields such as medical assistants and nursing assistants could also be investigated. Finally, research could be conducted to determine if Hispanic/Latino students who indicate an interest in nursing as a career choice are actually applying to nursing programs and if so, what factors facilitate their acceptance into a nursing program as well as barriers to admission.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Background

Changing demographics in the United States impact all sectors of the workforce, including healthcare. A healthcare workforce that mirrors the diversity of the population is important to provide culturally competent care. The need for a culturally diverse healthcare workforce includes the registered nursing profession.

A culturally competent workforce is important to healthcare for a number of reasons. Achieving greater diversity in the healthcare workforce is expected to improve access to care for the medically underserved, promote research in areas of societal need, and increase the number of managers and policymakers to meet the needs of a diverse population (Cohen, Gabriel, & Terrell, 2002). Evidence indicates that diversity is also associated with greater patient choice and satisfaction, and better experiences for health professions students (National Academy of Sciences, 2003). The federal government and the American Nurses Association have endorsed standards for culturally appropriate healthcare services (Chitty & Black, 2011). The Joint Commission, a national organization that accredits and certifies more than 19,000 healthcare programs and organizations across the United States, has incorporated cultural competence into its published standards for hospitals (The Joint Commission, 2010).

Transcultural nursing care is a specialty within nursing that focuses on different cultures and subcultures with respect to nursing care and the health-illness beliefs of those cultures (Andrews & Boyle, 2003). A theory for cultural care for nursing was developed by Madeleine Leininger in the 1950's. Leininger recognized the relationship between cultural differences and health practices. According to Leininger's theory, the nursing outcome of culturally congruent care is

improved health and well-being for the patient (Chitty & Black, 2011). Leininger noted increased consumer demand from minorities for better access to professional healthcare that fits their cultural expectations and values (Leininger & McFarland, 2002). According to the American Association of Colleges of Nursing (2013), "nursing's leaders recognize a strong connection between a culturally diverse nursing workforce and the ability to provide quality, culturally competent patient care" (p. 1).

In addition to achieving a culturally diverse workforce, perceptions of nursing as a career choice are also a consideration in attracting qualified individuals to the profession. There are many reasons that nursing can be considered an attractive career choice. The role of the nurse has changed significantly over the past two decades as changes in the healthcare environment, and the nature and delivery of healthcare have resulted in a transformation of nursing practice (Benner, Sutphen, Leonard, & Day, 2010). Trended national surveys have indicated that the public has a long-standing esteem for registered nurses (Buerhaus, DesRoches, Dittus, Donelan, & Dutwin, 2008). Nursing has continued to be a career that attracts both younger and older people, including those seeking a new career or career change (Buerhaus, Donelan, Norman, & Dittus, 2005).

Increased employment opportunities and competitive salaries are among the reasons that nursing can be viewed as a desirable career choice for young adults considering career options as well as adults seeking a career change. Employment opportunities for nurses are projected to expand. According to the Bureau of Labor Statistics (2012a), employment of registered nurses is expected to grow 26 percent from 2010 to 2020, faster than the average for all occupations in the United States. Salaries for nurses have also increased in recent years, with the 2012 national median salary for nurses at $65,470 per year (Bureau of Labor Statistics, 2012b).

Despite efforts to have a culturally diverse healthcare and nursing workforce, there is a significant gap between the percentage of the United States population who identify as Hispanic/Latino and the percentage of registered nurses who identify as Hispanic/Latino. In 2008, 15.4% of the U.S. population identified as Hispanic/Latino (U.S. Department of Health and Human Services, Health Resources and Service Administration, 2010). During this same timeframe, 3.6% of registered nurses identified as Hispanic/Latino, indicating a significant disparity between the Hispanic/Latino population and the registered nursing workforce (U.S. Department of Health and Human Services, Health Resources and Service Administration, 2010).

Representation of Hispanic/Latino students in higher education has increased over the past several years to more closely mirror the general population of Hispanic/Latino individuals in the United States. In 2011, 16.5% of undergraduate students enrolled in degree-granting institutions were Hispanic, a significant increase and a record percentage of Hispanic students for all types of college enrollments (Fry & Lopez, 2012). For the first time, Hispanic students comprised the largest minority group on four-year college and university campuses (Fry & Lopez, 2012). However, Hispanic/Latino high school students continue to face challenges as they seek college enrollment. High school dropout rates, financial constraints, and college admission policies and procedures are among the barriers encountered by Hispanic/Latino students related to college enrollment (Brown, Santiago, & Lopez, 2003).

Despite the recent increased growth of Hispanic/Latino students in the overall undergraduate college population, Hispanic/Latino students remain significantly underrepresented in pre-licensure nursing education (National League for Nursing, 2013). Hispanic/Latino students are among the most underrepresented of all minorities in nursing education. In 2010, slightly under

27% of students enrolled in pre-licensure nursing programs were members of a minority group compared with almost 37% of the U.S. population (National League for Nursing, 2011). Of these, Hispanic/Latino students comprised just 7.6% of nursing students in associate degree programs and 6% of students enrolled in baccalaureate nursing programs (National League for Nursing, 2011). According to the National League for Nursing (2012), in the 2010-2011 academic year:

> While the proportion of many minorities in pre-licensure RN programs are just slightly below the percentage of minorities found among US college students in general, Hispanics remain dramatically underrepresented among nursing students. Representing a mere 6 percent of associate degree and baccalaureate nursing students, Hispanics were enrolled in basic nursing programs at less than half the rate at which they were enrolled in undergraduate programs overall. (para. 4)

The National League for Nursing noted that the low enrollment of Hispanic/Latino nursing students is particularly concerning given the U.S. Census Bureau predictions that by the year 2050 the percentage of Americans who identify as being of Hispanic origin is expected to double (National League for Nursing, 2011). Transcultural nursing theory supports the importance of having a registered nursing workforce that reflects the growing number of Hispanic/Latino individuals in the population. For that nursing workforce demographic to occur, Hispanic/Latino students must comprise a greater percentage of pre-licensure nursing program students.

Statement of Research Problem

The purpose of this study was to explore Hispanic/Latino college students' consideration of nursing as a career choice. This study focused on Hispanic/Latino college students' interest in and self-efficacy for nursing as a career choice, as well as facilitators and barriers to nursing as a career choice. Hispanic/Latino student data were compared with data from non-Hispanic/Latino students to determine similarities and differences.

Research Questions

The primary research question explored in this study was: what factors influence Hispanic/Latino college students' consideration of nursing as a career choice? The associated research questions were:

Research Question 1. What relationship if any exists between interest in and self-efficacy for nursing as a career choice among Hispanic/Latino and non-Hispanic/Latino college students?

Research Question 2. How do each of the following variables: gender, age, English as the primary language spoken in the home, parent college attendance, financial loans for college, and number of completed college credits correlate with Hispanic/Latino college student interest and non-Hispanic/Latino student interest in nursing as a career choice?

Research Question3. How do each of the following variables: gender, age, English as the primary language spoken in the home, parent college attendance, financial loans for college, and number of completed college credits correlate with Hispanic/Latino college student self-efficacy and non-Hispanic/Latino student self-efficacy for nursing as a career choice?

Research Question 4. Do Hispanic/Latino college students differ significantly from non-Hispanic/Latino college students in their interest in nursing as a career choice?

Research Question 5. Do Hispanic/Latino college students differ significantly from non-Hispanic/Latino college students in their self-efficacy for nursing as a career choice?

Research Question 6. What factors are identified as necessary by Hispanic/Latino and non-Hispanic/Latino students to be successful in a nursing program?

Definitions

For purposes of this study, the following definitions were used:

Career interest – Based upon John Holland's theory of six personality types defined by specific interests, behaviors and attitudes providing opportunities to engage in activities and reward behaviors that each type values. Both heredity and the environment shape the development of individual types (Evans, Forney, & Guido-DiBrito, 1998).

Career self-efficacy – "The individual's belief in his or her capability of successfully completing tasks involved in or related to a domain of educational and/or vocational behavior" (Williams & Betz, 1994, p. 341).

College – An educational institution providing higher education or specialized professional or vocational training (Oxford Dictionaries, 2012). The term college includes community colleges and four-year public comprehensive state universities.

Cultural competence – The process in which the nurse continuously strives to work effectively within the cultural context of an individual, family, or community from a diverse cultural background (Andrews & Boyle, 2003).

Hispanic/Latino - Hispanic origin is the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. People who identify their origin as Hispanic or Latino may be any race (Humes, Jones, & Ramirez, 2011).

Nursing – Registered nursing. The term nursing includes a framework of communication, language, and a reflection of who nurses are (Safadi, Saleh, Nassar, Amre, & Froelicher, 2011).

Nursing education programs – Pre-licensure programs leading to associate of applied science or baccalaureate degrees in nursing.

Delimitations

This study was delimited to three public comprehensive state universities and one community college that have pre-licensure nursing programs and are located in a Western state. The sample was drawn from students ages 18 years or older enrolled in freshman and sophomore level courses at one of the participating institutions who were in attendance on the day of questionnaire administration. Students under the age of 18 enrolled in junior or senior level courses or not in attendance at the time of questionnaire administration were not included in this study.

Limitations

The sample of the population may not have been representative of all types of institutions, limiting generalizability of the findings. Some ethnic groups that identify as Hispanic/Latino may have been under-represented in the sample due to the geographic location of the sample. College students may have been unwilling to participate in the study because of a perceived lack of direct benefit for their participation. Another limitation of the study was the sampling method. Individuals who chose to complete the survey instrument participated on a voluntary basis, which could have introduced bias into the sample (Houser, 2012).

Significance of the Study

Hispanic/Latino individuals are significantly underrepresented in nursing education and in the nursing workforce despite the increased growth in their numbers in the U.S. population. Efforts made by some nursing programs to address the problem of underrepresentation of Hispanic/Latino students in nursing programs have not resulted in a significant increase in the number of Hispanic/Latino nursing students which is necessary to increase the number of Hispanic/Latino nurses in the healthcare workforce. Little research has been conducted to

determine possible reasons for this disparity. There have been a very limited number of research studies conducted on minority middle and high school students' perceptions of nursing as a career choice (Degazon and Shaw, 2007; Reiskin and Haussler, 1994). Only one study was identified that investigated the perceptions of nursing as a career choice by Hispanic/Latino college students (Williamson, 2012).

The current study was significant for a number of reasons. Study results increased knowledge of Hispanic/Latino and non-Hispanic/Latino college students' interest in and self-efficacy for a career in nursing. The relationship of demographic variables to interest in nursing as a career choice and feelings of self-confidence related to completing tasks related to nursing were investigated. Study findings added to knowledge of the facilitators and barriers identified by college students in their consideration of nursing as a career choice. This study also provided information about the Career Search Questionnaire as a tool to determine student interest and self-efficacy for nursing and non-nursing careers, including non-nursing healthcare careers.

Researcher's Perspective

This topic is of particular interest to me as the researcher for a number of reasons. I am an educator in a baccalaureate nursing program in a Western state with a significant Hispanic/Latino population. The decision was made to conduct this study based upon my observations over a number of years of the lack of Hispanic/Latino students enrolled in nursing education programs in a Western state. The importance of a culturally diverse nursing workforce has been frequently discussed in nursing literature. However, analysis of current data indicated that previous efforts to address this problem have not resulted in a significant enrollment of Hispanic/Latino students in nursing programs nor a significant increase in the number of Hispanic/Latino registered nurses.

As the researcher, I acknowledge inherent biases in conducting this study. First, I have a bias that culturally competent care is best provided by nurses who are of the same culture as their patients. I also have a bias that it is essential for the profession of nursing to diversify to include greater numbers of males and ethnic minorities.

I have a professional desire to see an increase in both the number of Hispanic/Latino nursing students and registered nurses. I believe in the value of a pragmatic approach to investigate the problem identified in this study. An underlying assumption of this study was that collecting data using quantitative measures provided the best evidence to add to the body of literature on this research topic.

CHAPTER 2

LITERATURE REVIEW

Introduction

A review of the literature supported the gap between the percentage of the U.S. population who identify as Hispanic/Latino and the percentage of the nursing workforce who are Hispanic/Latino. Data reported by the Health Resources and Services Administration (HRSA) showed that in the year 2000, 12.5% of the U.S. population identified as Hispanic/Latino (Sprately, Johnson, Sochalski, Fritz, & Spencer, 2000). This increased respectively to 14.1% in 2004 and 15.4% in 2008 (U.S. Department of Health and Human Services, Health Resources and Service Administration, 2004 and 2010). Most recent information from the 2010 census indicated that 16% of the U.S. population identified as Hispanic/Latino, supporting the trend of an increase in the Hispanic/Latino population (U.S. Department of Health and Human Services, Health Resources and Service Administration, 2010). It is predicted that the Hispanic/Latino population of the United States will continue to increase at a significant rate with a projection that by the year 2050, 24.4% of the population will identify as Hispanic/Latino (U.S. Census Bureau, 2012).

According to the U.S. Department of Health and Human Services (2010), the registered nursing workforce has remained predominately female and Caucasian. Although the registered nurse (RN) population is gradually becoming more diverse, "the racial and ethnic distribution of the RN population is substantially different from that of the U.S. population as a whole" (U.S. Department of Health and Human Services, Health Resources and Service Administration, 2010, p. 11). This difference was particularly evident in the disparity between the percentage of Hispanic/Latino individuals in the population and registered nursing workforce demographics.

Although the percentage of nurses who identified as Hispanic/Latino slightly increased from 2000 to 2008, the percentage of Hispanic/Latino registered nurses in the United States has remained significantly lower than the percentage of the national population who identified as Hispanic/Latino. Data reported by the Health Resources and Services Administration indicated that in the year 2000, 2% of registered nurses identified as Hispanic/Latino (Sprately et al., 2000). This increased respectively to 2.2% in 2004 and 3.6% in 2008 (U.S. Department of Health and Human Services, Health Resources and Service Administration, 2004 and 2010).

It is also important to note that while the overall percentage of Hispanic/Latino nurses has remained low, the percentage of the registered nursing workforce who identified as Hispanic/Latino has been gradually increasing. Just 1.4% of registered nurses who graduated from their nursing programs before 1981 identified as Hispanic/Latino (U.S. Department of Health and Human Services, Health Resources and Service Administration, 2010). According to HRSA (2010), 4.8% of registered nurses who graduated between 1996 and 2000 were Hispanic/Latino compared with 7.1% who graduated from their nursing programs since 2005. Even with this increase, however, the percentage of Hispanic/Latino registered nurses has remained very low in comparison with the current and projected growth of the Hispanic/Latino population.

This review of the literature focused on the factors that impacted Hispanic/Latino student choice of nursing as a career. The literature review is organized by the following topics: (a) college enrollment of Hispanic/Latino students, (b) Hispanic/Latino students' choice of a college major and career development, (c) perceptions of Hispanic/Latino students about nursing as a career choice, (d) strategies to recruit Hispanic/Latino students to nursing, and (e) experiences of Hispanic/Latino nursing students.

College Enrollment of Hispanic/Latino Students

National Center for Education Statistics (NCES) data indicated that enrollment of Hispanic/Latino students in postsecondary, degree-granting institutions has increased at a modest rate over the past decade (Aud, Hussar, Planty, Snyder, Bianco, Fox, Frohlich, Kemp, & Drake, 2010). In 2000, 9.5% of students enrolled in degree-granting institutions were Hispanic/Latino. The percentage of Hispanic/Latino college students increased to 12.5% in 2009 (Aud, et al., 2010). According to the Pew Research Hispanic Center, the percentage of Hispanic students enrolled in degree-granting institutions increased to 16.5% of undergraduate students in 2011 (Fry & Lopez, 2012). Although college enrollments of Hispanic/Latino students are increasing, these students continue to face challenges to complete a college education. A review of the literature provided insight into reasons that contributed to this situation.

High School Graduation Rates

There are many factors identified in the literature related to the traditionally low college enrollment of Hispanic/Latino students. One factor was high school completion rates. According to the most recent data available from the NCES, the average high school graduation rate for Hispanic students attending public high schools was 71% in the 2009/2010 school year (Aud, Wilkinson-Flicker, Kristapovich, Rathbun, Wang, & Zhang, 2013).

The NCES also collects data on the status dropout rate, a statistic that indicated the percentage of 16 through 24 year olds who were not enrolled in school and have not earned a high school credential. Although declining, Hispanic/Latino high school students had the highest dropout rate, at 14%, of any racial/ethnic group among students ages 16-24 in 2011. This percentage included a dropout rate of 31% among Hispanic students who are foreign born (Aud, et al., 2013). The Hispanic/Latino high school dropout rates have consistently been the

highest reported according to race and ethnic groups by the NCES since 1980, indicating that Hispanic/Latino students have a significantly greater high school dropout rate over time than other ethnic groups. Lack of completion of high school has limited the ability of Hispanic/Latino high school students to continue their education in college since many colleges require a high school diploma or GED for admission.

High School Academic Tracks

According to Nuñez and Kim (2012), there are several high school characteristics that can affect college student enrollments, including expectations related to college enrollment and a rigorous academic curriculum. Often Hispanic/Latino students attend high schools in economically disadvantaged school districts, resulting in a less challenging academic high school education than their peers. Lack of a rigorous high school curriculum may adversely impact student academic preparation for college (Brown, Santiago, & Lopez, 2003; Nuñez & Kim, 2012).

Completion of a rigorous high school academic track was also identified as a factor in the decision of Hispanic/Latino students to attend college, particularly a four-year institution. Arbona and Nora (2007) noted that completion of a rigorous academic track is one of the strongest predictors of Hispanic/Latino student attendance at a four-year college. Gándara (2010) identified access to a strong curriculum leading to college preparation as one of five key components of successful college-going programs for Hispanic high school students.

Linguistic Acculturation

Another factor related to college enrollment of Hispanic/Latino students is language. According to Johnson (2006), language barriers to education have long impacted educational achievement for Hispanic/Latino children. Linguistic barriers have presented significant

challenges for Hispanic/Latino students to transition to and complete college (Oseguera, Locks, & Vega, 2009).

Becerra (2010) conducted a study that examined the differences in perceptions of barriers in education among Latinos in the United States using data from the Pew Hispanic/Latino Research Center. Data were collected by surveying 3,421 adults by telephone, with 1,508 respondents identifying as being of Hispanic or Latino heritage. The study specifically examined the perceptions of linguistic acculturation, academic achievement, socioeconomic status, generational status and perceptions of barriers to college enrollment and completion of a degree. Results of the study indicated that linguistic acculturation was the variable most related to perceptions of barriers to college enrollment. Becerra (2010) stated that fluency in English may result in facilitated interaction with English speakers of the majority culture, possibly leading to a greater awareness of instances of discrimination.

Callahan (2009) analyzed data from the Texas Higher Education Opportunity Project to examine factors influencing college enrollment among Latino language-minority youth. Language minority was defined as self-reporting of a language other than English spoken in the home. Nearly 85% of the Latino students in the sample reported a language other than English in the home. Results of this study indicated that home language use was positively associated with male Latino postsecondary involvement, suggesting that home language use "may be a tool to facilitate Latino males entry into higher education" (Callahan, 2009, p. 193). Callahan (2009) suggested that valuing home language may be a key factor to increase Latino male student desire to attend college.

Immigration

Immigration is another factor that has impacted college enrollment of Hispanic/Latino students. Johnson (2006) identified the issue of immigration and the Hispanic/Latino population in the United States, resulting in reduced access to higher education. Immigration can impact self-concept, decreasing individual belief in the ability to successfully attend college (Johnson, 2006). The issue of undocumented Latino youth has further exacerbated this situation. There are nearly 12 million undocumented immigrants, with approximately 65,000 undocumented students graduating from high school annually in the United States (Abrego & Gonzales, 2010). Despite having full access to the K-12 educational system, structural barriers associated with undocumented status impacts many aspects of the lives of these young adults. These young adults do not have access to financial aid and often cannot afford college tuition. The majority of undocumented Hispanic/Latino youth fail to attend college after finishing high school (Abrego & Gonzales, 2010).

Financial Constraints

The cost of higher education has been identified as a significant barrier to Hispanic/Latino student enrollment in higher education. Lack of financial resources is a major factor with the cost of college a primary concern (Brown et al., 2003; Oseguera et al., 2009). Hispanic/Latino families may not understand the financial aid system and options to finance a college education, leading to lack of consideration of attending college. Sufficient financial aid contributes to a sense of relief for Hispanic/Latino students who may have financial familial obligations to meet in addition to financing their education (Cerna, Perez, & Saenz, 2009).

College Admission Policies and Procedures

College admission policies and procedures can be intimidating for Hispanic/Latino students. Hispanic/Latino students are often prospective first generation college students with limited preparation for college admission processes. Parents of Hispanic/Latino students may come from countries with little formal education and are limited in their ability to guide their children through the college admissions process (Brown et al., 2003).

Taxis (2003) stated that application and acceptance policies of the college or university are the first academic hurdles that Hispanic/Latino students often face. Hispanic/Latino students often find they are unprepared to achieve required scores on achievement tests such as the American College Testing Program (ACT) or the Scholastic Aptitude Test (SAT), adversely impacting their ability to meet admission requirements. Although ACT scores for Hispanic students have remained stable in recent years, Hispanic students measured below national benchmark scores for college-preparedness levels (Adam, 2009). Only 13% of Hispanic students who took the ACT exam in 2012 met all four college-readiness benchmarks, a significant gap from the White and Asian-American students who also took the ACT that year (Gilroy, 2013). Just 23% of the Hispanic students who took the SAT test in 2012 met the benchmark score of 1550, which is identified with a high likelihood of college success, compared with 43% of all students who took the SAT that year (Gilroy, 2013).

Hispanic/Latino students are the least likely racial/ethnic group, in comparison with others, to participate in an extensive college choice process (Perez & McDonough, 2008). Hispanic/Latino students are more likely to attend less selective institutions with higher dropout rates and lower tuition. The majority of Hispanic/Latino students often initially enroll in community colleges rather than a four-year college (Arbona & Nora, 2007).

The literature supported the premise that the decision to attend college by Hispanic/Latino students is often made well before the completion of high school. Arbona and Nora (2007) contended that by the 10th grade, Hispanic/Latino students who intended to enroll in college reported that most or all of their friends also planned to attend a four-year college. Arbona and Nora stated that "it seems very likely that this peer identification process is facilitated by curriculum tracking in high school." (p. 262).

Family is a primary consideration for the Hispanic/Latino student when making decisions about attending college. The family is highly valued in the Hispanic/Latino culture, and is an important influence when making decisions about attending college (Brown et al., 2003). Parents and extended family members are essential resources to Hispanic/Latino students in their decision-making process about their education (Perez & McDonough, 2008).

Hispanic/Latino Students Choice of a College Major and Career Development

Deciding upon a college major is an important decision for a student to make. This decision can be made prior to attending college and become an important reason to enroll in college courses. Alternatively, a student might begin taking college courses with an undeclared major. College experiences may impact the choice of a major for these students. There are a number of variables identified in the literature that may influence the choice of a college major for Hispanic/Latino students.

Career Expectations

The development of career aspirations and expectations occurs within a cultural context and may be influenced by factors such as gender and race/ethnicity (Metz, Fouad, & Ihie-Helledy,

2009). For example, Mexican American and African American students often expect to pursue conventional occupations at a higher rate than their European American peers (Metz et al., 2009).

A meta-analysis conducted by Fouad and Byars-Winston (2005) found that although there were no significant differences between the career aspirations of ethnic minority or non-minority individuals, there were significant differences in career expectations. Ethnic minorities expected fewer career opportunities and more career barriers than non-minority individuals. These differences in career expectations can be seen in the choices that ethnic minorities make as they enter the job market. Fouad and Byars-Winston (2005) noted the underrepresentation of Hispanic/Latinos in many professional occupations and overrepresentation in lower-paying jobs.

A study conducted by Metz et al. (2009) found that 35% of the minority students in the sample reported aspirations for social occupations, a significant increase from previous research conducted by Arbona and Novy (1991). This increase may represent a generational shift in career interest, values or employment opportunities. The authors also noted that the students who participated in the study were recruited from introductory psychology classes and may have enrolled in the course based upon career aspirations related to social occupations.

Personal Goals

The role of interest in meeting personal goals is another factor that impacts the choice of a major by college students, including Hispanic/Latino students. A study conducted by Morgan, Isaac, and Sansone (2001) indicated that a critical influence on career choice is the anticipation that the work will be interesting. High pay and status predicted greater interest only for careers involving physical/mathematics sciences. A general finding of the study was that level of interest positively predicted the likelihood of a particular career choice.

Risco and Duffy (2010) surveyed 236 Latina/o incoming college students about their work values, career decidedness, and career choice. Results of their study indicated that Latina students placed more importance on genuine interest in the field and job security. Conversely, Latino students placed more importance on anticipated high salaries and working without close supervision. Latina students were found to be more indecisive and have lower career choice importance than the Latino students.

Influences on Career Development

Fouad (1994) discussed the importance of cultural values in relationship to career assessment with Latino/Hispanic individuals in the United States. According to Fouad, factors that may affect Latino/Hispanic values related to career choice included age, socioeconomic status, education and acculturation. Acculturation was defined by Fouad as the process of becoming changed as a result of being in a new culture. Acculturation clearly affects the impact of traditional Latino/Hispanic cultural values on an individual's behavior (Fouad, 1994). Familismo (strong affiliation with nuclear and extended families), respeto (appropriate respect given to individuals based on gender, age, and family role) and machismo (maleness and position of men as providers for their family) are examples of traditional values held by the Latino/Hispanic culture that may impact career choice decisions (Fouad, 1994).

Shinnar (2007) conducted a qualitative study on the career development of seventeen recent adult immigrants from Mexico. Based upon her study, a model describing the barriers and motivators to career development for this sample was proposed. Personal characteristics and goals, cultural values, immigration status and job security were significant in influencing the perception of career development among her sample. The state of the labor market and recent immigration trends were also identified as impacting perceived career options.

Yakushko, Backhaus, Watson, Ngaruiya, and Gonzalez (2008) conducted a theoretical review of possible influences on the career development of recent immigrants and refugees in the United States. Their review indicated that career concerns for immigrants and refugees must be considered within larger systems, including families and cultural communities. They also contended that an acculturation process had direct implications on the career development of recent immigrants. Miranda and Umhoefer (1998) found that the best predictors of Hispanic/Latino career self-efficacy were acculturation and language use. These factors were more important than length of time in the United States, age or educational level.

Nores (2010) used administrative data from two public universities in Texas to examine students' major choices by citizen status. Nores found that there were larger concentrations of non-citizens in Science, Engineering and Math (SEM) majors with the exception of non-citizen Hispanic students, which were lower. Hispanic students who were citizens had high representation in the SEM majors.

Self-efficacy is identified in the literature as a factor with special consideration for the Hispanic/Latino culture and career choice. Rivera, Chen, Flores, Blumberg, and Ponterotto (2007) examined the relationship between perceived barriers, acculturation, and role model influences on career self-efficacy and considerations with a sample of 157 Hispanic women attending an urban community college. The study provided support for the usefulness of career self-efficacy as an explanatory construct for understanding Hispanic women's career considerations. Results suggested that the greater the perceived barriers by Hispanic women, the more likely they were to select female-dominated occupations.

Gushue, Clarke, Pantzer, and Scanlan (2006) surveyed 128 Latino/a high school students to determine the possible relationship between career decision-making self-efficacy and perceptions

of barriers and outcome variables of vocational identity and career exploration behaviors. Their results indicated that perceptions of fewer barriers were found to be related to an integrated vocational identity. Higher levels of career decision-making self-efficacy were related to a more differentiated vocational identity.

Mentoring and Role Modeling

Mentoring and role modeling have also been identified as impacting the choice of a career by Hispanic/Latino students. Mentors can provide coaching to help students make decisions about career choices. Shinnar (2007) stated that mentors can provide encouragement and information about career options for Hispanic/Latino students. Healthy mentoring relationships can result in positive career choice decisions and more career development opportunities for Hispanic/Latino students.

Role models have been widely identified as a major source of influence in career choice. Role models can have a significant effect on career decision, particularly if the individual builds a high quality relationship with the role model (Perrone, Zanardelli, Worthington, & Chartrand, 2002). The lack of minority role models in some professions has been partially blamed for the lack of diversity in certain professions (McDowall-Long, 2004).

Nursing as a Career Choice by Hispanic/Latino Students

Diversity of the Healthcare Workforce

The need to increase the diversity of the nursing workforce is well documented in the literature. A culturally diverse nursing workforce is needed to effectively meet the healthcare needs of an increasingly diverse population in the United States. According to Gonzales, Gooden, and Porter (2000), the number of Americans who identify as an ethnic minority will increase to 40% of the population by the year 2030. As previously noted, Hispanic/Latinos are

the fastest growing minority population in the United States, with a projected growth to over 24.4% of the population by the year 2050 (U.S. Census Bureau, 2012).

Underrepresentation of minorities in nursing is one of the most serious problems facing the healthcare workforce. The continued growth in the minority population created the need to match ethnic and cultural characteristics of healthcare providers with those of the population that they serve (Cole and Stutte, 1998). Ethnically and culturally diverse patients are more likely to seek healthcare services from providers of similar ethnic and cultural groups (Gilchrist & Rector, 2007). The importance of a diverse nursing workforce is critical to bridge the gap between racial and ethnic groups, and the traditionally white majority healthcare system in the United States. Minority nurses can facilitate culturally competent care tailored to the unique expectations, needs and values of specific racial and ethnic groups (Nugent, Childs, Jones, Cook, & Ravenell, 2002). Minority nurses tend to work with minority populations and participate in health promotion programs with vulnerable populations (Edwards, 2003).

A number of reasons have been identified related to the importance of increasing the diversity of the healthcare workforce. Cohen, Gabriel, and Terrell (2002) identified the following four reasons for attaining this goal: 1) advancing cultural competency, 2) increasing access to high-quality healthcare services, 3) strengthening the medical research agenda, and 4) ensuring optimal management of the healthcare system. The authors made the argument that cultural competency is necessary to understand how culturally-determined factors influence the manner in which people experience illness and respond to treatment and medical advice. An understanding of these factors is essential to provide optimally effective healthcare.

The occurrence of healthcare disparities has been identified as an important reason for a diverse healthcare workforce. Healthcare disparities occur within socioeconomic as well as

racial and ethnic groups. Minority clients often receive inadequate healthcare because of decreased access, low socioeconomic status, and lack of available resources, contributing to major health problems that disproportionately affect those individuals (Nugent et al., 2002). Underrepresentation of diverse groups in health professions, access to care and cultural sensitivity in the delivery of healthcare have been identified as areas needing to be addressed to eliminate these disparities (Nugent et al., 2002).

Hispanic/Latino Student Enrollment in Nursing Programs

A critical linkage to having a diverse nursing workforce is diversity in the student population enrolled in nursing programs. Lack of diversity in nursing student enrollment directly results in a lack of diversity in the nursing workforce. The literature supported the need to address the issue of increasing the diversity of students enrolled in nursing programs (Barbee & Gibson, 2001; Coffman, Rosenoff, & Grumbach, 2001; Milone-Nuzzo, 2007; Seago & Spetz, 2005). Underrepresentation of minority groups enrolled in nursing programs also results in decreased numbers of minority nurses in graduate nursing programs, contributing to a shortage of diverse nursing faculty (Zuzelo, 2005). A number of reasons have been identified for the relatively low number of minority students in nursing programs.

A study conducted by Naylor and Sherman (1988) indicated a number of barriers to the successful recruitment of minority students to nursing, including lack of scholarships, lack of positive attitudes from administrators, and lack of minority nurse role models. Economic incentives in the form of scholarships and financial aid were found to be particularly important in the recruitment of minority students (Dowell, 1996).

Jimenez (2012) conducted a qualitative study focused on the perceptions of practicing Hispanic nurses and nursing faculty regarding nursing education and mentorship. Twenty-seven

nurses participated in four focus groups from three healthcare organizations and one nursing program. Study participants recommended formal mentoring programs between community college and four-year programs to recruit and retain Hispanic nursing students.

Restrictive admission policies, faculty attitudes, and faculty inability to meet the needs of minority students have been identified as factors impacting the recruitment of minority students into nursing (Dowell, 1996). Discrimination among nursing faculty and students remains a problem for minority students (Doutrich, 2005). Herrera (2012) interviewed six Hispanic nurses about their experiences in a community college nursing program. Respondents described negative experiences with faculty, and identified a lack of sensitivity and knowledge of cultural demands of a Hispanic woman by faculty.

Negative perceptions of nursing along with the lack of pre-collegiate preparation in high school have been identified as reasons contributing to the lack of minority applicants (Dowell, 1996). Results of a study conducted by Boyle (1986) found that the strongest predictor of success in a baccalaureate nursing program was prior academic success both in high school and college. Completion of a college preparatory curriculum indicated better preparation for a nursing curriculum, particularly for required science and mathematics courses (Coffman et al., 2001).

Goetz (2007) conducted a qualitative research study using semi-structured interviews with thirteen Hispanic/Latino nursing students and nurses. Financial considerations and job security were cited by many of the respondents as reasons they chose nursing as a career. For some, it was a default career choice when their goal to become a physician was determined to be unachievable. Goetz stated that for many of the respondents, the decision to begin a nursing

program was fairly rapid with little research about what was required or what the education would entail.

A study conducted by Evans (2008) investigated the importance of educational and social backgrounds of diverse students in relationship to nursing program success. Hispanic/Latino and American Indian nursing students were compared with Anglo students receiving stipends and other services from a Nursing Workforce Diversity Grant. Results of the study indicated that the Hispanic/Latino and American Indian nursing students presented themselves with less education and of lower socioeconomic class as gauged by parental occupation. These students needed strong, culturally and linguistically congruent mentors and tutors who could role model success in nursing. The assistance of a cultural broker who could help them understand the culture in academia and create networks of support was identified as a factor for success. Finally, the need for financial support for the minority students was demonstrated in the study.

Hispanic/Latino students may be disadvantaged in several different areas, including problems with English reading and writing skills, lack of rigorous educational preparation, low graduation high school graduation rates, and low socioeconomic status (Gilchrist and Rector, 2007). Disadvantaged students may have limited exposure to the types of college opportunities available to people of higher economic status. Zuzelo (2005) stated that the nursing profession has a mandate to support disadvantaged students to bring a better understanding of the issues and concerns facing many healthcare consumers as well as improving the lives of individual students and their families.

Samson (2004) noted that a disproportionate number of disadvantaged students are denied admission despite meeting application requirements for nursing programs. These students are often not competitive in ranking systems that consider performance in science courses and grade

point averages. According to Samson (2004), "the very low representation of Hispanic/Latinos in the nursing workforce, particularly those who are bilingual and/or bicultural, may be a direct result of barriers in reading and comprehending scientific material in English" (p. 33).

High School and College Students

A limited number of studies have been conducted on the perceptions of high school students about nursing as a career choice. Reiskin and Haussler (1994) surveyed 276 junior year students at a culturally diverse, urban high school in New England regarding their perceptions of nursing as a career as compared with their perceptions of an ideal career. Participants in the sample included White, African-American, Latino and Asian students. The questionnaire used in the study was developed by May, Austin, and Campion (1988). African-American and Latino female students had the most positive perceptions of nursing of the four ethnic and racial groups in the study. These students viewed nurses as being appreciated, making a lot of money, working in safe places and being respected by others. Ninety-nine percent of the students in the study planned to go to college and fifty-four percent claimed to have made a decision about their career choice at the time of questionnaire completion.

Degazon and Shaw (2007) surveyed 114 urban ethnic minority and educationally disadvantaged high school students in the northeastern United States about an ideal career and a career in nursing. The researchers used the questionnaire developed by May, Austin and Campion (1988), the same survey instrument used in the Reiskin and Haussler (1994) study. The results of their study indicated that nursing was viewed less favorably in the areas of making decisions for one's self, always having a job, working in a safe place, making a lot of money and earning appreciation and respect. Areas in which nursing was viewed more favorably were working with one's hands and being very busy. The authors noted that student perceptions of

nursing may be based on misinformation, lack of awareness of options available within the profession, or a higher regard for a different career.

Williamson (2012) interviewed 16 Hispanic, female undergraduate students enrolled in non-nursing majors from three colleges in the Northwest Arkansas metropolitan area to determine their perceptions of nursing as a career choice. Five contributing factors were identified that influenced participants' decisions to not consider nursing as a career choice. Those factors were enjoyment or love of a selected career, high school career advice, perceptions that nurses are good, caring assistants for physicians, options for young Hispanic females to obtain any type of professional degree, and lack of high school counselor support and encouragement (Williamson, 2012).

Strategies to Recruit Hispanic/Latino Students to Nursing

According to Cole and Stutte (1998), the reason most often cited for a lack of diversity in nursing was the recruitment and retention of minority nursing students and nursing faculty. Several different types of recruitment and retention strategies have been attempted to increase diversity in nursing programs.

K-12 Educational Pipeline

To achieve the goal of a diverse nursing workforce, an educational pipeline must be established in the K-12 school system. Potential nursing students need to be identified in middle school and high school to ensure that they are adequately prepared for success in a nursing curriculum. Zuzelo (2005) identified a college predisposition phase that occurs between seventh and ninth grades. This phase is characterized by students and parents beginning to gather information about college options including admission requirements and costs. In this phase, students plan high school academic courses that will prepare them for college requirements.

Disadvantaged students, however, often lack high school counselor and parental support to plan for college preparation (Zuzelo, 2005).

The literature suggested that recruitment of minority students to consider nursing as a career choice needed to begin in middle and high school by introducing students to the nursing profession (Nugent, et al., 2002). Barbee and Gibson (2001) recommended that nursing education programs must actively and aggressively target more recruitment efforts towards non-White students. Increasing knowledge levels within the community regarding the academic requirements necessary to meet admission requirements for a professional nursing program has been identified as an important strategy in the recruitment of ethnic minority students to nursing (Fletcher, Williams, Elliott, Northington, Calvin, Hill, Haynes, Winters, & Davis, 2003).

Strategies to increase the recruitment of minority middle and high school students to nursing as a career choice have been discussed in the literature. Those strategies included making connections with middle and high school students and supporting students through the application process (Beacham, Askew, & Williams (2009). Recruitment at the high school level is important with an emphasis on selecting courses that enable students to meet professional nursing program entrance requirements (Etowa, Foster, Vukic, Wittstock, & Youden, 2005). Hodgman (1999) identified the following three strategies:

1. Build relationships with influential individuals within high schools, leading to direct student referrals;
2. Increase awareness of nursing as a professional career at the point of greatest impact, namely among high school guidance counselors, teachers and the students; and
3. Educate high school personnel and students that professional nursing is college based and academically rigorous.

Pre-entry Programs

Pre-entry programs have been developed as a recruitment strategy to attract minority students to nursing. These programs are typically designed to improve the academic performance of students interested in nursing as early as elementary or middle school (Samson, 2004). The College of New Rochelle School of Nursing received a federal grant from the Department of Health and Human Services for an initiative called Growth and Access Increase for Nursing Students. The nursing faculty offered two pre-nursing experience seminars designed to facilitate skills development and personal and professional growth (Valencia-Go, 2005).

The Alvernia College Nursing Department developed an academic-community partnership with the goal of increasing the number of baccalaureate-prepared Hispanic/Latino nurses. An objective of this program was to introduce developmentally specific programming for elementary, middle and high school children to make students aware of nursing as a career choice. The program included a camp for fourth, fifth and sixth grade school children, a nurse shadowing program, and mentoring program. High school students were introduced to nursing program application requirements along with summer classes to meet course pre-requisite requirements (Thacker, 2005).

Rivera Goba (2003) identified two recommendations related to the role of K-12 education in the recruitment of Hispanic/Latino students to nursing. First, K-12 educators can use family resources in this effort. Involvement of family members with the student's academic activities can increase family awareness of college requirements. A second recommendation was for K-12 educators and schools of nursing to develop partnerships. These types of partnerships can create opportunities for role modeling and mentoring. Rivera Goba suggested that the focus of the

partnerships would be providing learning experiences for students about nursing as a career option.

Georges (2012) discussed a project implemented in New York City to increase recruitment, retention and graduation of Hispanic nursing students. The project was designed as a collaborative effort between a Bronx high school, a baccalaureate nursing program, and a partnering hospital. Collaborative activities included tutoring in all subjects, recruitment sessions at high schools, preceptorship and mentoring, and seminars with Hispanic nurse leaders. Enrollment of Hispanic students in the nursing program increased from 8 percent to 26 percent over a three year period. Numerous challenges were discussed related to the implementation of this project, including student difficulties in participating in project activities due to childcare and other family obligations, attendance in support classes based upon immediate problems rather than long-term goals, and the need to conduct workshops on mentorship and coaching for faculty and staff at the partner hospital.

High School Guidance Counselors

High school guidance counselors can play an important role in the consideration of career options by students. Campbell-Heider, Sackett, and Whistler (2008) discussed a project in which a half-day workshop was conducted by faculty and students from the University of Buffalo School of Nursing with thirty-nine guidance counselors from an urban inner city school system. Guidance counselors reported that many students and parents viewed nursing as a dangerous field, students did not plan for the pre-requisites required for baccalaureate nursing program entrance and nursing was perceived as a narrow field with few opportunities for advancement. The authors suggested faculty collaboration with guidance counselors as an excellent method to address barriers to minority recruitment at the local level.

Negative perceptions of nursing as a career continue to exist. Teens may be affected by gender role discrimination which depicts nursing as "women's work" and implies that nursing is not congruent with masculinity. A study by Grossman and Northrop (1993) revealed that Hispanic/Latino males had a significantly lower opinion of nursing than Hispanic/Latino females.

Experiences of Hispanic/Latino Nursing Students

Several qualitative studies have been conducted to investigate the experiences of Hispanic/Latino nursing students enrolled in nursing programs. A review of these studies revealed that Hispanic/Latino students identified a number of factors that impacted their success in a nursing program. Those factors included financial, family, personal experiences, and faculty/schools (Alicea-Planas, 2009).

A qualitative study conducted by Bond, Gray, Baxley, Cason, and Denke (2008) with fourteen Mexican American nursing students from two universities revealed six themes identified as both barriers and supports to student success. Those themes were financial, academic advising, emotional and moral support from family, classmates, and faculty, professional socialization, mentoring, and technical support. Financial needs were identified as a primary barrier by the students in this study.

Evans (2008) conducted a qualitative research study to compare and contrast perceptions concerning barriers to success from a group of Hispanic/Latino and American Indian baccalaureate nursing students with a comparison group of Anglo students. The minority students were more likely to recognize issues of power and privilege, and worried more about academic failure and family and community obligations than the Anglo students.

Hispanic/Latino males in the study stated that they experienced some resistance from their traditional culture about their decision to choose nursing as a career.

Qualitative research studies have identified strategies that have been successful for Hispanic/Latino nursing students. Motivation to succeed and maintaining strong ties to culture and family were revealed in a study conducted by Moceri (2010). A qualitative study conducted by Rivera Goba and Campinha-Bacote (2008) indicated that storytelling was an effective strategy for nursing faculty to connect culturally with Latina nursing students.

Hererra (2012) conducted a qualitative study to better understand how Hispanic nurses perceived their community college nursing program experience. In her study, six Hispanic nurses were interviewed who completed a community college nursing program to explore their views about their educational experiences. Financial challenges and fear of failing emerged as two common themes related to retention. Five of the six nurses stated that they began their nursing programs with feelings of low self-esteem and confidence. Lack of role models and role conflicts between personal and family expectations were also identified as challenges (Hererra, 2012).

Conclusion

There is a significant gap between the percentage of the population who are Hispanic/Latino and the percentage of registered nurses who are Hispanic/Latino in the United States. Recent data showed that while 16% of the U.S. population identified as Hispanic/Latino, only 3.6% of the registered nursing workforce identified as Hispanic/Latino. The need for a culturally diverse healthcare workforce is well-documented in the literature.

Although improving, college enrollment of Hispanic/Latino students remains a concern, impacted by a variety of factors including relatively low high school graduation rates, lack of

completion of academically rigorous high school curriculum tracks, college admission policies and procedures, and financial barriers. Despite efforts to recruit Hispanic/Latino students to nursing education programs, Hispanic/Latino students comprise just 7.6% of student enrollment in associate degree and 6% of student enrollment in baccalaureate nursing programs, well below the necessary representation in the nursing student population to ultimately result in an increase in the number of Hispanic/Latino nurses in the workforce.

A review of the literature revealed a gap in the research that specifically investigated the consideration of nursing as a career choice by Hispanic/Latino college students. Only one study was identified that investigated interest in nursing as a career choice by college students who were not already enrolled in a nursing program. Additionally, no studies were identified that specifically researched Hispanic/Latino college student interest in and self-efficacy for nursing as a career choice.

Increasing the number of Hispanic/Latino nurses in the healthcare workforce is directly related to increased enrollments in nursing programs. Determining interest in nursing as a career choice, self-efficacy for nursing as a career and perceived facilitators and barriers for success in a nursing program is a necessary first step in addressing the significant problem of under-representation of Hispanic/Latino individuals in nursing education.

CHAPTER 3

METHODOLOGY

The purpose of this study was to investigate Hispanic/Latino college students' consideration of nursing as a career choice. A quantitative methods research design was used to conduct the study. This chapter includes a discussion of the research design, population and sample, instrumentation, data collection procedures, data analysis, delimitations and limitations.

Research Design

A quantitative research design was used for this study. According to Creswell (2009), "quantitative research is a means for testing objective theories by examining the relationship among variables" (p. 4). A postpositivist worldview underlies quantitative research with the problems studied reflecting the need to identify and assess the causes that influence outcomes (Creswell, 2009). The quantitative design for this study was the measurement of variables and analysis of data collected using a survey instrument.

The study was designed using a non-experimental, associational research method. An associational approach is characterized by an independent variable that is assumed to be continuous with five or more ordered categories (Gliner, Morgan, & Leech, 2009). This type of research design was chosen to explore the relationship between variables in the study, including the strength of those relationships. Cross-sectional survey data were collected and analyzed.

Population and Sample

The target population for this study was students enrolled in freshman or sophomore level college courses. The accessible population for this study was students enrolled in freshman or sophomore level courses at a community college and three comprehensive state universities in a

Western state. A non-probability, convenience sampling method of the accessible population was used to collect the data.

The sample was drawn from one community college and three comprehensive state universities that have nursing programs. Originally, the research sites were planned to include three community colleges and three universities. The researcher contacted the state community college system office and requested permission to include three community colleges in the study. However, a previous administrative decision to no longer allow researchers to query students had been made, and approval to conduct this study was not granted. The researcher then contacted a community college outside of the state community college system for permission to invite students from that institution to participate in the study. Approval was granted to conduct the study at this community college.

The four research sites were all located within one state in the Western region of the United States. Institution A was an urban, comprehensive state university located in a large metropolitan area with an enrollment of approximately 23,000 students. Institution B was a comprehensive state university located in the southwestern, rural area of the state with an enrollment of approximately 3,700 students. Institution C was a regional, comprehensive state university located in the southern area of the state with an enrollment of approximately 5,600 students. Institution D was a community college with an enrollment of approximately 8,000 students located in the northern area of the state. Table 3.1 illustrates student participation in the study by research site.

Table 3.1

Student Participation by Research Site

Institution	*n*	%
A	535	55.7
B	222	23.1
C	145	15.1
D	59	6.1

Three of the four colleges and universities were designated as Hispanic Serving Institutions (HSIs) by the Hispanic Association of Colleges and Universities. The definition of an HSI is "colleges, universities, or systems/districts where total Hispanic enrollment constitutes a minimum of 25% of the total enrollment" (Hispanic Association of Colleges and Universities, 2012, para. 1). The fourth institution had a Hispanic student enrollment of 19.5% and was seeking HSI designation. Drawing the sample from these colleges increased the probability of surveying a sufficient number of Hispanic/Latino students based upon the demographics of the overall student population at each institution.

An important consideration in the determination of sample size is statistical power. Houser (2012) defined power as "an analysis that indicates how large a sample is needed to adequately detect a difference in the outcome variable" (p.187). Power analysis was conducted to avoid committing a type II error, which is "the acceptance of a false null hypothesis or stating there are no differences in the outcome when in fact there are differences" (Houser, 2012, p. 256). Power may be calculated prior to conducting a study to determine how many subjects are needed. Ideally, a power level should be at least .80 (Gliner, et al., 2009).

A prospective power analysis estimate for multiple regression was calculated using an online statistical calculator: http://www.danielsoper.com/statcalc3/calc.aspx?id=1. Using an anticipated effect size of 0.15, probability level of .05, seven predictors, and a desired power level of .80, a minimum required sample size of 103 was calculated. For purposes of this study, the minimum number of Hispanic/Latino college students needed in the sample was 103 students. The total required sample size for this study was calculated as 400 students to ensure an adequate sample of Hispanic/Latino college students enrolled in freshman or sophomore level

courses, anticipated to be about 25% of the total sample because of the HSI or HSI-seeking designations of the institutions.

The researcher had established professional relationships with the deans and directors of the nursing programs at the four institutions included in this study. This relationship provided the entrée to the institutions to seek approval to conduct the study. The nursing deans and directors provided information to the researcher about the Institutional Review Board approval process and administrative contact information at their institutions. Data collection began after Institutional Review Board approval was obtained from Colorado State University and each participating university and community college.

The appropriate academic administrator (such as dean or department chair) was contacted to request permission to contact department course faculty teaching freshman or sophomore level courses to arrange for survey administration. In some cases, permission was given for the researcher to contact faculty directly. In other cases, the academic administrator contacted course faculty to discuss potential interest in study participation. The researcher was then notified which faculty members were interested in study participation.

The researcher contacted faculty to schedule survey administration dates and times. The researcher requested 10-15 minutes either immediately prior to the beginning of class or during a class session to administer the survey. In most cases, faculty provided 10-15 minutes of class time for survey distribution. In a few cases the researcher was asked to come to the classroom several minutes before class began to begin survey administration. A small number of faculty requested that the survey be distributed by the researcher to students at the beginning of class and the researcher was asked to return later either during or immediately following the same class

session to collect the completed surveys. This was usually due to students taking an exam in the first class hour, giving students the opportunity to complete the survey following the exam.

Data were collected from volunteer students enrolled in freshman or sophomore level college courses who were 18 years of age or older. Classes offered in face-to-face formats were included in the sample. These classes were taken by students with many different declared majors, including students who had not yet declared a major. A total of 44 class sessions were included in the study. Table 3.2 illustrates the types of courses and number of students participating in each type of course for this study. All surveys were administered during the 2013 spring semester.

Table 3.2

Courses and Participating Students

Course	*n*	%
Anatomy and Physiology	221	23.0
Introduction to Nutrition	167	17.4
General Biology	139	14.5
English	103	10.7
Introduction to Speech	80	8.3
Psychology	70	7.3
Algebra	50	5.2
Introduction to Chicano Studies	38	4.0
Introduction to Statistics	36	3.7
Microbiology	31	3.2
Human Growth and Development	19	2.0
Ecology	7	0.7

Instrumentation

The instrument used in this study was the Career Search Questionnaire (CSQ) developed by Dr. Cristine Roberts. The CSQ was developed in response to the lack of a quantifiable method to identify incoming college students who have the likelihood of success in a nursing career. According to Roberts, "this instrument, when administered to beginning college students, especially those of diverse ethnicity who are interested in nursing, is a significant first step in identifying suitable students for nursing programs" (Roberts, 2008, p. 3).

The CSQ is a relatively new instrument developed and tested by Dr. Roberts for her doctoral dissertation. The CSQ used social cognitive career theory and the career psychology work of Nancy Betz as a theoretical framework (Roberts, 2008). The instrument was designed to differentiate between interest in activities associated with nursing as a career and non-nursing careers. The CSQ is also designed to differentiate between feelings of self-efficacy for nursing activities from those of other careers. Both constructs of interest and self-efficacy have been identified in research studies as important concepts impacting career choice among nurses (Roberts & Ward-Smith, 2010).

The CSQ consists of 48 Likert-scale items with five possible responses to each item. The constructs of interest and self-efficacy were used to design the survey. There are twenty-three items that address career interest, ten of which are related to activities associated with nursing. Participants can select a response to those items ranging from no interest to much interest. Examples of survey items in the career interest subscale can be found in Table 3.3.

Table 3.3

Examples of Survey Items in Career Interest Subscale

Career interest item	Item description
1	I would enjoy working in a research office or laboratory.
2	I am interested in learning new words and terminology to perform a job.
3	I am interested in fine arts activities such as design or performance.

Twenty-five survey items addressed the construct of self-efficacy. Thirteen of those items were related to self-confidence in completing activities associated with nursing. Participants were asked to select a response to those items ranging from no confidence at all to complete confidence. Examples of survey items in the career self-efficacy subscale can be found in Table 3.4.

Table 3.4

Examples of Survey Items in Career Self-Efficacy Subscale

Self-efficacy item	Item description
1	I am able to tie information together that I have collected to plan my work activities.
2	I believe I could write speeches for people.
3	I am able to consider realistic risks and benefits when planning goals for other people.

In addition to the nursing and non-nursing items, one social desirability item was included in each section of the questionnaire developed by Roberts. A copy of the CSQ survey instrument with the designated nursing career interest, nursing career self-efficacy and social desirability items can be found in Appendix A.

The survey instrument designed by Roberts also included a section for the collection of demographic data. Collected data included self-reporting of gender, age, primary race/ethnicity, whether English is the primary language spoke at home, parental college attendance, financial loans to attend college, number of completed college credits, and college major at the time of survey administration.

A pilot study was conducted by Roberts (2008) to test the instrument. The pilot study sample consisted of 62 students enrolled in an Introduction to Nursing course. The pilot study was followed by Roberts' dissertation study. The dissertation study sample consisted of 238 students with a variety of intended majors. Combining both data sets resulted in a study sample of 300 students (Roberts, 2008).

Content validity was established by review of the items by nursing program advisors at the same university where the study was conducted and from counseling psychology students in an advanced career development course (Roberts, 2008). The readability level of the CSQ was determined to be 8.2 using the Flesch-Kincaid Grade Level Index, which indicated suitable use with beginning college students (Roberts & Ward-Smith, 2010).

Exploratory factor analysis was conducted on the pilot data using data from participants who indicated nursing as their intended major and only for the nursing items on the questionnaire. Seven factors were extracted, each having Eigenvalues above 1.0 in the pilot data set. The CSQ items were divided by their highest factor loading, revealing six strong factors for nursing activities (combined interest and self-efficacy items) with a single seventh item.

Exploratory factor analysis was also conducted on the data from both data sets and all survey items. Five factors were extracted, each having Eigenvalues above 1.0. The five factors

were designated as assessment and safety, active problem solving, working with people, scientific learning and compassion.

Internal consistency reliability analysis was determined for all items on both the interest and self-efficacy scales. According to Houser (2012, p. 213), a reliability coefficient level of 0.7 to 0.9 indicates moderate reliability, with a reliability coefficient > 0.9 indicating strong reliability.

The reliability coefficient alphas for the CSQ and two subscales determined by Roberts (2008) were:

All 48 CSQ items	0.869
Career interest	0.767
Self-efficacy	0.818

These results indicated that the instrument and subscales had moderate internal consistency reliability.

The instrument used for data collection for this study included the original CSQ questionnaire subscales and items. Two modifications were made to the demographic section of the questionnaire. The list of college majors was modified from those identified in the Roberts' instrument to reflect the majors offered at the research sites included in this study. A question was added asking what type of college the student was currently attending to differentiate between university and community college enrollment. Demographic data were collected from participants for the following variables:

- Gender
- Age
- Primary race/ethnicity
- English as the primary language spoken in the home
- Mother attended college
- Father attended college
- Loans to attend college
- College credits completed
- College major at this time
- Type of college attending now

Four additional questions were added to the survey instrument to inform the sixth research question. The four additional questions were:

1. What is your confidence level in being successful in the following courses: Anatomy and Physiology, English composition, Chemistry, Human Growth and Development, Microbiology, Nutrition, Introductory Psychology and Statistics.
2. I am thinking about a healthcare career. (A Likert scale was provided with five response choices ranging from strongly agree to strongly disagree. Students who were not thinking about a healthcare career could stop survey completion at that point.)
3. If I am thinking about a career in healthcare, I am considering the following career(s): (A list of fifteen careers was provided with an Other option. Students were asked to check the careers that they were considering).
4. If you are thinking about nursing as a career, what do you need to be successful in a nursing program? (Participants were asked to rank the top three factors from a list of ten items that they believed would help them be successful in a nursing program. An option to list other factors was also provided.)

The complete survey instrument used in this study can be found in Appendix C.

Data Collection Procedure

The CSQ was administered to students enrolled in three universities and one community college in a Western state with institutional enrollments of 19% or higher of Hispanic/Latino students. Participation in the study was voluntary. Data were collected using a paper and pencil survey during a time when students were together for a freshman or sophomore level college class.

A total of 1,013 surveys were administered at the four research sites. The actual sample in the study was 961 students, a response rate of 94.9%. Gliner, et al. (2009) noted an advantage of direct administration of questionnaires is usually obtaining a high response rate. This is particularly true if the surveys are administered in a place where participants are expected to be located, which for this study was either a scheduled classroom or science laboratory setting.

Surveys were administered by the study researcher, with the exception of three classes. In those cases, one trained substitute administered the surveys. A prepared script was read by the researcher or substitute to the students in the class prior to each survey administration. Each student who participated was given a copy of the consent form and survey instrument. Additional copies of the consent form were available for study participants to take with them. The survey required approximately 10-15 minutes to complete. Students were advised not to complete the survey if they had already done so in another class. The researcher brought cookies to each class for students in appreciation of study participation.

Data Analysis

Six research questions were identified for this non-experimental, associational study. Descriptive, correlation and comparative research questions were included in the study. The following research questions, key variables, measurement and statistic were identified for this study:

Research question 1. What relationship if any exists between interest in and self-efficacy for nursing as a career choice among Hispanic/Latino and non-Hispanic/Latino college students?

Key variables: Nursing interest and nursing self-efficacy.

Measurement: CSQ summated 5 point Likert scales of 10 and 13 items.

Statistic: Pearson correlation.

Research question 2. How do each of the following variables: gender, age, English as the primary language spoken in the home, parent college attendance, financial loans for college, and number of completed college credits correlate with Hispanic/Latino college student interest and non-Hispanic/Latino student interest in nursing as a career choice?

Key independent variables: Gender, age, English as the primary language spoken in the home, parent college attendance, financial loans for college, and number of completed college credits.

Key dependent variables: Nursing interest subscale

Measurement: CSQ summated 5 point Likert scale and demographic questions.

Statistic: Pearson correlation.

Research question 3. How do each of the following variables: gender, age, English as the primary language spoken in the home, parent college attendance, financial loans for college, and number of completed college credits correlate with Hispanic/Latino college student self-efficacy and non-Hispanic/Latino student self-efficacy for nursing as a career choice?

Key independent variables: Gender, age, English as the primary language spoken in the home, parent college attendance, financial loans for college, and number of completed college credits.

Key dependent variables: Nursing self-efficacy subscale.

Measurement: CSQ summated 5 point Likert scale and demographic questions.

Statistic: Pearson correlation.

Research question 4. Do Hispanic/Latino college students differ significantly from non-Hispanic college students in their interest in nursing as a career choice?

Key independent variable: Race/ethnicity (Hispanic/Latino versus non-Hispanic/Latino)

Key dependent variable: Interest in nursing as a career choice.

Measurement: CSQ survey summated 5 point Likert scales.

Statistic used for analysis: Independent samples *t* test.

Research question 5. Do Hispanic/Latino college students differ significantly from non-Hispanic/Latino college students in their self-efficacy for nursing as a career choice?

Key independent variable: Race/ethnicity (Hispanic/Latino versus non-Hispanic/Latino)

Key dependent variables: Self-efficacy for nursing as a career choice.

Measurement: CSQ survey summated 5 point Likert scales.

Statistic used for analysis: Independent samples *t* test.

Research question 6. What factors are identified as necessary by Hispanic/Latino and non-Hispanic/Latino students to be successful in a nursing program?

Measurement: Summated responses to survey questions.

Analysis: Descriptive statistical analysis of survey question responses.

Statistical Analysis

Data were entered and analyzed using SPSS version 21. Data analysis occurred in two stages. Descriptive statistics were calculated using information from the demographic section of the survey. Nominal variable data analysis included frequencies and percentages. Inferential statistics were used to analyze research questions one through five. Statistical analyses were conducted at $\alpha = .05$. Descriptive statistics were used to analyze research question six.

Effect size refers to "how much impact the intervention or variable is expected to have on the outcome" (Houser, 2013, p. 257). There are apparent differences in interpreting the strength of a correlation or strength of the relationship between variables. Houser identified the following interpretation of measures of correlation: $r = 0.8$ to 1.0 absolute value indicates a strong relationship, $r = 0.6$ to 0.8 absolute value indicates a moderately strong relationship, $r = 0.4$ to 0.6 absolute value indicates a moderate relationship, and $r = 0.2$ to 0.4 absolute value indicates a weak relationship; less than 0.2 indicates no relationship (Houser, 2013, p. 330).

Cohen (as cited in Gliner, et al., 2009) suggested values for large, medium, and small effect sizes based on effect sizes usually found in behavioral sciences and education studies. According to this interpretation, effect sizes do not have absolute meaning but instead "large, medium, and small are only relative to typical findings in these areas" (Gliner et al., 2009, p. 253). Given the nature of this study, an a priori decision was made to use Cohen's guidelines for the *r* family of effect sizes for this analysis: $r > .70$ is much larger than typical; $r = .50$ is large or larger than typical; $r = .30$ is medium or typical; and $r = .10$ is small or smaller than typical (Gliner et al., 2009, p. 252).

Limitations

A major limitation of this study was the sampling strategy. A convenience sampling strategy was used for this study in which participants were volunteers. An under-representative (convenience) sample results when participants are allowed or asked to self-select to be in a study (Gliner et al., 2009). According to Houser (2012), convenience selection methods can introduce bias into the study. Bias may have been introduced into the study because course faculty provided classroom time to complete the survey, which may have affected subject inclusion. In addition, some faculty encouraged students to participate in the study which may also have introduced a bias about participation.

Another limitation in the study was the relatively small number of research sites. A limited number of community colleges and universities were selected for the study. This limits the generalizability of the study findings to other community colleges and universities located in the Western United States.

CHAPTER 4

RESULTS

This study investigated Hispanic/Latino college students' consideration of nursing as a career choice. A quantitative methods research design was used to conduct the study. The Career Search Questionnaire (CSQ) instrument developed by Dr. Cristine Roberts was used to collect data. The instrument was designed to measure student nursing career interest and nursing career self-efficacy. Modifications were made in the demographic data section of the questionnaire and four questions were added to the instrument to collect additional data about the participants.

The accessible population for this study was students enrolled in freshman or sophomore level courses at one community college and three comprehensive state universities in a Western state. The actual sample was 961 students enrolled in freshman or sophomore level college courses.

Demographics

Demographic information was collected in the first section of the survey instrument. Of the 961 participants, 41.2% (n = 396) were male, 58.6% (n = 563) were female, and .2% (n = 2) chose not to respond. The majority of students (53.7%) were ages 18-20 with 45.9% ages 21 or older. Four participants (.4%) chose not to respond to this item. A greater percentage of Hispanic/Latino students than non-Hispanic/Latino students were 18-20, with 63.8% of the Hispanic/Latino students reporting their ages as 18-20 years old.

Students self-reported their primary racial/ethnicity status. The largest racial/ethnic group in the sample was White (59.7%) followed by Hispanic (21.7%), and African American/Black (6.7%). Distribution by race/ethnicity is illustrated in Table 4.1.

Table 4.1

Student Race/Ethnicity

	All students		Community college students	
Race/Ethnicity	*n*	%	*n*	%
African American/Black	64	6.7	2	3.4
American Indian/Alaska Native	18	1.9	1	1.7
Hispanic	209	21.7	10	17.0
Asian	23	2.4	2	3.4
White	574	59.7	38	64.4
Other	8	0.8	1	1.7
Hispanic plus one or more races	31	3.2	1	1.7
Non-Hispanic plus one or more races	20	2.2	4	6.7
Native Hawaiian/Pacific Islander	4	0.4	0	0.0
Blank	10	1.0	0	0.0
Total	961	100.0	59	100.0

When asked if English was the primary language spoken in the home, 88.3% (*n* = 849) of participants responded yes, 11.2% (*n* = 108) responded no and .4% (*n* = 4) chose not to respond. The majority of the Hispanic/Latino students (72.5%, *n* = 174) indicated that English was the primary language spoken in the home. The majority of students in the sample (57.2%, *n* = 550) reported that their mothers had attended college. A slight majority of students (51.4%, *n* = 494)

indicated that their fathers had attended college. A majority of students (60.9%, *n* = 585) reported that they had financial loans to attend college.

Students were asked how many college credits they had completed at the time of survey administration. A large majority of the sample, (70.5%, *n* = 677), reported completing less than 61 credits. Of the total sample, 45.4% (*n* = 436) indicated they had completed 30 credits or less and 25.1% (*n* = 241) had completed 31-60 credits. Table 4.2 illustrates a detailed breakdown of credits completed by study participants.

Table 4.2

Credits Completed

	All students		Community college students	
Credits	*n*	%	*n*	%
0-6	76	7.9	1	1.7
7-12	105	10.9	9	15.2
13-19	122	12.7	2	3.4
20-26	68	7.1	2	3.4
27-30	65	6.8	7	11.9
31-60	241	25.1	22	37.3
61-120	194	20.2	10	16.9
121+	49	5.1	3	5.1
Blank	41	4.3	3	5.1
Total	961	100.0	59	100.0

Students were asked to report their college majors. A wide variety of majors were identified, including business, education and criminal justice. Nursing (*n* = 154), non-nursing

healthcare (*n* = 151), and natural sciences (*n* = 153) were the most frequently cited majors, accounting for 46.36% of reported majors. Twenty-seven students reported having two majors, with psychology (*n* = 8) and natural sciences (*n* = 6) the most frequently cited. Table 4.3 shows the distribution of majors.

Table 4.3

College Major

Major	All students		Community college students	
	n	%	*n*	%
Business	82	8.3	9	15.2
Computer science	11	1.1	2	3.4
Criminology/criminal justice	36	3.6	2	3.4
Engineering	16	1.6	0	0.0
Education	59	6.0	5	8.5
Fine arts	26	2.6	1	1.7
Healthcare, non-nursing	151	15.3	4	6.8
Healthcare, nursing	154	15.6	17	28.8
Humanities	44	4.5	2	3.4
Natural sciences	153	15.5	3	5.1
Psychology	45	4.6	3	5.1
Social work/sociology	15	1.5	2	3.3
Undeclared	52	5.3	4	6.8
Other	141	14.2	5	8.5
Blank	3	0.3	0	0.0
Total	988	100.0	59	100.0

CSQ Instrument Validity and Reliability

Face validity

Face validity occurs when subject matter experts review an instrument and confirm that it appears to be valid (Houser, 2012). Face validity was determined for this study by having three experienced nursing faculty and three experienced university academic advisors review the survey instrument. The nursing faculty agreed that the subscale items identified by Roberts to measure nursing interest and self-efficacy were applicable to the nursing profession. The university academic advisors reviewed both nursing and non-nursing subscale items. The advisors agreed that the items were valid to measure both nursing and non-nursing career interest and career self-efficacy. One advisor suggested that the item "I am much better at working with people than with things or ideas" could be associated with nursing self-efficacy since nurses frequently work with people.

Reliability

Initially, internal consistency reliability coefficient alphas were calculated for the overall CSQ instrument, career interest and career self-efficacy in order to compare alphas with those determined by Roberts (2008); they were quite similar. Next, reliability coefficient alphas were calculated for each of the four subscales used in the current study: nursing career interest, nursing career self-efficacy, non-nursing career interest and non-nursing career self-efficacy (See Table 4.4). A reliability coefficient level of 0.7 to 0.9 indicates moderate reliability, with a reliability coefficient > 0.9 indicating strong reliability (Houser, 2012, p.213). All of the coefficient alphas met the 0.7 threshold.

Table 4.4

Reliability Coefficients Alphas for the CSQ Subscales

Scale/Subscale	Number of Items	Alphas
Nursing career interest	10	.786
Nursing career self-efficacy	13	.834
Non-nursing career interest	13	.722
Non-nursing career self-efficacy	12	.711

Correlations Among the Subscales

The first research question examined the relationship between interest in and self-efficacy for nursing as a career choice by Hispanic/Latino and non-Hispanic/Latino college students combined. Students who feel confident in their ability to perform tasks and behaviors related to a career in nursing may or may not have an interest in nursing. Conversely, students who are interested in nursing as a career choice may or may not feel confident in their ability to perform related tasks or behaviors associated with nursing as a career.

Because each of the four subscales was approximately normally distributed, Pearson correlations were computed to examine the intercorrelations of the variables. Table 4.5 shows that all four subscales were significantly correlated.

The strongest positive correlation, which would be considered a larger than typical effect size according to Cohen (as cited in Gliner et al., 2009), was between nursing career interest and nursing career self-efficacy, $r(856) = .590$, ($p < .01$). This result indicated that students who were interested in nursing as a career choice were likely to have high nursing career self-efficacy scores. Non-nursing career interest was also positively correlated with non-nursing career self-efficacy ($r = .532$) which is also a larger than typical effect size according to Cohen (as cited in

Gliner, et al., 2009). The correlations between the nursing and non-nursing scales, although significant with this large sample, were somewhat lower.

Table 4.5

Intercorrelations, Means, and Standard Deviations for Four CSQ Subscales (N = 858)

Variable	1	2	3	4	*M*	*SD*
1. Nursing career interest	--	.590**	.329**	.180**	28.47	6.62
2. Nursing career self-efficacy	--	--	.181**	.384**	38.46	7.50
3. Non-nursing career interest	--	--	--	.532**	21.43	7.52
4. Non-nursing career self-efficacy	--	--	--	--	20.84	6.92

**$p < .01$

Factor Analysis for CSQ Survey Items

Principal component analyses with varimax rotation were conducted separately on the two subscales, career interest and career self-efficacy, to determine the underlying constructs for the items of the Career Search Questionnaire. Principal component analysis with varimax rotation was first conducted on the career interest items. Two factors were requested based upon the fact that the items were designed to measure two constructs: nursing and non-nursing career interest. After rotation, the first factor accounted for 17.4% of the variance and the second factor accounted for 13.3%. Table 4.6 displays the items and factor loadings for the rotated factors.

Table 4.6

Factor Analysis Matrix for CSQ Career Interest Questions

Item	Factor Loading	
	1	2
Provide emotional and physical support (N)	.700	
Work with people who are different from me (N)	.674	
Work with people to find solutions to their problems (N)	.647	
People who express opinions different from mine*	.623	
Help people at end of life (N)	.556	
Lifelong learner (N)	.550	
Learn new terminology (N)	.544	
Figure out ways to do things better (N)	.536	
Empower others (N)	.534	
Health teaching (N)	.495	
Read research about my career field (N)	.478	
Plan projects for cutting timber and replacing forests (NN)		.610
Creative or persuasive writing (NN)		.554
Fine arts activities such as design or performance (NN)		.545
Taking auto mechanics course (NN)		.543
Organizational or business consultant (NN)		.536
Writing a novel or play (NN)		.535
Judge speed, distance and movement of objects (NN)		.520
Arrange and conduct demonstration parties in homes (NN)		.469
Prepare reports and insurance claim forms (NN)		.467
Clerical office activities (NN)		.368
Enjoy working in a research office or laboratory (NN)		.325

*Social desirability item

Note. Items loading <.300 were omitted for clarity. N means nursing interest; NN means non-nursing interest

Eleven items loaded onto the first factor, which indexed nursing career interest. Six of the items had strong loadings of .550 or greater. Note that all the items on the first factor were nursing except one which was the social desirability item. The second factor, which indexed

non-nursing career interest, had high loadings on the first two items with five additional items loading above .500. One item did not load onto either factor ("I am interested in a job where I make my own decisions").

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for the career interest subscale was .801. According to Field (2009), KMO values between 0.8 and 0.9 are great, indicating that the sample size was adequate for factor analysis. Bartlett's Test of Sphericity was significant at .000, indicating that "the correlations between variables are (overall) significantly different from zero" (Field, 2009, p. 648).

Principal component analysis with varimax rotation was next conducted on the career self-efficacy items. Two factors were requested based upon the survey design that the items were intended to measure two constructs: nursing and non-nursing career self-efficacy. After rotation, the first factor accounted for 20.22% of the variance and the second factor accounted for 13.57%. Table 4.7 displays the items and factor loadings for the rotated factors.

Fourteen items loaded onto the first factor, which indexed nursing career self-efficacy. Nine of the items had strong loadings of .550 or greater. The second factor, which indexed non-nursing career self-efficacy, had high loadings on the first four items of .637 or greater. One item did not load onto either factor ("Quit doing something because I think too little of my ability"), which was the social desirability item in this subscale.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for the career self-efficacy subscale was .857. As previously noted, KMO values between 0.8 and 0.9 are great, indicating that the sample size was adequate for factor analysis. Bartlett's Test of Sphericity was significant at .000.

Table 4.7

Factor Analysis Matrix for CSQ Career Self-Efficacy Questions

Item	Factor Loading	
	1	2
I believe that I can demonstrate concern for other's privacy, dignity (N)	.694	
I am capable of keeping my workplace safe for myself and others (N)	.670	
I believe I am capable of protecting others from unethical treatment (N)	.670	
I am able to tie information together to plan work activities (N)	.619	
I am able to be compassionate with ill people (N)	.617	
I am capable of communicating well even in stressful situations (N)	.609	
I am capable of being flexibly when things change on the job (N)	.576	
I am able to consider risks and benefits when planning goals (N)	.560	
I believe I could assign duties to other people effectively (N)	.555	
I am able to keep a healthy boundary between my work and life (N)	.526	
I am capable of learning technical skills to perform a job (N)	.508	
I am capable of understanding physiology (N)	.488	
I am capable of working with human blood and waste (N)	.426	
I am much better at working with people rather than things or ideas (NN)	.418	
I am capable of watching a panel board to generate electricity (NN)		.767
I believe I could convert business problems into numbers and symbols (NN)		.725
I am able to make some electrical repairs (NN)		.715
I believe I could judge the value of real estate (NN)		.637
I am able to use algebra to solve technical problems (NN)		.454
I believe I could create promotional ideas (NN)		.429
I believe I can interpret music (NN)		.411
I believe I can get people to do things my way (NN)		.344
I believe I could write speeches for people (NN)		.342
I am capable of conducting experiments to detect harmful bacteria (NN)		.328

Note. Items loading <.300 were omitted for clarity

Principal component analysis results for the interest and self-efficacy scales indicated that almost all items loaded onto two factors according to the designation of nursing or non-nursing identified by Roberts (2008). The one exception was the item, "working with people rather than

things or ideas," which loaded (.418) onto the nursing self-efficacy subscale rather than the non-nursing subscale.

Overall, these results strongly suggested that there are four concepts (nursing career interest, non-nursing career interest, nursing career self-efficacy and non-nursing career self-efficacy) measured using the CSQ instrument. All items loaded onto one column or factor in the rotated factor matrix, resulting in a "clean" factor analysis (Gliner, et al., 2009). It is also important to note that with one exception, all items loaded according to the nursing and non-nursing career interest and career self-efficacy CSQ items identified by Roberts.

Analysis of Research Questions

Relationship Between Interest and Self-Efficacy for Nursing Within Ethnic Groups

Research question 1. What relationship if any exists between interest in and self-efficacy for nursing as a career choice among Hispanic/Latino and non-Hispanic/Latino college students?

Two-tailed Pearson correlations were conducted to determine the relationships between the variables nursing career interest, nursing career self-efficacy, non-nursing career interest and non-nursing career self-efficacy for the Hispanic/Latino participants. Table 4.8 illustrates that all four pairs of variables were significantly correlated, but the size of the correlations varied. A positive, statistically significant correlation was found between nursing career interest and nursing career self-efficacy, $r = .598$ ($p < .01$), for Hispanic/Latino college students. According to Cohen (as cited in Gliner, et al., 2009), an r value of .5 is a large effect size and indicates a stronger than typical strength of relationship between the variables. The result of $r = .598$ indicated that there is a strong relationship between interest in and self-efficacy for nursing as a career choice among Hispanic/Latino college students.

A positive, statistically significant correlation was also determined between non-nursing career interest and non-nursing career self-efficacy, $r = .552$ ($p < .01$), for Hispanic/Latino college students. This correlation coefficient also indicated a strong relationship between these variables for Hispanic/Latino college students. It is important to note that the correlation coefficients were much lower between the nursing and non-nursing career interest and career self-efficacy subscales.

Table 4.8

Intercorrelations, Means, and Standard Deviations for Hispanic/Latino Students and Four CSQ Subscales (N = 207)

Variable	1	2	3	4	*M*	*SD*
1. Nursing career interest	--	.598**	.345**	.175**	28.85	6.60
2. Nursing career self-efficacy	--	--	.221**	.309**	38.42	7.25
3. Non-nursing career interest	--	--	--	.552**	22.70	7.42
4. Non-nursing career self-efficacy	--	--	--	--	21.00	6.36

**$p < .01$

Two-tailed Pearson correlations were also conducted with these variables for the non-Hispanic/Latino college students. A statistically significant correlation, $r = .590$ ($p < .01$), indicated a strong relationship between nursing career interest and nursing career self-efficacy. A statistically significant correlation was also determined between non-nursing career interest and non-nursing career self-efficacy, $r = .528$ ($p < .01$). The correlation coefficients were much lower between the nursing and non-nursing career interest and career self-efficacy subscales.

Intercorrelations, means and standard deviations for non-Hispanic/Latino students and the CSQ subscales are illustrated in Table 4.9.

Table 4.9

Intercorrelations, Means, and Standard Deviations for Non-Hispanic/Latino Students and Four CSQ Subscales (N = 643)

Variable	1	2	3	4	*M*	*SD*
1. Nursing career interest	--	.590**	.319**	.181**	28.31	6.65
2. Nursing career self-efficacy	--	--	.169**	.404**	38.47	7.60
3. Non-nursing career interest	--	--	--	.528**	20.96	7.51
4. Non-nursing career self-efficacy	--	--	--	--	20.78	7.09

**$p < .01$

Correlations for the two ethnic groups, Hispanic/Latino and non-Hispanic/Latino, were similar for the four CSQ subscales. Both groups had strong correlations between nursing career interest and nursing career self-efficacy, and between non-nursing career interest and non-nursing career self-efficacy. Correlations between the nursing and non-nursing subscales were much lower for both groups.

Relationship of Demographic Variables to Nursing Career Interest

Associational statistics were conducted to explore the relationship of selected demographic variables with interest in nursing as a career choice.

Research question 2. How do each of the following variables: gender, age, English as the primary language spoken in the home, parent college attendance, financial loans for college, and

number of completed college credits correlate with Hispanic/Latino college student interest and non-Hispanic/Latino student interest in nursing as a career choice?

Pearson product moment correlations were conducted to investigate the association of these demographic variables with interest in nursing as a career choice for Hispanic/Latino college students. The means, standard deviations and intercorrelations for the variables can be found in Table 4.10.

Table 4.10

Pearson Product-Moment Correlations Among Nursing Career Interest, Gender, Primary Language Spoken in the Home, Mother College Attendance, Father College Attendance, and Financial Loans for Hispanic/Latino College Students (N = 222)

Variable	2	3	4	5	6	7	8	*M*	*SD*
1. Nursing career interest	.122	.017	.058	-.038	.067	.232**	.285**	28.75	6.686
2. Gender	--	.077	.021	-.061	.067	.130	.031	.57	.496
3. Language	--	--	.236**	.243**	.260**	.161*	.011	.73	.443
4. Mother	--	--	--	.374**	-.106	-.070	-.146*	.34	.474
5. Father	--	--	--	--	-.058	-.007	-.103	.28	.452
6. Loans	--	--	--	--	--	.179**	.228**	.55	.498
7. Credits	--	--	--	--	--	--	.466**	3.44	2.147
8. Age	--	--	--	--	--	--	--	.36	.482

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

Nine of 28 pairs of variables were significantly, but modestly, correlated at $p < .01$, and two pairs of variables were significantly correlated at $p < .05$. Only two of seven demographic variables were significantly correlated with interest in nursing as a career. Credits completed was modestly positively correlated with interest in nursing as a career ($r = .232$). Age was also

modestly positively correlated with interest in nursing as a career choice by Hispanic/Latino college students (r = .285). According to Cohen (as cited in Gliner, et al., 2009), effect sizes of approximately .30 are considered medium or typical. Older students and students with more credits completed tended to have higher nursing career interest.

The Pearson product-moment correlation was also used to determine if there was an association among gender, English as the primary language spoken in the home, parent college attendance, and financial loans for college and interest in nursing as a career choice for non-Hispanic/Latino students. Five of 28 pairs of variables were significantly correlated at $p < .01$. Two more pairs of variables were significantly correlated at $p < .05$. Only two of seven variables, credits completed (r = .187) and gender (r = .182), were positively correlated with interest in nursing as a career. According to Cohen (as cited in Gliner, et al., 2009), these effect sizes are considered small or smaller than typical. Intercorrelations, means and standard deviations can be found in Table 4.11.

Table 4.11

Pearson Product-Moment Correlations for Nursing Interest, Gender, Primary Language Spoken in the Home, Mother College Attendance, Father College Attendance, and Financial Loans for Non-Hispanic/Latino College Students (N = 660)

Variable	2	3	4	5	6	7	8	*M*	*SD*
1. Nursing career interest	.182**	.062	-.052	.013	.071	.187**	.018	28.57	6.550
2. Gender	--	.047	-.046	-.033	.056	.092*	.014	.59	.492
3. Language	--	--	.125**	.024	.032	.060	-.078*	.94	.239
4. Mother	--	--	--	.352**	-.059	.006	-.002	.66	.474
5. Father	--	--	--	--	-.103**	.063	.011	.60	.491
6. Loans	--	--	--	--	--	.049	-.035	.64	.481
7. Credits	--	--	--	--	--	--	-.011	4.00	2.100
8. Age	--	--	--	--	--	--	--	.95	6.650

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

Results of the Pearson product moment correlations indicated that only one variable, credits completed, was significantly correlated with interest in nursing as a career choice by both Hispanic/Latino and non-Hispanic/Latino students. However, the effect size was small to medium for both groups of students, which suggested a weak but statistically significant relationship between the variables credits completed and interest in nursing as a career choice.

Relationship of Demographic Variables to Nursing Career Self-Efficacy

The relationship of selected demographic variables with nursing career self-efficacy was explored in this study. Associational statistics were used to determine if there was a significant relationship between the variables and nursing career self-efficacy.

Research Question 3. How do each of the following variables: gender, age, English as the primary language spoken in the home, parent college attendance, financial loans for college, and number of completed college credits correlate with Hispanic/Latino college student self-efficacy and non-Hispanic/Latino student self-efficacy for nursing as a career choice?

Pearson product moment correlations were conducted to investigate the association of these demographic variables with nursing career self-efficacy for Hispanic/Latino college students. The intercorrelations, means, and standard deviations can be found in Table 4.12.

Eight of 28 pairs of variables were significantly but modestly correlated at $p < .01$ and three more pairs of variables were significantly correlated at $p < .05$. Only two variables were positively correlated with nursing career self-efficacy. Credits completed was positively correlated with nursing career self-efficacy ($r = .290$). Age was also positively correlated with nursing career self-efficacy Hispanic/Latino college students ($r = .272$). According to Cohen (as cited in Gliner, et al., 2009), effect sizes of approximately.30 are considered medium or typical.

Table 4.12

Pearson Product-Moment Correlations for Nursing Career Self-Efficacy, Gender, Primary Language Spoken in the Home, Mother College Attendance, Father College Attendance, and Financial Loans for Hispanic/Latino College Students (N = 224)

Variable	2	3	4	5	6	7	8	*M*	*SD*
1. Nursing career self-efficacy	.078	.109	-.025	-.027	.099	.290**	.272**	38.58	7.388
2. Gender	--	.067	.025	-.043	.045	.126	.033	.58	.495
3. Language	--	--	.219**	.244**	.264**	.160*	.033	.74	.441
4. Mother	--	--	--	.354**	-.113	-.081	-.154*	.34	.476
5. Father	--	--	--	--	-.034	.006	-.089	.29	.453
6. Loans	--	--	--	--	--	.151*	.235**	.56	.498
7. Credits	--	--	--	--	--	--	.494**	3.43	2.136
8. Age	--	--	--	--	--	--	--	.35	.477

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

Pearson product-moment correlation was the statistic used to determine if there was an association among these demographic variables and nursing career self-efficacy for non-Hispanic/Latino students. Five of 28 pairs of variables were significantly correlated with nursing self-efficacy at $p < .01$. Four more pairs of variables were significantly correlated with nursing self-efficacy at $p < .05$. These findings are displayed in Table 4.13.

Table 4.13

Pearson Product-Moment Correlation for Nursing Career Self-Efficacy, Gender, Primary Language Spoken in the Home, Mother College Attendance, Father College Attendance, and Financial Loans for Non-Hispanic/Latino College Students (N = 656)

Variable	2	3	4	5	6	7	8	*M*	*SD*
1. Nursing career self-efficacy	.077*	.137**	.027	.028	.084*	.236**	.019	38.67	7.645
2. Gender	--	.047	-.037	-.022	.051	.106**	.014	.59	.492
3. Language	--	--	.114**	.013	.040	.056	-.078*	.94	.239
4. Mother	--	--	--	.348**	-.059	.002	-.002	.66	.474
5. Father	--	--	--	--	-.098*	.062	.011	.60	.490
6. Loans	--	--	--	--	--	.062	-.032	.63	.484
7. Credits	--	--	--	--	--	--	-.010	3.99	2.101
8. Age	--	--	--	--	--	--	--	.95	6.670

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

Two variables, language spoken at home and credits completed, correlated at $p < .01$ with nursing career self-efficacy. Credits completed was positively correlated with nursing career self-efficacy ($r = .236$). Language was also positively correlated with nursing career self-efficacy for non-Hispanic/Latino college students ($r = .137$). According to Cohen (as cited in Gliner, et al., 2009), effect sizes of about .10 are considered small or smaller than typical and about .3 are typical in the behavioral sciences, indicating a statistically significant but weak relationship between the four demographic variables and nursing self-efficacy.

The variables gender and financial loans to attend college were significantly correlated at $p < .05$ with nursing career self-efficacy. Gender ($r = .077$) and loans ($r = .084$) were positively correlated with nursing career self-efficacy; however both effect sizes were small, indicating a weak relationship among the variables. Thus, non-Hispanic/Latino students who were female,

spoke English at home, had loans, and had more credits completed tended to have higher nursing career self-efficacy.

Results of the Pearson product moment correlations indicated that only one variable, credits completed, was significantly correlated with nursing career self-efficacy by both Hispanic and non-Hispanic students. However, the effect size was small to medium for both groups of students, suggesting a modest relationship between the variables credits completed and self-nursing efficacy. Credits completed was the only variable predictive of both nursing career interest and nursing career self-efficacy for both Hispanic/Latino and non-Hispanic/Latino students.

Hispanic/Latino and Non-Hispanic/Latino Students and Interest in Nursing

An independent *t* test was conducted to analyze research question four to investigate if there was a difference between Hispanic/Latino and non-Hispanic/Latino college students in regard to their interest in a career in nursing. Interest in nursing was determined by using the items on the CSQ survey that corresponded to this variable.

Research Question 4. Do Hispanic/Latino college students differ significantly from non-Hispanic/Latino college students in their interest in nursing as a career choice?

Table 4.14 illustrates that there was no significant difference between Hispanic/Latino and non-Hispanic/Latino college student interest in nursing as a career choice $t(925) = -.812$, $p = .807$. Comparison of the group subscale means indicated that the average interest in nursing score was similar for Hispanic/Latino students ($M = 28.89$) and non-Hispanic/Latino students ($M = 28.48$). Levene's F statistic ($F = .06$) was not statistically significant (at Sig. < .05) so the assumption that the variances of the two groups were equal was not violated. The effect size *d*

was .06, which indicated a much smaller than typical relationship between the independent and dependent variables (Gliner, et al., 2009).

Table 4.14

Comparison of Hispanic/Latino Students and Non-Hispanic/Latino Students Interest in Nursing

Variable	*n*	*M*	*SD*	*t*	*df*	*p*	*d*
Interest in nursing				-.812	925	.81	.06
Hispanic/Latino	232	28.89	6.60				
Non-Hispanic/Latino	695	28.49	6.59				

Hispanic/Latino and Non-Hispanic/Latino Students and Self-Efficacy for Nursing

An independent *t* test was conducted to analyze research question five to investigate if there was a difference between Hispanic/Latino college students and non-Hispanic/Latino students self-efficacy for a career in nursing. Self-efficacy in nursing was determined by using the items on the CSQ survey that corresponded to this variable.

Research Question 5. Do Hispanic/Latino college students differ significantly from non-Hispanic/Latino college students in their self-efficacy for nursing as a career choice?

Results of this analysis indicated that there were no significant differences between Hispanic/Latino students and non-Hispanic/Latino students in their self-efficacy for nursing as a career choice. Comparison of the group subscale means indicated that the average self-efficacy for nursing scores were similar for both Hispanic/Latino students (M = 38.63) and non- Hispanic/Latino students (M = 38.47, t = .276, p = .72). Levene's F statistic (F= .13) was not statistically significant (at Sig. < .05) so the assumption that the variances of the two groups are equal was not violated. The effect size d was .02, which indicated a very much smaller than

typical relationship between the levels of the independent variable with respect to the dependent variable (Gliner, et al., 2009). Table 4.15 illustrates these results.

Table 4.15

Comparison of Hispanic/Latino Students and Non-Hispanic/Latino Students Self Efficacy for Nursing

Variable	*n*	*M*	*SD*	*t*	*df*	*p*	*d*
Nursing self-efficacy				-.276	920	.72	.02
Hispanic/Latino	232	38.63	7.31				
Non-Hispanic/Latino	690	38.47	7.66				

Additional Questions Added to the CSQ

The four questions added to the CSQ survey instrument informed the sixth research question. The sixth research question investigated student perceptions of factors that students believed would facilitate success in a nursing program.

Research Question 6. What factors are identified as necessary by Hispanic/Latino and non-Hispanic/Latino students to be successful in a nursing program?

The first added question asked students to rate their confidence level in being successful in eight courses. These courses are often required pre-requisite courses for a nursing program. Table 4.16 illustrates Hispanic/Latino student responses to this question. Table 4.17 shows the responses from non-Hispanic/Latino students.

Table 4.16

Percentage Hispanic/Latino Student Confidence in Completing Nursing Pre-requisite Courses (N = 240)

	Complete confidence	Much confidence	Moderate confidence	Very little confidence	No confidence	Mean
Human G & D	30.8	32.1	25.4	9.2	1.7	2.82
Intro psychology	35.4	22.5	28.8	8.8	4.6	2.75
English composition	27.9	34.2	24.6	9.2	3.3	2.75
Nutrition	32.1	27.1	21.7	14.6	4.6	2.68
Anatomy & Physiology	18.3	22.9	30.4	18.8	9.2	2.23
Statistics	15.8	21.3	30.4	18.8	13.8	2.07
Chemistry	9.6	21.7	27.1	25.0	16.3	1.83
Microbiology	10.4	20.0	25.8	23.3	20.0	1.77

Table 4.17

Percentage Non-Hispanic/Latino Student Confidence in Completing Nursing Pre-requisite Courses (N = 711)

	Complete confidence	Much confidence	Moderate confidence	Very little confidence	No confidence	Mean
Human G & D	33.2	32.1	24.1	7.5	2.5	2.87
Intro psychology	36.8	27.8	22.2	8.3	3.9	2.86
Nutrition	33.9	26.7	25.6	8.6	4.4	2.78
English composition	30.1	31.2	26.7	7.7	3.5	2.77
Anatomy & Physiology	24.2	26.0	26.7	13.1	9.6	2.42
Statistics	20.8	20.3	27.6	15.6	15.2	2.16
Chemistry	12.8	20.4	26.2	23.1	17.0	1.89
Microbiology	15.6	17.4	24.8	20.7	21.0	1.86

The courses rated the highest by both groups of students as having the greatest confidence in the ability to be successful were the Introduction to Psychology and Human Growth and Development courses. Microbiology and Chemistry were the courses cited by the greatest percentage of students in both groups as having the least amount of confidence to successfully complete.

Means for all courses were somewhat lower for the Hispanic/Latino students, indicating that overall these students reported less confidence in successful course completion. A notable difference between the two groups occurred with the Anatomy and Physiology course. For the non-Hispanic/Latino students, 50.2% reported complete or much confidence in completing this course. In comparison, just 41.2% of the Hispanic/Latino students indicated complete or much confidence in completing Anatomy and Physiology.

All students were then asked to answer a survey question about their interest in a healthcare career. Table 4.18 summarizes the responses to this question by the Hispanic/Latino and non-Hispanic/Latino students in the study. Of students thinking about a healthcare career, 52.5% (n = 126) of Hispanic/Latino students agreed or strongly agreed that they are considering a healthcare care compared with a similar 53.7% (n = 382) of non-Hispanic/Latino students.

Table 4.18

Interest in a Healthcare Career

	Hispanic/Latino students		Non-Hispanic/Latino students	
	n	%	*n*	%
Strongly agree	100	41.7	286	40.2
Agree	26	10.8	96	13.5
Unsure	37	15.4	78	11.0
Disagree	37	15.4	112	15.8
Strongly disagree	40	16.7	131	18.4
Blank	0	0.0	8	1.1
Total	240	100.0	711	100.0

Students who indicated they were thinking about a career in healthcare were asked to answer the next question on the survey, which was the third added question. This question asked students to identify which healthcare career(s) they were considering. A list of fifteen healthcare careers was provided with an option for students to identify other healthcare careers not listed. Registered nursing and physical therapist were the top two careers chosen by both Hispanic/Latino and non-Hispanic/Latino students. Medical transcription was the least chosen career by all students. Healthcare careers identified by students that were not listed in the survey included dietician (n = 35), physician assistant (n = 23) and athletic trainer (n = 11). Student responses to this question are illustrated in Table 4.19.

The fourth added question on the survey asked students to identify factors that were needed to be successful in a nursing program. Descriptive statistics were used to analyze student responses to this survey question. Although students were asked (in the directions for the

question), to rank their top three choices, many students did not rank their responses but instead marked their preferences by placing an X or check mark next to the responses. Therefore, all student responses were tabulated without taking into account student ranking of their choices. Table 4.20 illustrates the responses from the Hispanic/Latino students in the sample.

Shadowing a nurse at work to see what she or he does was the response chosen most frequently by the Hispanic/Latino students. The top four responses chosen by the Hispanic/Latino students (shadowing a nurse at work to see what she/he does, healthcare work experience, volunteer experience in healthcare and mentoring by nurses) indicated a common theme that students were seeking information about what nurses actually do in their workplace and desired to be exposed to the healthcare work environment through paid or volunteer experience. For purposes of comparison, the responses by the non-Hispanic/Latino students in the study sample are listed in Table 4.21.

Table 4.19

Interest in Specific Healthcare Career

Healthcare career	Hispanic/Latino students		Non-Hispanic/Latino students	
	n	%	*n*	%
Nursing - Registered	57	19.39	142	15.81
Physical therapist	35	11.90	103	11.47
Physician	28	9.52	58	6.46
Nursing - Practical	20	6.80	69	7.68
Pharmacist	19	6.46	41	4.57
Other	18	6.12	77	8.57
Medical assistant	15	5.10	47	5.23
Nursing assistant	15	5.10	45	5.01
Paramedic	15	5.10	57	6.35
Physical therapist assistant	14	4.76	35	3.90
Medical laboratory technologist	12	4.08	48	5.35
Dental hygienist	12	4.08	33	3.67
Occupational therapy assistant	12	4.08	41	4.57
Physician assistant	6	2.04	17	1.89
Pharmacy technician	5	1.70	14	1.56
Dietician	5	1.70	30	3.34
Chiropractic medicine	4	1.36	28	3.12
Medical transcription	2	0.68	13	1.45

Table 4.20

Factors Identified by Hispanic/Latino Students for Success in a Nursing Program

Factor	*n*	%
Shadowing a nurse	49	16.44
Healthcare work experience	39	13.09
Volunteer experience in healthcare	38	12.75
Mentoring by nurses	36	12.08
Financial assistance	32	10.74
Career advising	28	9.40
Family support	25	8.39
Child care assistance	20	6.71
Tutoring in science	18	6.04
Tutoring in math	12	4.03
Other	1	0.34
Total	298	100.00

Note. Some students checked more than one factor so *n* is the number of factors checked and % is the frequency that each factor was checked, not percent of students.

The non-Hispanic/Latino students identified the same top four factors needed to be successful in a nursing program as the Hispanic/Latino students. The listing of responses according to percentages of total responses was very similar between the two groups, Hispanic/Latino and non-Hispanic/Latino students, which indicated students had similar perceptions of factors they believed would help them be successful in a nursing program.

Table 4.21

Factors Identified by Non-Hispanic/Latino Students for Success in a Nursing Program

Factor	*n*	%
Healthcare work experience	130	16.46
Shadowing a nurse	117	14.81
Mentoring by nurses	96	12.15
Volunteer experience in healthcare	95	12.03
Career advising	87	11.01
Financial assistance	87	11.01
Family support	53	6.71
Child care assistance	46	5.82
Tutoring in science	45	5.70
Tutoring in math	30	3.80
Other	4	0.51
Total	797	100.00

Note. Some students checked more than one factor so *n* is the number of factors checked and % is the frequency that each factor was checked, not percent of students.

Supplemental Research Questions

Three supplemental research questions were added to determine whether the CSQ Nursing Career Interest and Nursing Career Self-Efficacy subscales gave a better prediction about interest in a healthcare career and specifically nursing than demographics alone. The demographic variable gender was of particular interest. Gender has traditionally been a factor in the choice of nursing as a career, with many more women than men in the profession. According to the most recent U.S. Census data (2013), 9.6% of nurses are male. Gender was correlated with nursing as a career choice by the non-Hispanic/Latino students in this study.

The following three additional research questions were added to the study:

Research Question 7. If gender differences in nursing as a career choice are controlled, do any of the other variables significantly add anything to the prediction over and above what gender contributes?

Research Question 8. How well do nursing career interest and nursing career self-efficacy predict consideration of a healthcare career?

Research Question 9. How well do nursing career interest and nursing career self-efficacy predict identification of nursing as a career choice?

Analysis of Supplemental Research Questions

Hierarchical linear regression was performed to determine if any other demographic variables added to the prediction of nursing as a career choice when gender differences were controlled.

Research Question 7. If gender differences in nursing as a career choice are controlled, do any of the other variables significantly add anything to the prediction over and above what gender contributes?

To explore how well these demographic variables predicted nursing as a career choice, after controlling for gender, a hierarchical linear regression was computed. When gender was entered alone, it statistically significantly predicted nursing as a career choice, $F(1,910) = 43.54$, $p < .01$, adjusted $R^2 = .045$, but this means that only 4.5% of the variance in nursing as a career choice could be predicted by knowing the student's gender, which is a small effect size according to Cohen (Gliner, et al., 2009). Little improvement occurred with the prediction when the other variables were added, adjusted $R^2 = .05$, R^2 change = .011, $F(6,904) = 1.82$, $p = .092$,

which means that the other variables did not add significantly to the prediction from gender. The beta weights and significance levels are presented in Table 4.22.

On step 2, $F = 7.83$, $p < .001$, indicating that this combination of predictors was significant, with gender having the highest beta (.205) but credits completed was also a significant predictor of step 2. This means that gender and credits completed both contributed significantly to predicting nursing as a career choice, even though the other demographic variables did not add to the prediction from gender alone.

Table 4.22

Hierarchical Multiple Regression Analysis Summary Predicting Nursing as a Career Choice from Demographic Variables When Controlling for Gender (N = 912)

Variable	*B*	*SE B*	β	R^2	Δ R^2
Step 1				.046**	.046**
Gender	.176	.027	.214**		
Constant	.105	.020			
Step 2				.057**	.011
Gender	.168	.027	.205**		
Age	-.002	.002	-.027		
Language	-.072	.043	-.056		
Mother	.007	.030	.008		
Father	-.015	.029	-.019		
Loans	.045	.027	.054		
Credits	.014	.006	.074*		
Constant	.097	.047			

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

Next, the ability of the two nursing subscales to predict student interest in a healthcare career was investigated.

Research Question 8. How well do nursing career interest and nursing career self-efficacy predict consideration of a healthcare career?

Simultaneous multiple regression was conducted to investigate if the CSQ subscales nursing career interest and nursing career self-efficacy predicted student consideration of a healthcare career. The means, standard deviations, and intercorrelations can be found in Table 4.23a. The combination of nursing career interest and nursing career self-efficacy was statistically significant, $F(2,901) = 106.53$, $p < .01$. The beta coefficients are presented in Table 4.23b. The adjusted $R^2 = .189$, a medium to large effect size. These results indicated that students who had higher CSQ Nursing Career Interest and had higher CSQ Nursing Career Self-Efficacy ratings were more likely to consider a healthcare career.

Table 4.23a

Means, Standard Deviations, and Intercorrelations for Nursing Career Choice and Predictor Variables (N = 904)

Variable	*M*	*SD*	Nursing interest	Nursing self-efficacy
Healthcare career choice	.54	.499	.389**	.392**
Predictor variables:				
1. Nursing career interest	28.55	6.59	--	.593**
2. Nursing career self-efficacy	38.54	7.53	--	--

***p* < .01

Table 4.23b

Simultaneous Multiple Regression Analysis Summary for CSQ Nursing Interest Subscale and CSQ Nursing Career Self-Efficacy Subscale Predicting Healthcare as a Career Choice (N = 904)

Variable	*B*	*SE B*	β	*t*	*p*
Nursing career interest	.018	.003	.241	6.481	<.001
Nursing career self-efficacy	.016	.002	.249	6.684	<.001
Constant	-.621	.082			

Note. Adjusted $R^2 = .189$; $F(2,901) = 106.53$, $p < .01$

To explore how well the CSQ Nursing Interest subscale and CSQ Nursing Career Self-Efficacy subscale predicted healthcare as a career choice, after controlling for gender, a hierarchical linear regression was computed. When gender was entered alone, it statistically significantly predicted healthcare as a career choice, $F(1,901) = 31.82$, $p < .01$, adjusted $R^2 = .033$, but this means that only 3.3% of the variance (a small effect size) in healthcare as a career choice could be predicted by knowing the student's gender. Significant improvement occurred with the prediction when the CSQ variables were added, adjusted $R^2 = .207$ (a medium to large effect size), R^2 change = .176, $F(2,899) = 99.89$, $p < .001$, which means that the nursing subscales did add significantly to the prediction from gender. The beta weights and significance values are presented in Table 4.23c. With this combination of predictors, nursing career self-efficacy had the highest beta (.259) but gender and nursing career interest were also significant predictors on step 2. This means that all three variables combined contributed significantly to predicting healthcare as a career choice.

Table 4.23c

Hierarchical Multiple Regression Analysis Summary Predicting Healthcare as a Career Choice from CSQ Nursing Interest Subscale and CSQ Nursing Career Self-Efficacy Subscale When Controlling for Gender (N = 903)

Variable	*B*	*SE B*	β	R^2	Δ R^2
Step 1				.033	.034
Gender	.187	.033	.185**		
Constant	.424	.026			
Step 2				.207	.176
Gender	.140	.030	.138**		
Nursing career interest	.016	.003	.212**		
Nursing career self-efficacy	.017	.002	.259**		

**$p < .01$ Adjusted R^2 on Step 2 = .207

The ability of the CSQ subscales nursing career interest and nursing career self-efficacy to predict identification of nursing, specifically, as a career choice was also explored in this study.

Research Question 9. How well do nursing career interest and nursing career self-efficacy predict interest in nursing as a career choice?

Simultaneous multiple regression was conducted to investigate if the CSQ subscales Nursing Career Interest and Nursing Career Self-Efficacy predicted identification of nursing as a career choice. The means, standard deviations, and intercorrelations can be found in Table 4.24a. The combination of nursing career interest and nursing career self-efficacy was statistically significant, $F(2,907) = 22.592$, $p < .01$. The beta coefficients are presented in Table 4.24b. This means that students who had higher nursing career self-efficacy ratings and also nursing career interest were more likely to consider a career in nursing. CSQ Nursing Career Interest was statistically significant as a predictor variable for nursing interest but the beta was only .087 and

p = .031. CSQ Nursing Career Self-Efficacy was also statistically significant as a predictor variable for nursing interest with a beta of .155 and p <.01. Note that the prediction of specifically nursing as a career interest from the CSQ had a lower adjusted R^2 = .045, (a small effect size), than the prediction of interest in any healthcare career (adjusted R^2 = .189).

Table 4.24a

Means, Standard Deviations, and Intercorrelations for Nursing Career Choice and Predictors Variables (N = 910)

Variable	*M*	*SD*	Nursing interest	Nursing self-efficacy
Nursing career choice	.21	.408	.179**	.206**
Predictor variables				
1. Nursing career interest	28.54	6.58	--	.594**
2. Nursing career self-efficacy	38.54	7.52	--	--

**p < .01

Table 4.24b

Simultaneous Multiple Regression Analysis Summary for CSQ Nursing Career Interest Subscale and CSQ Nursing Career Self-Efficacy Subscale Predicting Nursing as a Career Choice (N = 910)

Variable	*B*	*SE B*	β	*t*	*p*
Nursing career interest	.005	.002	.087	2.163	.031
Nursing career self-efficacy	.008	.002	.155	3.838	<.001
Constant	-.267	.072			

Note. Adjusted R^2= .045; F(2,907) = 22.592, p < .01

To explore how well the CSQ Nursing Interest subscale and CSQ Nursing Career Self-Efficacy subscale predicted nursing as a career choice, after controlling for gender, a hierarchical linear regression was computed. When gender was entered alone, it statistically significantly

predicted nursing as a career choice, $F(1,907) = 41.06$, $p < .01$, adjusted $R^2 = .042$. The adjusted R^2 indicates that 4.2% of the variance in nursing as a career choice could be predicted by knowing the student's gender. Significant improvement occurred in the prediction when the other variables were added, adjusted $R^2 = .08$ (a small to medium effect size), R^2 change = .04, $F(2,905) = 19.51$, $p < .001$, which means that the CSQ variables did add significantly to the prediction from gender. The beta weights and significance values are presented in Table 4.23c. With this combination of predictors, gender has the highest beta (.191) but nursing career self-efficacy was also a significant predictor on step 2, meaning that nursing career self-efficacy in combination with gender contributed significantly to predicting nursing as a career choice. Nursing career interest was not a significant predictor on step 2.

Table 4.24c

Hierarchical Multiple Regression Analysis Summary Predicting Nursing as a Career Choice from CSQ Nursing Interest Subscale and CSQ Nursing Career Self-Efficacy Subscale When Controlling for Gender (N = 909)

Variable	*B*	*SE B*	β	R^2	Δ R^2
Step 1				.043**	.043**
Gender	.173	.027	.208**		
Constant	.110	.021			
Step 2				.083**	.040**
Gender	.158	.027	.191**		
Nursing career interest	.003	.002	.050		
Nursing career self-efficacy	.009	.002	.165**		

**$p < .001$ Adjusted R^2 on Step 2 = .080

CHAPTER 5

DISCUSSION

A culturally-competent workforce is critical to provide healthcare that meets the needs of an increasingly diverse society. Leininger's transcultural nursing theory provided a framework to support improved health and well-being for patients through nursing outcomes based upon culturally congruent care (Chitty & Black, 2011). In addition, the importance of achieving a culturally-diverse healthcare and nursing workforce is well-documented in the literature (American Association of Colleges of Nursing, 2013; Cohen, Gabriel, & Terrill, 2002; The Joint Commission, 2010).

There is a significant disparity between the percentage of Hispanic/Latino registered nurses and the percentage of Hispanic/Latino individuals in the U.S. population. The percentage of Hispanic/Latino nursing students must increase so that the number of Hispanic/Latino nurses in the workforce more closely mirrors the demographics of the U.S. population. This study investigated Hispanic/Latino college students' consideration of nursing as a career choice with a focus on nursing career interest and nursing self-efficacy. Factors to be successful in a nursing program were also explored.

The CSQ survey instrument developed by Dr. Christine Roberts was used for this study with modifications in the demographic data section and the addition of four questions. The survey was administered to students enrolled in freshman and sophomore level courses at three comprehensive state public universities and one community college in a Western state that were HSI or seeking HSI designation. Factor analysis, Pearson product moment correlations, independent samples *t* tests, and multiple regressions were conducted to evaluate the relationships among the variables. Descriptive statistics were used to provide information about

the following factors: student feelings of confidence in completing courses that are often pre-requisites for application to a nursing program, student consideration of a healthcare career, specific healthcare careers students were interested in, and factors identified by students as necessary for their success in a nursing program.

The overall question that guided this research study was what factors influence Hispanic/Latino college students' consideration of nursing as a career choice? The discussion of study findings is organized into two sections. First, findings are discussed according to each research question investigated in the study. Findings are next discussed in relationship to related literature previously referenced in this study.

Findings Related to Research Questions

What relationship if any exists between interest in and self-efficacy for nursing as a career choice among Hispanic/Latino and non-Hispanic/Latino college students?

Results from this study demonstrated that there was a moderately strong relationship between nursing career interest and nursing career self-efficacy for both Hispanic/Latino and non-Hispanic/Latino students. The relationship between nursing career interest and nursing career self-efficacy was slightly stronger for the Hispanic/Latino students in the sample. Overall, these results indicated that students who were interested in nursing as a career choice also had a sense of confidence in completing associated nursing-related activities, which can be viewed as a favorable association since interest and a sense of self-efficacy for a career choice may support the likelihood of student success in a career.

It was also interesting to note that the means of the nursing career interest and career self-efficacy items were higher than the non-nursing career interest and career self-efficacy items means by the college students in this study. These results suggested that the nursing career items

were stronger with students, and also students felt more confident in their ability to be successful in activities associated with nursing than the non-nursing careers.

The study results also showed a moderately strong relationship between career interest and self-efficacy for non-nursing careers. These results along with the nursing career associations supported the factor analysis determination of two distinct factors related to career interest (nursing career interest and non-nursing career interest) and two distinct factors related to career self-efficacy (nursing career self-efficacy and non-nursing career self-efficacy) measured using the CSQ instrument. The strongest correlations were between two variable pairs: nursing career interest and nursing career self-efficacy, and non-nursing career interest and non-nursing career self-efficacy. The CSQ instrument appeared to be a useful tool to measure interest and self-efficacy for both nursing and non-nursing careers.

How do each of the following variables: gender, age, English as the primary language spoken in the home, parent college attendance, financial loans for college, and number of completed college credits correlate with Hispanic/Latino college student interest and non-Hispanic/Latino student interest in nursing as a career choice?

Two variables, age and credits completed, correlated with nursing career interest for Hispanic/Latino students. Both correlations were positive, which suggested that interest in nursing as a career choice increased with student age and more credits completed. A possible reason for this finding may be that Hispanic/Latino students might have a better ability to identify a college major after they have completed some college-level courses.

Five variables, gender, English as the primary language spoken in the home, mother and father college attendance, and financial loans for college were not correlated with nursing career interest for Hispanic/Latino students. It is particularly interesting to note that gender was not

significantly correlated with nursing career interest, which suggested that there was similar interest for both Hispanic/Latino male and female students in nursing as a career choice. This finding was surprising given that nursing is traditionally a female-dominated profession, suggesting that there might be as great an interest in the activities associated with nursing as a career choice among male Hispanic/Latino students as among female Hispanic/Latino students.

Another interesting finding was there was no correlation between English as the primary language spoken in the home and Hispanic/Latino student interest in nursing. This finding suggested that home language for Hispanic/Latino college students was not a factor related to student interest in the activities associated with nursing as a career choice as measured by the CSQ.

Results varied somewhat for the non-Hispanic/Latino students who participated in the study. Two variables were found to be associated with an interest in nursing, credits completed and gender. As with the Hispanic/Latino students, the number of credits completed was associated with interest in nursing. This possibly indicated that students identified interest in nursing after completing some college courses, perhaps giving students more information to clarify their areas of career interest.

Gender was significantly associated with interest in nursing for the non-Hispanic/Latino students. The association of gender with interest in nursing may be related to the fact that nursing is predominately a female-dominated profession. It is interesting to note that this finding differs from the Hispanic/Latino students, in which gender was not associated with interest in nursing.

How do each of the following variables: gender, age, English as the primary language spoken in the home, parent college attendance, financial loans for college, and number of

completed college credits correlate with Hispanic/Latino college student self-efficacy and non-Hispanic/Latino student self-efficacy for nursing as a career choice?

Two variables, age and credits completed, correlated with nursing career self-efficacy for the Hispanic/Latino students. Both correlations were positive, suggesting that nursing career self-efficacy increased with student age and more credits completed. These findings suggested that self-confidence in completing nursing career-related activities may increase with successful completion of college courses, perhaps contributing to an overall greater sense of academic self-confidence.

As with nursing career interest, there was no difference between male and female Hispanic/Latino students and their feelings of self-efficacy for activities associated with nursing as a career choice. There was also no statistically significant correlation between English as the primary language spoken in the home and nursing career self-efficacy, indicating that home language for Hispanic/Latino students was not related to their feelings of self-efficacy for accomplishing activities associated with a career in nursing.

Four variables, gender, English as the primary language spoken in the home, financial loans for college and credits completed were significantly correlated with nursing career self-efficacy for non-Hispanic/Latino students. However, the relationships between these variables and nursing self-efficacy were weak, which suggested that these variables may not be strongly associated with nursing career self-efficacy. Credits completed had the strongest relationship with nursing career self-efficacy, which perhaps indicated that students who had completed college courses felt more confident in their ability to be successful in activities associated with nursing.

Do Hispanic/Latino college students differ significantly from non-Hispanic/Latino college students in their interest in nursing as a career choice?

A potential reason for lower enrollment of Hispanic/Latino students in nursing programs could be a decreased interest in the activities associated with nursing as a career choice. In this study, no statistically significant difference was found between Hispanic/Latino and non-Hispanic/Latino college students in their interest in nursing as a career choice. This result suggested that lower enrollments of Hispanic/Latino students in nursing programs did not appear to be related to less interest in activities associated with nursing as a career choice by Hispanic/Latino students compared with non-Hispanic/Latino students.

Do Hispanic/Latino college students differ significantly from non-Hispanic/Latino college students in their self-efficacy for nursing as a career choice?

The results of this study showed no statistically significant difference between Hispanic/Latino and non-Hispanic/Latino college students and their self-efficacy for nursing as a career choice. This finding suggested both Hispanic/Latino and non-Hispanic/Latino college students had similar feelings of self-confidence in their ability to complete nursing activities. This result suggested that differences in feelings of self-efficacy for nursing as a career choice did not appear to be a factor related to the lower enrollment of Hispanic/Latino students in nursing programs in comparison with non-Hispanic/Latino students.

What factors are identified as necessary by Hispanic/Latino and non-Hispanic/Latino students to be successful in a nursing program?

Results from the four questions added to the CSQ survey instrument informed this question. The first additional survey question asked students to rate their level of confidence in completing seven courses that may be required pre-requisite courses to a nursing program: Anatomy and

Physiology, English Composition, Chemistry, Human Growth and Development, Microbiology, Nutrition, Introductory Psychology, and Statistics.

Overall, Hispanic/Latino and non-Hispanic/Latino students felt the most confident in their ability to successfully complete the non-science and non-math courses. They did not feel nearly as confident in being able to successfully complete the math and science courses. This finding was of concern given that math and science courses are often required for application to nursing programs, as well as important knowledge needed by both nursing students and practicing nurses. These findings reinforced the importance of a rigorous high school curriculum, preferably with a science and math focus, to help students feel confident in their ability to successfully complete college-level math and science courses that are necessary for admission to nursing programs.

The second additional question asked students if they were interested in a healthcare career. Slightly over half of both Hispanic/Latino and non-Hispanic/Latino students said they strongly agreed or agreed that they were considering a career in healthcare. Hispanic/Latino college students are clearly just as interested in pursuing a healthcare career as non-Hispanic/Latino students. Student responses to this question were congruent with the question asking students about their declared major. Healthcare, nursing and healthcare, non-nursing were two of the top three majors identified by both groups of students.

Third, students were asked to identify which healthcare careers they were interested in. Hispanic/Latino students indicated strong interest in professional careers including registered nurse, physical therapist, and physician as their top three preferences. Hispanic/Latino students had a strong interest in professional careers that in some instances require advanced degrees, such as physician. In fact, Hispanic/Latino students showed greater interest in these career

choices than non-Hispanic/Latino students. This was an unexpected finding in the study that is of significance for other healthcare programs, in addition to nursing, that are seeking to increase Hispanic/Latino student representation.

The fourth additional survey question asked students who indicated an interest in nursing as a healthcare career choice to identify factors they believed would help them be successful in a nursing program. Again, the results were very similar for both the Hispanic/Latino and non-Hispanic/Latino students for all factors. Shadowing a nurse at work to see what she/he does, healthcare work experience, volunteer experience in healthcare, and mentoring by nurses were the top four choices by both groups of students.

These top four factors clearly indicated that students believed the important facilitators for success in a nursing program centered on more information about the healthcare work environment and the role of the registered nurse. Shadowing a nurse at work and mentoring by a nurse involve establishing a professional relationship with a nurse to receive information and support in professional role development. Students considering nursing as a career choice may be unsure what the role of the nurse entails, and believe that direct contact with nurses would provide them with the opportunity to see first-hand the role of the registered nurse.

The other two top choices, healthcare work experience and volunteer experience in healthcare, pointed to the need for further information about the role of the nurse within that environment. Student responses indicated that direct exposure to the healthcare work environment was viewed as a facilitator to success in a nursing program. Students may also view healthcare work or volunteer experience as giving them additional practical knowledge and perhaps even skills to be successful in a nursing program, such as interacting with other healthcare workers and patients.

Childcare assistance and tutoring in math and science were the factors selected by the least number of students as needed to be successful in a nursing program. It is interesting to note that while students previously indicated in their responses to the first additional survey question that they did not feel confident in successfully completing math and science courses, tutoring in math and science were not identified in their top list of factors to be successful in a nursing program. Although students may not feel confident in their ability to be successful in math and science courses, they may believe that strategies other than tutoring may help them be successful, such as faculty assistance or study groups.

Although financial assistance was identified by both Hispanic/Latino and non-Hispanic/Latino students as necessary to successfully complete a nursing program, it was not as one of the top four factors. Hispanic/Latino and non-Hispanic/Latino students viewed mentoring and role development as more important than financial assistance to be successful in a nursing program. Perhaps the students in the study had previously addressed the issue of financing their education since they were enrolled in college at the time of this study, and therefore would have needed to determine financial resources to attend college.

Following the analysis of the original six research questions, three supplemental research questions were added to the study. There were two purposes for the addition of these questions. The first purpose was to determine if demographic variables added to the prediction of nursing career if the variable gender was controlled. The second purpose was to determine if the CSQ nursing career interest and nursing career self-efficacy subscales predicted interest in a healthcare career and a nursing career. These questions would further inform the use of the CSQ as an advising tool with students to determine interest in healthcare and specifically nursing careers.

If gender differences in nursing as a career choice are controlled, do any of the other variables significantly add anything to prediction over and above what gender contributes?

Nursing has traditionally been a female-dominated profession. When gender was entered alone, it was found to be statistically significant as a predictor of nursing as a career choice, although the effect size was small. When gender was controlled as a predictor variable, the variable of credits completed was also found to be statistically significant.

This additional finding suggested that even when controlling for gender, the other demographic variables included in the study (with the exception of credits completed) did not predict nursing as a career choice. There are several possible interpretations of these findings. First, results indicated that the demographic variables related to a students' home background were not associated with prediction of nursing as a career choice. These variables included parent college attendance, and whether English is the primary language spoken in the home. This finding is of interest since although these variables have been associated with student enrollment in college, they were not predictive of student interest in nursing as a career choice.

Another possible interpretation of these findings was that interest in nursing as a career choice is attractive to many college students with varying backgrounds and individual characteristics. The prediction of nursing career interest in relationship to demographic variables (other than gender and credits completed) may not be associated with certain demographic variables, which has implications for recruitment efforts of prospective nursing students. It is also possible that prediction of interest in nursing as a career choice may be related to factors that were not measured in the CSQ instrument, again with the exception of gender and credits completed.

How well do nursing career interest and nursing career self-efficacy predict consideration of a healthcare career?

The CSQ instrument appeared to be a useful tool to determine student consideration of a healthcare career in a broad sense, not only an interest in nursing. There are several possible reasons for this finding. Survey items identified for nursing as a career choice were likely similar to those of other healthcare careers. For example, the survey items of learning new words or terminology and working with people to find the best possible solutions to their problems are not only relevant to nursing but also to other healthcare careers, such as physicians and pharmacists. This finding suggested the challenge in identifying activities and interests that are specific to nursing, a profession that has a very broad scope of skills and associated activities.

The combination of nursing career interest and nursing career self-efficacy items in the CSQ may in fact be more indicative of overall student interest in a healthcare career, not necessarily only nursing. This finding suggested that the CSQ instrument could be used as a career advising tool to determine if a student has an overall interest in a healthcare career in addition to an interest in nursing.

How well do nursing career interest and nursing career self-efficacy predict interest in nursing as a career choice?

To answer this question, the two CSQ nursing subscales were considered as predictor variables for student interest in nursing as a career choice. After controlling for gender, two variables, gender and nursing career self-efficacy, predicted interest in nursing. This finding suggested that the CSQ nursing self-efficacy subscale was a better predictor of nursing career interest than the CSQ nursing interest subscale. This was an interesting finding since the CSQ nursing interest subscale was developed to determine student interest in nursing as a career

choice. This finding could be due to some multicollinearity of the two subscales, since both subscales were highly correlated.

Analysis of the last two supplemental research questions suggested that the CSQ instrument appeared to better predict interest in a healthcare career rather than specifically nursing. This was an unexpected finding that has implications for how the CSQ instrument can be used for career advising. In fact, the CSQ may be better suited for overall healthcare career advising rather than as a tool to determine specific nursing career interest.

Findings Related to the Literature

Results of this study were also analyzed in relationship to identified literature. Study findings were compared with previous research and related literature. This analysis revealed both congruencies with and differences between study results and previously-reported literature.

A comparison of study findings with literature related to college enrollment of Hispanic/Latino students reinforced the importance of high school academic preparation and student confidence in the ability to successfully complete college courses. Several authors (Arbona & Nora, 2007; Gándara, 2010; Nuñez & Kim, 2012) discussed the importance of a strong high school curriculum to prepare students for college. In this study, Hispanic/Latino students reported a lack of confidence in their ability to successfully complete college math and science courses. This finding reinforced the need for rigorous high school academic tracks for Hispanic/Latino students so they feel well-prepared to be successful in college courses, particularly math and science courses, which are often required for nursing and other healthcare careers.

Linguistic acculturation was identified in the literature as a factor related to college enrollment of Hispanic/Latino students, with linguistic acculturation identified as a barrier to

college enrollment (Becerra, 2010). There were two relevant factors in the study related to linguistic acculturation. First, all four research sites were designated as HSI institutions or seeking HSI designation, suggesting higher enrollments of Hispanic/Latino students. In addition, the majority of Hispanic/Latino students in the study (72.5%, $n = 174$) reported that English was the primary language spoken in the home. In this study, English as the primary language spoken in the home was not associated with nursing career interest or nursing career-self-efficacy by the Hispanic/Latino students, suggesting that home language use was not related to student consideration of nursing as a career choice.

Another barrier identified in the literature for Hispanic/Latino college enrollment was financial constraints (Brown, Santiago, & Lopez, 2003; Oseguera, Locks, & Vega, 2009). Financial factors have also been identified as barriers for Hispanic/Latino nursing students (Alicea-Planas, 2009; Bond, Gray, Baxley, Cason, & Denke, 2008; Herrera, 2012). However, financial assistance was not identified as a priority item by students to be successful in a nursing program. This finding suggested that students had already arranged for financial assistance to attend college and did not perceive financial constraints to be as important as other factors for success in a nursing program.

Hispanic/Latino students' choice of a college major and career development was another area for comparison of study findings with reported literature. One study finding, the importance of mentoring by nurses, was identified as a priority factor by Hispanic/Latino students for success in a nursing program. This finding is congruent with the importance of mentoring and role modeling in the career choice process for Hispanic/Latino students noted in the literature (Perrone, Zanardelli, Worthington, & Chartrand, 2002; Shinnar, 2007). Mentoring and the need for role models have also been identified as an important factor for success by Hispanic/Latino

nursing students (Bond, et. al, 2008; Hererra, 2012). The importance of mentoring and role models for Hispanic/Latino students interested in nursing as a career choice is strongly supported by both the literature and study results.

Another area for comparison between study findings and the literature was related to the consideration of the types of healthcare careers identified by Hispanic/Latino students. Students in this study showed a strong interest in professional careers including nursing, medicine, physical therapy and pharmacy. The Hispanic/Latino ethnic group has been underrepresented in many professional occupations and overrepresented in lower-paying jobs (Fouad & Byers-Winston, 2005). This study finding indicated that there was strong interest among Hispanic/Latino students in pursuing professional healthcare careers.

The lack of gender differences related to interest in nursing as a career choice among Hispanic/Latino students was a surprising finding in this study. The importance of traditional values held by the Hispanic/Latino culture has been discussed in the literature (Fouad, 1994). One of these values is machismo, which centers on maleness and the position of men as providers for their families. In a study conducted by Evans (2008), Hispanic/Latino males stated they had experienced some resistance from their traditional culture about their decision to choose nursing as a career.

Findings from this study suggested that a shift may be occurring in the Hispanic/Latino culture resulting in similar interest among both Hispanic/Latino male and female students for activities associated with nursing as a career choice. The process of acculturation has been identified as impacting traditional Hispanic/Latino values on individual behavior (Fouad, 1994). This was a very promising finding that has implications to both increase the number of male nurses and also increase the overall number of Hispanic/Latino nursing students and nurses.

Summary

Overall, the findings from this study showed that Hispanic/Latino students have a strong interest in nursing as a career choice. There was little difference between Hispanic/Latino and non-Hispanic/Latino college student interest in and self-efficacy for nursing. Nursing career interest and nursing career-self-efficacy as determined by the CSQ subscales were similar for all students. Gender was not associated with Hispanic/Latino student interest in nursing as a career choice, an encouraging finding related to the recruitment of male Hispanic/Latino students. The importance of mentoring and exposure to the healthcare work environment were identified by students as very important to their success in a nursing program.

Implications for Practice

Results from this study can be used in several ways by high school counselors, college and university academic advisors, and nursing education programs. First, the CSQ instrument can be used as a career screening and advising tool for students, particularly those who might be considering a healthcare or nursing career. The instrument is relatively short and easy to administer, and provides initial feedback for a student in the career decision-making process. This questionnaire could be provided to students by high school counselors and college and university academic advisors who work with students making career choices.

As Roberts (2008) suggested, a scoring matrix could be developed using the questionnaire items to identify students with a strong interest in nursing and strong self-efficacy for nursing-related tasks. This would achieve two purposes related to career advising. First, completion of the CSQ instrument would help to confirm student interest in and self-efficacy for a healthcare or nursing career choice for those students considering nursing or healthcare careers. Students with survey scores that did not indicate healthcare or nursing career interest or self-efficacy could be

provided information about other career options. Second, results of the CSQ survey could identify students who might be interested in nursing but had not previously thought about nursing as a career choice. This could be particularly helpful for students who are still in the career decision-making process.

Results of this study reinforced the importance of the high school academic experience in the career advising process. Study results supported the need for a rigorous high school curriculum to prepare students to be successful in college, particularly in math and science courses.

Information from this study can also be used by nursing education to support the goal of a diverse nursing workforce. With the knowledge that many Hispanic/Latino college students are interested in the activities related to nursing, nursing programs can provide outreach programs to these students about nursing as a career choice. Nursing program information materials, including web pages and brochures, could be designed to include images of both male and female Hispanic/Latino students.

There are several additional strategies that nursing programs can take to facilitate Hispanic/Latino student interest in nursing as a career choice. Mentoring programs could be established for prospective Hispanic/Latino nursing students. Nursing programs could consider healthcare work and volunteer experience in program admission criteria as a method to increase applicant knowledge of the role of registered nurses.

Recommendations for Further Studies

Study findings indicated that Hispanic/Latino college students have a strong interest in and self-efficacy for the activities associated with nursing as a career choice. One difference between the Hispanic/Latino and non-Hispanic/Latino students was that gender was not a

statistically significant variable for the Hispanic/Latino students. Future research could explore Hispanic/Latino male college students' attitudes about nursing as a career choice.

Future research could be conducted to determine if Hispanic/Latino students are actually applying to nursing programs, and if so, were they offered admission. Factors that facilitate acceptance for these students to a nursing program could be identified to determine if there are additional strategies that would promote a successful application process.

There are several additional groups that could be included in future research studies to determine consideration of nursing as a career choice. Future research could include more students from community colleges. Hispanic/Latino students often begin their higher education pathways at a community college. Surveying a greater number of Hispanic/Latino community college students could provide additional information about nursing career interest and self-efficacy as well as factors that these students believe would help them be successful in a nursing program. These results would provide a comparison between students enrolled at community colleges and four year institutions. In addition, Hispanic/Latino students attending private not-for-profit and proprietary for-profit institutions could be included in future research to determine if there are similarities or differences in those populations of students in comparison with students attending public universities or community colleges.

Future research could also include current Hispanic/Latino healthcare providers who are employed in related occupations, including medical assistants, nursing assistants, and practical nurses, to determine consideration of nursing as a career choice. Perceived facilitators and barriers to a career in nursing could be determined for this population. This research could provide insight into strategies that might promote nursing as a career choice for individuals in entry-level healthcare occupations.

Finally, the CSQ instrument could be tested with high school students. Because the readability level of the CSQ instrument was determined to be 8.2 using the Flesch-Kincaid Grade Level Index (Roberts, 2008), the instrument could be administered to high school students to determine their interest in and self-efficacy for nursing as a career choice. Additionally, it would be useful to collect data from high school seniors about factors they believed necessary to help them be successful in a nursing program as nursing programs design and implement pre-college programs to facilitate student success.

Conclusion

Findings from this study indicated that Hispanic/Latino students were just as interested in and had high feelings of confidence about activities associated with nursing as a career choice when compared with non-Hispanic/Latino college students. Very few statistically significant differences were found in the data analysis for either group of students. One exception was that gender was not statistically significant for Hispanic/Latino students, suggesting that gender was not a predictive variable for interest in activities associated with nursing among Hispanic/Latino students.

This study also confirmed the validity and reliability of the CSQ instrument as an advising and screening tool for students who are in their career decision-making process. The CSQ questionnaire is easy to administer and could be used in a variety of academic students by advisors and faculty who work with students making career choices. The questionnaire appeared to differentiate well between nursing and non-nursing careers. In fact, the CSQ instrument may have greater significance to identify interest in a healthcare career, not limited to nursing.

Overall, the findings for this study indicated that Hispanic/Latino students were just as interested in and had feelings of confidence about activities associated with nursing as a career

choice as compared with non-Hispanic/Latino students. Shadowing a nurse at work to see what she/he does, healthcare work experience, volunteer experience in healthcare and mentoring by nurses were identified by Hispanic/Latino students as the factors most important to be successful in a nursing program. This study provided evidence-based results that can be used by high school counselors, college and university academic advisors, and nursing programs to successfully promote nursing as a career choice by Hispanic/Latino college students.

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APPENDIX A: CAREER SEARCH QUESTIONNAIRE WITH NURSING, NON-NURSING, AND SOCIAL DESIRABILITY ITEMS

Please respond to the following statements according to how you see yourself doing these tasks. Use this scale to indicate your interest:

No interest…..Little interest…..Neutral…..Some interest…..Much interest

	No interest	**Little interest**	**Neutral**	**Some interest**	**Much interest**
1. I would enjoy working in a research office or laboratory. (NN)					
2. I am interested in learning new words and terminology to perform a job. (N)					
3. I am interested in fine arts activities such as design or performance. (NN)					
4. I am interested in performing clerical office activities. (NN)					
5. I enjoy working with other people to find the best possible solutions to their problems. (N)					
6. I am interested in writing a novel or play. (NN)					
7. I enjoy thinking about things I have done and figuring out ways to do them better. (N)					
8. I am interested in people who express opinions very different from my own. (SD)					
9. I would like to advance my career by being a lifelong learner, even if it requires additional classes. (N)					
10. I am interested in planning projects for cutting timber and replanting forests. (NN)					
11. I would like to read research about my career field. (N)					
12. I am interested in arranging and conducting demonstration parties in people's homes. (NN)					

Please respond to the following statements according to how you see yourself doing these tasks.

	No interest	**Little interest**	**Neutral**	**Some interest**	**Much interest**
13. I am interested in preparing reports and insurance-claim forms for customers. (NN)					
14. I am interested in working with people who are quite different than me. (N)					
15. I am interested in providing emotional and physical support for a person who is about to undergo a stressful procedure. (N)					
16. I am interested in creative or persuasive writing. (NN)					
17. I am interested in helping people who are approaching the end of their life. (N)					
18. I would enjoy acting as an organizational or business consultant. (NN)					
19. I am interested in a job where I can judge the speed, distance, and movement of objects. (NN)					
20. I am interested in teaching people about their health. (N)					
21. I am interested in taking an auto mechanics course. (NN)					
22. I am interested in a job where I can empower other people. (N)					
23. I am interested in a job where I make my own decisions. (NN)					

For each of the following questions, indicate your level of confidence that you would be able to accomplish these activities. Use this scale to indicate your confidence:

No confidence at all…..Very little confidence…..Moderate confidence…..Much confidence…..Complete confidence

	No confidence at all	**Very little confidence**	**Moderate confidence**	**Much confidence**	**Complete confidence**
1. I am able to tie information together that I have collected to plan my work activities. (N)					
2. I believe I could write speeches for people. (NN)					
3. I am able to consider realistic risks and benefits when planning goals for other people. (N)					
4. I believe I could judge the value of real estate. (NN)					
5. I am able to make some electrical repairs. (NN)					
6. I am able to be compassionate with ill people. (N)					
7. I am able to use algebra to solve technical problems. (NN)					
8. I am capable of communicating well even in stressful situations. (N)					
9. I believe I could convert business problems into numbers and symbols. (NN)					
10. I believe that I can demonstrate concern for other people's privacy and dignity. (N)					
11. I am able to keep a healthy boundary between my work and my own life. (N)					
12. I am capable of keeping my workplace safe for myself and others. (N)					
13. I believe I could create promotional ideas. (NN)					

For each of the following questions, indicate your level of confidence that you would be able to accomplish these activities.

	No confidence at all	**Very little confidence**	**Moderate confidence**	**Much confidence**	**Complete confidence**
14. I believe I could assign duties to other people effectively. (N)					
15. I am capable of watching a panel board and adjusting the throttle and valves to generate electricity. (NN)					
16. I am capable of being flexible when things change on the job. (N)					
17. I believe I can interpret music using knowledge of harmony, melody, and rhythm. (NN)					
18. I am capable of working with blood or human body wastes. (N)					
19. I believe I am capable of protecting others from unethical treatment. (N)					
20. I am capable of learning technical skills to perform a job. (N)					
21. I would quit doing something because I think too little of my ability. (SD)					
22. I believe I can get people to do things my way. (NN)					
23. I am much better at working with people than with things or ideas. (NN)					
24. I am capable of understanding physiology. (N)					
25. I am capable of conducting experiments to detect the presence of harmful bacteria in the environment. (NN)					

Note. (N) denotes Nursing, (NN) denotes Non-Nursing, (SD) denotes Social Desirability.

APPENDIX B: CONSENT FORM

Consent to Participate in a Research Study
Colorado State University

TITLE OF STUDY: Career Interest and Self-Efficacy Among College Students

PRINCIPAL INVESTIGATOR: DR. LINDA KUK, PH.D. SCHOOL OF EDUCATION
Linda.Kuk@ColoState.edu

CO-PRINCIPAL INVESTIGATOR: LINDA STROUP, PH.D. STUDENT, SCHOOL OF EDUCATION, Linda.Stroup@ColoState.edu

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? You are invited to participate as a student enrolled in a freshman or sophomore level college course.

WHO IS DOING THE STUDY? The study is being conducted by Linda Stroup under the direction of Dr. Linda Kuk.

WHAT IS THE PURPOSE OF THIS STUDY? The purpose of this study is to survey college students about their career interests and career self-efficacy (belief in being capable of complete career-related tasks) with a focus on healthcare careers.

WHAT WILL I BE ASKED TO DO? Each participant will be asked to complete one questionnaire. It is estimated that it will take approximately 15 minutes to complete the questionnaire.

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY? There are no known reasons not to take part in this study.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

- There are no known risks associated with completion of the questionnaire.
- It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

ARE THERE ANY BENEFITS FROM TAKING PART IN THIS STUDY? There is no known benefit from participating in this study, but you may find out more about your interest in available career choices and career self-efficacy. This information can be discussed with your advisor and may help you in making your own career decision. The overall benefit for conducting this research is to obtain information that colleges and universities can use to provide advising and other services to help students make best career choice decisions and develop ways to help students feel more confident about their ability to be successful in college, especially those students thinking about a career in healthcare.

DO I HAVE TO TAKE PART IN THE STUDY? Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

WHO WILL SEE THE INFORMATION THAT I GIVE? This study is anonymous. For this study, we are not obtaining your name or other identifiable data from you, so nobody (not even the research team) will be able to identify you or your data. We may be asked to share the questionnaires for audit purposes with the CSU Institutional Review Board ethics committee, if necessary.

WHAT IF I HAVE QUESTIONS?
Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigators, Dr. Linda Kuk at Linda.Kuk@ColoState.edu or Linda Stroup at Linda.Stroup@ColoState.edu. If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator at 970-491-1655. We will give you a copy of this consent form to take with you.

By marking the Agree box below, I acknowledge that:

- I am 18 years of age or older
- I voluntarily agree to participate in this study with the knowledge that I am free to withdraw from participation at any time without penalty
- I have read the above information

If you do not wish to participate in this study, please decline participation by marking the disagree box.

- ☐ Agree
- ☐ Disagree

APPENDIX C: SURVEY INSTRUMENT

Career Search Questionnaire

Demographic Questions

What is your gender? ____ Male ____ Female

What is your age? ____ years

What is your primary race/ethnicity?

____ African American/Black ____ Hispanic/Latino

____ American Indian/Alaska Native ____ Asian

____ Native Hawaiian/Pacific Islander ____ White

____ Other, please specify _____

Is English the primary language spoken in home?..... ____yes ____no

Did your mother attend college?..... ____yes ____no

Did your father attend college?..... ____yes ____no

Are you taking out financial loans to go to college?..... ____yes ____no

How many college credits have you completed? _____

What is your college major at this time?

____ automotive industry service

____ business (accounting, economics, management)

____ computer science

____ criminology/criminal justice

____ engineering

____ education

____ fine arts (art, dance, music, painting, theater)

____ healthcare, non-nursing

____ healthcare, nursing

____ humanities (communication, English, foreign language, history, philosophy)

____ natural sciences (astronomy, biology, chemistry, physics)

____ psychology

____ social work/sociology

____ undeclared

Other _____

What type of college are you attending now? _____Community college

_____Four year university

Career Search Questionnaire

Please respond to the following statements according to how you see yourself doing these tasks. Use this scale to indicate your interest:

No interest…..Little interest…..Neutral…..Some interest…..Much interest

	No interest	**Little interest**	**Neutral**	**Some interest**	**Much interest**
1. I would enjoy working in a research office or laboratory.					
2. I am interested in learning new words and terminology to perform a job.					
3. I am interested in fine arts activities such as design or performance.					
4. I am interested in performing clerical office activities.					
5. I enjoy working with other people to find the best possible solutions to their problems.					
6. I am interested in writing a novel or play.					
7. I enjoy thinking about things I have done and figuring out ways to do them better.					
8. I am interested in people who express opinions very different from my own.					
9. I would like to advance my career by being a lifelong learner, even if it requires additional classes.					
10. I am interested in planning projects for cutting timber and replanting forests.					
11. I would like to read research about my career field.					
12. I am interested in arranging and conducting demonstration parties in people's homes.					

Please respond to the following statements according to how you see yourself doing these tasks.

	No interest	**Little interest**	**Neutral**	**Some interest**	**Much interest**
13. I am interested in preparing reports and insurance-claim forms for customers.					
14. I am interested in working with people who are quite different than me.					
15. I am interested in providing emotional and physical support for a person who is about to undergo a stressful procedure.					
16. I am interested in creative or persuasive writing.					
17. I am interested in helping people who are approaching the end of their life.					
18. I would enjoy acting as an organizational or business consultant.					
19. I am interested in a job where I can judge the speed, distance, and movement of objects.					
20. I am interested in teaching people about their health.					
21. I am interested in taking an auto mechanics course.					
22. I am interested in a job where I can empower other people.					
23. I am interested in a job where I make my own decisions.					

For each of the following questions, indicate your level of confidence that you would be able to accomplish these activities. Use this scale to indicate your confidence:

No confidence at all…..Very little confidence…..Moderate confidence…..Much confidence…..Complete confidence

	No confidence at all	**Very little confidence**	**Moderate confidence**	**Much confidence**	**Complete confidence**
1. I am able to tie information together that I have collected to plan my work activities.					
2. I believe I could write speeches for people.					
3. I am able to consider realistic risks and benefits when planning goals for other people.					
4. I believe I could judge the value of real estate.					
5. I am able to make some electrical repairs.					
6. I am able to be compassionate with ill people.					
7. I am able to use algebra to solve technical problems.					
8. I am capable of communicating well even in stressful situations.					
9. I believe I could convert business problems into numbers and symbols.					
10. I believe that I can demonstrate concern for other people's privacy and dignity.					
11. I am able to keep a healthy boundary between my work and my own life.					
12. I am capable of keeping my workplace safe for myself and others.					
13. I believe I could create promotional ideas.					

For each of the following questions, indicate your level of confidence that you would be able to accomplish these activities.

	No confidence at all	**Very little confidence**	**Moderate confidence**	**Much confidence**	**Complete confidence**
14. I believe I could assign duties to other people effectively.					
15. I am capable of watching a panel board and adjusting the throttle and valves to generate electricity.					
16. I am capable of being flexible when things change on the job.					
17. I believe I can interpret music using knowledge of harmony, melody, and rhythm.					
18. I am capable of working with blood or human body wastes.					
19. I believe I am capable of protecting others from unethical treatment.					
20. I am capable of learning technical skills to perform a job.					
21. I would quit doing something because I think too little of my ability.					
22. I believe I can get people to do things my way.					
23. I am much better at working with people than with things or ideas.					
24. I am capable of understanding physiology.					
25. I am capable of conducting experiments to detect the presence of harmful bacteria in the environment.					

Please answer the following questions:

1. What is your confidence level in being successful in the following courses:

	No confidence at all	**Very little confidence**	**Moderate confidence**	**Much confidence**	**Complete confidence**
Anatomy and physiology					
English composition					
Chemistry					
Human Growth and Development					
Microbiology					
Nutrition					
Introductory psychology					
Statistics					

2. I am thinking about a healthcare career.

_____ Strongly agree _____ Agree _____ Unsure _____Disagree _____Strongly Disagree

(Note: Please answer the following two questions if you are thinking about a career in healthcare. If you are not thinking about a career in healthcare, you can stop here.)

3. If I am thinking about a career in healthcare, I am considering the following career(s) (Check all that apply):

_____ Chiropractic medicine
_____ Dental hygienist
_____ Medical assistant
_____ Medical laboratory technologist
_____ Medical transcription
_____ Nursing – Practical
_____ Nursing - Registered
_____ Nursing assistant
_____ Occupational therapy assistant
_____ Paramedic
_____ Pharmacist
_____ Pharmacy technician
_____ Physical therapist
_____ Physical therapist assistant
_____ Physician
_____ Other: _____

4. If you are thinking about nursing as a career, what do you need to be successful in a nursing program? (please rank your top three choices):

_____ Career advising information

_____ Child care assistance

_____ Emotional and moral family support

_____ Financial assistance

_____ Healthcare work experience

_____ Mentoring by nurses

_____ Tutoring in math

_____ Tutoring in science

_____Shadowing a nurse at work to see what she/he does

_____Volunteer experience in healthcare

_____Other: _____

APPENDIX D: IRB APPROVAL LETTERS

Colorado State University

Research Integrity & Compliance Review Office
Office of Vice President for Research
Fort Collins, CO 80523-2011
(970) 491-1553
FAX (970) 491-2293

Date: December 19, 2012

To: Dr. Linda Kuk, School of Education
Linda Stroup, School of Education

From: Janell Barker, IRB Coordinator

Re: Career Interest and Self-Efficacy among College Students

IRB ID: 140-13H **Review Date:** December 19, 2012

The Institutional Review Board (IRB) Coordinator has reviewed this project and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b)(2): Research involving the use of educational tests,….survey procedures, interview procedures or observation of public behavior, unless: a) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects.

The IRB determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as proposed in the Exempt application**, including obtaining and documenting (signed) informed consent if stated in your application.
- **Any modification of this research should be submitted to the IRB Coordinator through an email prior to implementing any changes**, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB protocol will need to be submitted and approved before proceeding with data collection.
- **Please notify the IRB Coordinator if any problems or complaints of the research occur.**

Please note that you must submit all research involving human participants for review by the IRB. **Only the IRB may make the determination of exemption**, even if you conduct a similar study in the future.

Colorado State University

Research Integrity & Compliance Review Office
Office of Vice President for Research
Fort Collins, CO 80523-2011
(970) 491-1553
FAX (970) 491-2293

DATE: January 17, 2013

TO: Dr. Linda Kuk, School of Education
Linda Stroup, School of Education

[redacted]

FROM: Janell Barker, IRB Coordinator
Research Integrity & Compliance Review Office

TITLE: Career Interest and Self-Efficacy among College Students

IRB ID: 140-13H **Review Date:** January 17, 2013

The Institutional Review Board (IRB) Coordinator has reviewed the modification of this project:

- to collect data from participants who are 18 and older per the request of the participating institutions and to use the revised consent form reflecting this change

and has declared the study remains exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b)(2). The IRB determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as proposed in the IRB application**, including obtaining and documenting (signed) informed consent if stated in your application or if required by the IRB.
- **Any modification of this research should be submitted to the IRB through an email to the IRB Coordinator, prior to making any changes**, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.
- **Please notify the IRB if any problems or complaints of the research occur.**

Please note that you must submit all research involving human participants for review by the IRB. **Only the IRB may make the determination of exemption**, even if you conduct a similar study in the future.

APPENDIX E: SCRIPT FOR RESEARCH STUDY

Script for Research Study on Career Interest and Self Efficacy Among College Students

My name is Linda Stroup and I am a doctoral student at Colorado State University. I am conducting a research study and would like to ask you to help me by completing a short questionnaire about your career interests and how capable you believe you are to complete career-related tasks. I am asking for your help because you are enrolled in an early college-level course and are either thinking about possible careers or perhaps have made a decision about a career you would like to pursue. Besides helping me, the results of this study may help you in your own career decision-making process by giving you perspectives to think about as you decide on courses to enroll in and make your own subsequent career choices. It may also help you identify what could help you to successfully complete courses in certain topics such as science. Finally, I hope that information from this study might be used by colleges for career advising and to develop ways to help students feel more confident about their ability to be successful in college, especially those students thinking about a career in healthcare.

You may or may not choose to complete the questionnaire. There are no consequences for you either way. I will give you an informed consent letter and the questionnaire. If you choose to complete the questionnaire, you can return it to me in the box on the table.

Thank you for your help with my research.