

**AN EXAMINATION OF THE LOW NUMBER OF MINORITY STUDENTS IN
THE ALLIED HEALTH PROFESSION AND THE STUDENTS'
ASSESSMENT OF THEIR CLINICAL AFFILIATE**

A Doctoral Dissertation Research

Submitted to the
Faculty of Argosy University, Chicago
College of Education

In Partial Fulfillment of
the Requirement for the Degree of

Doctor of Education

by

Elva M. Dawson

October 2013

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Department: College of Education

ABSTRACT

Health care careers rank among the top fastest growing occupations according to the U.S. Department of Labor (2012). However, the underrepresentation of minorities in the allied health profession has been the focus of public health agencies because increasing minority representation would serve many purposes, including working within their underserved communities to provide care and health education there (Castillo-Page, 2008). The increase of minorities in allied health will also increase the pool of medically trained minority executives and educators in allied health. The purpose of this phenomenological study was to provide an examination of the low number of minority students in the allied health profession and seven students' assessment of their hospital clinical affiliate. Tinto's Model of Attrition (1975) was used as a cross-reference when exploring minority students in their clinical hospital affiliates and when examining what role the hospital clinical affiliate had on student retention. This research focused on how minority students adapted to their hospital clinical affiliate and their assessment of the hospital clinical affiliate.

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“The race is not given to the swift or to the strong but to the one that endures until the end” Ecclesiastes 9:11.

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DEDICATION

This adventure started in May 2007 while attending the graduation of my radiation therapy students. I scanned the room, and as I witnessed 700 students crossing the stage, I realized there were less than 10 African-American graduates. I later started counting the professors in attendance and came up with three, including myself. As I sat at that graduation I asked myself the question, “Where are the African-American students?” It occurred to me that in order to assist the next generation of scholars I need to have a seat at the table where planning and implementing programs for recruitment take place. The Sankofa bird is a mythical bird derived from the Akan people of West Africa. The Sankofa bird flies forward while looking backward with an egg symbolizing the future in its mouth. It teaches us that one always must look back and learn from the past and gather the best of your past so that one can reach the full potential before proceeding forward. This dissertation is dedicated to the next generation of minority scholars entering the health care profession.

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CHAPTER ONE: INTRODUCTION

The Problem

In 1983, while attending the Chicago Area Radiation Therapist Bowl as a student, this researcher was one of three African-American students in a room of 300 radiation therapy students. In 2004, the Sullivan Commission reported that low minority representation in the allied health profession was a critical issue for the allied health community. In 2010, while attending the same conference, not as a student but as a Clinical Coordinator, there were 200 students; however, the number of African-American students was still low and holding below 10.

The National Commission on Allied Health claimed that allied health professionals are one of the largest components of the health care workforce (Glenn, 2005). The definition, offered by the American Medical Association's Committee on Allied Health Education and Accreditation [CAHEA] (2013), defines allied health practitioners as a large cluster of health care related professions and personnel whose functions include assisting, facilitating, or complementing the work of physicians and other specialists in the health care system. The Association of Schools of Allied Health Professionals (2013b) defines allied health professionals to include dietitians, diagnostic medical sonographers, medical technologists, occupational therapists, physical therapists, radiographers, radiation therapists, respiratory therapists, and speech language pathologists. Allied health programs are found in community colleges as well as four-year institutions, and training for allied health personnel ranges from vocational to advanced college and/or university degrees.

A need exists to increase the number of allied health professionals along with a greater need to increase the minority representation in allied health. Minorities can be defined as a group that is smaller in number than the majority group. In this current research, minorities are defined as African-Americans and Hispanics. The allied health professions experience low numbers of minorities in the field. According to the U.S. Bureau of Labor (2011), for health care practitioners and technical occupations, 80% of employees are Caucasians, 10% are African-Americans, 7.8% are Asians, and 6.7% are Hispanics. Upon a closer look in the field of occupational therapy, the percentages are 88.4% Caucasians, 2.7% African-Americans, 7.6% Asians, and 4.6% Hispanics; dental hygienists consist of 93.2% Caucasians, 0.5% African-Americans, 5.5% Asian, and 7.2% Hispanics.

There are several rationales for increasing the number of minorities in the allied health professions. Research has shown that members of minority groups suffer disproportionately from illness than their White colleagues (Institute of Medicine, 2002; Pew Environmental Health Commission, 1999). The U.S. Department of Health and Human Services implemented the Healthy People 2010 Initiative whose mission was to achieve health care parity by the end of the decade (Minoritynurse, 2000). One way of improving health care parity was to increase the number of minorities working in allied health. Donini-Lenhoff and Brotherton (2010) stated that even though the allied health professions continued to seek solutions to personnel shortages, they are still struggling to make the workforce better reflect the growing diversity of the United States. Despite the work and focus that the national government has on increasing minority representation in allied health careers, there has been little to no increase.

Problem Background

Health care careers are ranked among the top fastest growing occupations according to the U.S. Department of Labor Statistics (2012). Nationwide, there is an acute shortage of health care professionals due to technological advances, which result in patients living longer and the aging of the health care workforce (Balogun, Sloan, & Hardney, 2005). However, the number of minorities working in the allied health profession is low. In order to improve health care parity more minorities are needed to work within their communities. Balogun, et al. (2005) stated that the rationale for increasing the number of minorities in the allied health professions is because they are more likely to serve in medically underserved communities. The Diversity Medical Education Facts and Figures in 2008 reported that 45% of African-American graduates plan to practice in underserved areas, whereas 19% of Caucasian students had the same plan (Castillo-Page, 2008). Therefore, an increased minority representation in the medical workforce would help to improve access in areas where there is a large vulnerable population. As minorities continue to work in allied health, they can increase the pool of medically trained minority executives and educators in allied health. Also, minority allied health professionals can become involved to strengthen medical research in their communities thereby providing access for minorities. However, minorities have to be better prepared for higher education in order to gain entry into the allied health profession.

In 1954, the Supreme Court provided a path for inclusion of all students the right to fair and equitable education. Before the passage of *Brown v. Board of Education* minority students were denied equal opportunity in education (U. S. Courts, 1954). The

Brown decision offered a legal basis for dismantling racial segregation in schools and other public facilities. However, today minority students still lag behind their Caucasian counterparts in education. In 2003, The Pathways to College Network reported that when comparing groups of individuals in their late twenties, more than 33% of Caucasians have at least a bachelor's degree, but only 18% of African-Americans and 10% of Hispanics have attained bachelors' degrees (Carter, 2006).

In the beginning, when legal mandates were enforced to include minorities, little was done to assist in their transition into higher education. Some minorities faced hostile campuses, culturally ignorant students and staff, limited and decreased economic assistance, lack of minority faculty, and cultural alienation and isolation (Easley, 1993). Professors' biases were also investigated and showed a correlation between African-American students' success at predominantly White institutions of higher learning. One study conducted by Simms (1993) demonstrated how some professors have low expectations for African-American students, and because of that impression the professors do not press the student to achieve. The professors' attitude can be derived from negative images seen on television, lack of cultural knowledge, and racial prejudice. During the 1960s when African-American students populated predominantly White institutions, they were expected to mask their cultural differences and assimilate into the mainstream culture (Holmes, 2000). Holmes' research documented that when faculty and staff have not been prepared to interact with African-American students, then the community becomes divisive and intolerant where hostility, frustration, and apathy increases.

In order to decrease and eliminate divisive and negative attitudes toward different cultures, universities and health care institutions are now training their personnel with cultural competency. According to the U.S. Department of Health and Human Services Office of Minority Health (2013), cultural competency can be defined as acknowledging and incorporating at all levels of the institution the importance of culture. The U. S. Department of Health and Human Services Office of Minority Health define a cultural competent system as one built on the awareness of integration and interaction of health beliefs and behaviors, disease prevalence and incidence, and treatment outcomes for different patient populations. Minorities must be involved in the process.

Today, institutions of higher learning have taken initiatives to address the needs of minority students related to social integration, academic support, financial support, and mentoring from the faculty. Dr. Jennifer Engle, the Interim Director and Senior Research Analyst of the Pell Institute for the Study of Opportunity in Higher Education, stated that it is of utter importance when institutions show that they care about minority students and can provide a climate for mentoring and peer support from other students with similar backgrounds (Roach, 2008). Engle also stated that once a strong support program has been developed for low income, first generation students, those same programs can be extended to all students regardless of their race or ethnicity. Dr. Watson Scott Swail, the President and Chief Executive Officer of the Educational Policy Institute in Virginia Beach, raised the question, “Do we do students any favor by letting them in if we do not have the ability to support them through?” (Roach, 2008, p. 16).

Quantitative research studies have focused on the low number of minority students at institutions of higher learning and have offered the universities suggestions on

how to increase and maintain their enrollment (Thompson & Fretz, 1991; Tracey & Sedlacek, 1984, 1985). Several colleges have now integrated programs to assist minority students in their first year. The University of Minnesota implemented a program developed by two African-American professors titled *African-Americans and a Family* (Grier-Reed, Madyun, & Buckley, 2008). The role of this program is to provide an outlet and space for African-American students to develop coping skills which help the student have a better self-image and awareness, thereby increasing retention. The program prompts discussions and question and answer sessions with African-American faculty, alumni, and upperclassmen.

Quantitative researchers (Barfield, Folio, Lam, & Zhang, 2011) have inquired why minority representation is low in the allied health professions, but few qualitative studies have been done to address the disparity. Barfield et al. (2011) conducted a study to develop a scale to identify barriers that limit the enrollment at colleges and universities in allied health programs. Their study identified five factors that are potential barriers to student enrollment in allied health education: social influence, experiential opportunity, academic preparation, physical self-efficacy, and self-management. Social influence consisted of the attitudes of high school and college faculty, counselors, and coaches toward race/culture. Allied health education is not taught during K-12; therefore, students have limited opportunity and feedback. Experiential opportunity involves the student being exposed to allied health careers. In an effort to increase experiential opportunity, many college recruitment interventions now implement K-12 academic and summer programs to increase students' exposure to allied health programs. Academic preparation involves the student being prepared for the intense allied health program.

Allied health programs are very competitive due to the small number of applicants that can be accepted into the program. Physical self-efficacy involves the student having the confidence to succeed in allied health because of prior experience and confidence in their athletic ability and fitness. Finally, self-management examines the student family demand issues and extra-curricular requirements of allied health programs such as internships and clinical hours.

Ancis, Sedlacek, and Mohr (2000), in their study of undergraduates, concluded that African-American students consistently report significantly more racial-ethnic conflict on predominantly White campuses; pressure to perform to stereotypes; and less equitable treatment by faculty, staff, teaching assistants, and campus police. Margaret Spelling, President George W. Bush's Secretary of Education, formed a commission called the Commission for the Future of Higher Education and outlined what some educators already knew, which was that too many young African-Americans are ill-prepared, can't afford tuition, and don't know how to navigate the complex financial aid system (Branch-Brioso, Dervarics, Powell, & Roach, 2008). According to the National Center for Educational Statistics (2004), the African-Americans and Hispanics represent 25% of the population yet constitute only 18% of students enrolled in four-year colleges and universities.

The Radiography Program used for this current study is from a community college accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). The radiography program offers an Associate of Applied Science degree and is a two-year program that provides the study of theory, technical skills, patient care, and techniques necessary to use radiation in the diagnosis of disease.

Completion of the program can lead to employment as a radiographer in hospitals and clinics. Once students have completed the program they are eligible to take the national board exam offered by the American Registry of Radiologic Technologists.

The program involves didactic and clinical education at hospital clinical affiliates associated with the program. Clinical education is defined as the professional phase of allied health education and provides the student with the opportunity to learn with an allied health professional in the workplace. During the clinical phase of education the student attends the hospital affiliated with the allied health program, observes the allied health professional, and learns the technical skills needed for entry level practice. The allied health program requires students to complete the pre-requisites needed for admission to the professional phase. Once the student has completed the pre-requisites, he/she applies to the program. The application process involves the student submitting an application, transcripts, and references letters. The program director, clinical coordinator, and some of the clinical supervisors from the hospital clinical affiliates interview the applicant.

Most allied health programs can only accept a limited number of students depending on the number of clinical affiliates associated with the program. For example, at the University of St. Francis, in 2010, the Program Director for the radiology program interviewed 15 applicants for six spaces in their radiography program. Therefore, some programs may only be able to accept a small number of students per year once the students have been accepted for their clinical rotations. The radiography field is highly competitive, and as a result of the limited spaces allowed, academic qualifications can become a barrier to many students. In addition, if a student fails in one class during their

junior or senior year, he/she loses the spot in the program. Students are not given the chance to redo the class with the next group because the programs are set up on sequence tracks. Aside from the program being competitive, few minorities apply to the different allied health programs. Therefore, with the small number of students accepted into the program, the goal is to keep them all and not lose one once they commence their clinical education.

Purpose of the Study

Tinto's Model of Attrition developed in 1975 provided a workable and testable foundation for analyzing the multiple factors involved with student retention and departure using quantitative methods. Studies by Cabrera, Nora, and Castaneda (1993), Cope and Hannah (1975), Lenning, Beal, and Sauer (1980), Pantages and Creedon (1978), Swail (2004), Tierney (1992), and Tinto (1975) have shaped how researchers and practitioners view the issue of student retention and departure. Tinto's original theory involved five specific factors that contributed to student retention: (1) a student's pre-entry attributes, (2) goals and commitments, (3) experience at the institution, (4) external commitments while at the institution, and (5) integration both academically and socially (Metz, 2002). This earlier research, which studied student retention, began prior to the time minorities had become a critical mass on college campuses. Much of the most widely acclaimed earlier research's guiding theories on student transition to college, departure, involvement, and learning were often based on White male students. Once the phenomenon of minorities in the field of allied health through qualitative research is explored, a clearer understanding will exist of the factors that contribute to the success or failure of minorities in allied health.

In Tinto's model of attrition (1975), one factor associated with retention included pre-entry attributes such as the students' high school GPA and ACT scores. However, this current study reflects on students who had been in college for one year, had taken the necessary prerequisites, and completed the application process for the clinical phase of the program. The research focuses on minority students, their perceptions of their hospital clinical affiliate, and the role it played in their retention.

Research Questions

How do minority students adapt to their hospital clinical affiliate? In this research an examination of the low number of minority students in the allied health profession and the students' assessment of their hospital clinical affiliate are examined. The focus is on minority students in the field of radiography, and it offers their reflection on their clinical experience. What were minority students' experiences with the overall social climate in the clinic? How does the clinical experience impact the low number of minority students in allied health? How welcoming is the hospital clinical affiliate toward minority students? Finally, Tinto's Model of Student Retention (1975) is examined as to its applicability in the hospital clinical affiliate.

Methodology

This qualitative research examines the lived experiences of minorities who are students in the professional phase of their radiography program. This qualitative research provides an inquiry of minority students' perception of their clinical education in the field of allied health. Tinto's Model of Attrition (1975) is used to examine the role the hospital clinical affiliates play in the success of minority allied health students.

The students in this research are from a community college with a student body of 7,000 students. The college is located in a large Midwestern metropolitan area. The participants completed two interviews. The first interview involved questions asked in an open-ended style, which thereby allowed the participants to provide in-depth information. The questions induced the participants' feelings, experiences, beliefs, and convictions regarding their clinical experiences. The follow-up interviews allowed the researcher to receive clarity to answers given in the initial interview.

Limitations and Delimitations

One major limitation is the small population of minorities in the allied health profession. The small number of African-Americans reduces the pool of applicants available for the study.

Definitions

Allied Health Professionals - Allied health professionals include dental hygienists, medical sonographers, dietitians, medical technologists, occupational therapists, physical therapists, radiographers, radiation therapists, respiratory therapists, and speech language pathologists. They function by providing a range of diagnostic, technical, therapeutic, and direct patient care and support services critical to the other health professionals they work with and the patients they serve (Association of Schools of Allied Health, 2013a).

American Society of Radiographic Technologists (ASRT) - The American Society of Radiologic Technologists (ASRT) is a voluntary professional organization, which has as its mission to advance the medical imaging and radiation therapy profession and to enhance the quality of patient care (American Society of Radiographic Technologists, 2013).

Clinical Instructors - Board certified professionals who are engaged in instructing students during their clinical assignment (Joint Review Committee on Education in Radiologic Technology, 2013).

Clinical Supervisors – Clinical supervisors are allied health professionals who are board certified and have five or more years of experience in their respective fields. Their job includes selecting, teaching, and advising students, while maintaining and implementing the curriculum for the allied health programs (Joint Review Committee on Education in Radiologic Technology, 2013).

Failure - Failure is defined as students who were accepted into the professional phase of the allied health program but did not completed the program.

Hospital Affiliates – Affiliates are the hospital departments associated with the school that provides the professional education for the students.

Success - Success is the completion of an accredited radiation therapy program, board certified, and working in a radiation therapy department.

Retention - Retention is the students' acceptance, consecutive enrollment, and successful completion of the program culminating with graduation.

CHAPTER TWO: LITERATURE REVIEW

Importance of the Study

The purpose of this phenomenological research is to provide an examination of the low number of minority students in the allied health profession and the students' perception of their hospital clinical affiliate. Tinto's Model of Attrition (1975) is applied to explore minority students' reflections of their clinical experiences. In 1975, Tinto published an interaction model of student attrition that laid the theoretical foundation for research about student attrition (Mannan, 2007). This research interviews minority students in the radiography allied health profession and explores the role the hospital clinical affiliate has on student retention. Tinto's Model of Student Departure (1982, 1988) has been the theoretical framework used most often in examining the predictors of student attainment and persistence in college. Research implementing Tinto's framework has contributed a great deal to the understanding of what causes student dropout or departure and student persistence (Braxton, Milem, & Sullivan, 2000; Bray, Braxton, & Sullivan, 1999; Elkins, Braxton, & James, 2000; Thomas, 2000). However, over the years, researchers have challenged Tinto's model for its limited applicability to minority students (Braxton, Sullivan, Johnson, 2000; Tierney, 1992). Instead of the university being examined, this research incorporates studying the allied health programs' hospital clinical affiliates. The importance of this research is to explore the factors associated with student retention once they are in the clinical phase. When using Tinto's model for the school, the institution can implement programs to help minority students; however, in the hospital the university does not have control over the hospital staff or physicians. The information gathered from this research can be used to educate and better prepare the

allied health professionals in the clinics to work with minority students. The allied health program for this research is radiography.

Statistics for Health Care Professionals

By the year of 2016, the market demand for the health care profession will expand to more than 10 million professional positions (Barfield et al., 2011). Unfortunately, the demand is bigger than the supply of health care workers. As the population ages, chronic conditions will surge and the need for health care professionals will increase. The Institute of Medicine (2008) contends that the American workforce will be too small to meet the demand. In order to recruit for these positions, institutions must evaluate and examine the factors that affect students' enrollment and graduation in an allied health profession, and a closer examination needs to take place with the minority representation in the allied health professions.

According to the U.S. Census Bureau, by 2050 it has been stated that more than one-third of the population will identify themselves as minorities. However, the number of health care professionals is not increasing at the same rate (Donini-Lenhoff & Brotherton, 2010). The rationale for increasing minority health care professionals is essential because minority health care workers normally will work within their underserved community to provide care and health education to their community. However, low enrollment and higher attrition among minority students in college make attaining this goal elusive. First, one needs to examine the low number of African-American students in higher education completing their education. Furr and Elling (2002) noted that the educational disparity between the graduation rates of African-American students and White students continued to present challenges in higher

education. Schmidt noted (2008) that the nationwide four-year college graduation rate for Black students stands at an appalling low 44%, 19 percentage points below the rate for White students.

According to the U. S. Department of Labor's Bureau of Labor Statistics (2008), health care job vacancies are reaching crisis levels. The American Hospital Association (2008) estimates vacancy rates of 21% for pharmacists, 18% for radiologic technologists, and 12% for laboratory technologists. The U.S. Department of Labor (2012) employment projections indicate that the health related professions constitute half of the 20 fastest growing occupations. However, the number of minorities currently in the allied health profession will not meet the demands to work in these fast growing occupations. As Elmwood noted (1995), the absence of complete, consistent, and continuous information on the allied health work force makes it virtually impossible to develop accurate estimates of personnel and manpower needs. Even today, on the license for the professional, the nationality of the professional is asked but is not required when completing the application.

The American Physical Therapy Association (APTA) currently reports that their members are 90.8% White, 4.2% Asian, 1.9% Hispanic, 1.5% African-American, 0.5% American Indian/Alaskan Native, and 1.1% other (Bensley, 2008). The American Occupational Therapy Association membership does not require its members to list their ethnicity but those who did in 2002 stated: 1.9% African-American, 0.2% American Indian, 3.3% Asian American, 1.5% Hispanic, 0.2% multiracial, 0.8% other, and 71.9% White. It is also difficult to estimate the exact complexion of the radiologic science profession because the accrediting body, the American Registry of Radiologic

Technologists [ARR] (2009) doesn't require that information from its members. Faguy (2009) reported that the professional organization, the American Society of Radiologic Technologists (ASRT), does invite members to state their ethnicity on their membership forms, but many do not. Nevertheless, the ASRT estimates that 87% of its members are Caucasian, while African-Americans account for 3.4% of the membership. Hispanics account for 3.6% while less than 3 % of ASRT members are Asian Americans, and about 1.5% are Native Americans. In 2004, the Robert Wood Johnson Foundation classified the radiologic profession as one of the least diverse health care professions with less than 20% non-White workers (Lowe & Pechura, 2004). In order to increase minority representation in health care, funding from the U. S. Office of Economic Opportunity was designed specifically for the Special Health Career Opportunity Grant Program; however, the percentage of minorities entering health professions was still far below their representation in the total population (Lowe & Pechura, 2004).

Rationale for Increasing Minority Representation

The problem of underrepresentation of minorities in the allied health profession relates to continued inequities affecting minorities at all levels of education. Several studies (Allen, 1992; Turner, 1994) have tackled the concept of minorities at predominantly White institutions. These studies noted that African-American students experience exclusion, racial discrimination, and alienation at predominantly White institutions. One critical factor identified in the retention and success of African-American students at predominantly White institutions is the students' experiences of the campus social environment (Schwitzer, Griffin, Ancis, & Thomas, 1999). Allied health students have the dual experience of adapting to the campus social environment as well

as to the hospital clinical environment. Allied health students have two years acclimating themselves to the campus and then must grapple with the adjustment to the hospital clinical affiliate.

The Council on Graduate Medical Education (1992) declared that one of its highest priorities was to guarantee that the number of physicians would reflect the racial composition of the general population. The rationale was because research findings acknowledged that minority providers are far more likely to locate their practice in areas where they serve minority patients and the underserved (Gabard, 2007). Dr. Gabard, Professor in the Department of Physical Therapy at Chapman University, stated that more diversity in health care providers will result in: (1) increased cultural competency among all practitioners which allows providers a better understanding of the unique needs of each patient, (2) greater access to care for minority patients, (3) a strengthened research agenda for health care thereby increasing minorities conducting research, and (4) increased likelihood of health care administrators who are knowledgeable about diverse cultures and responsive to patients from diverse ethnic and cultural backgrounds.

The same rationale holds true for the different allied health professionals. For example, when respiratory therapy patients are undergoing treatment, most of their time is spent with the respiratory therapist. Patients build a relationship with their therapist and are able to communicate on a more personable level. Patients receiving x-rays meet the radiographers; rarely do they have contact with the physicians unless the x-ray is repeated due to discrepancies on the x-ray. Allied health professionals have direct daily contact with their patients. Building a relationship through communication is instrumental in providing care for the patient during their treatment.

Clinical Education of Allied Health Programs

Clinical education can be defined as the central focus point in the professional phase in the allied health program. It is designed to assure that students completing the allied health program have the necessary requirements and skills needed to assume the duties of an entry level professional. Students are required to attend hospitals that are affiliated with the school program. Clinical education includes clinical assignment objectives, clinical examination competencies, and performance evaluation. Clinical assignment objectives involve students who complete specific tasks to meet the objective in a particular stage of their learning process. Clinical examination competency confirms the students' ability to perform technical procedures. Finally, the performance evaluations help qualify and quantify student performance. Performance evaluations help identify the students' areas of strengths and weaknesses in the clinical area.

The professional accreditation body approves curriculum defined in allied health programs. For example, radiography and radiation therapy programs are accredited through the Joint Review Committee on Education in Radiologic Technology [JRCERT] (2011). JCERT defines the role of clinical instructors to: provide clinical instruction, assist the clinical supervisor in performance evaluation, act as a professional mentor or preceptor, and provide direct supervision of students at all time. The accrediting body visits the school along with visiting the hospital clinical affiliate. It reviews the curriculum and verifies that the school and the clinical affiliates are following the curriculum. The site visitors meet with the program director, clinical coordinator, and clinical supervisors at the hospital affiliates along with meeting the current students in the

program. If a fault is found, the site visitors can recommend that the program receive provisional accreditation or probationary accreditation until the situation is rectified.

According to Belinsky and Tataronis (2007), clinical education provides the students' exposure to role models who exemplify the role the student needs to emulate and learn in order to advance into the entry level position. Clinical instructors' main goal is to treat their patient. In the process of treating, clinical instructors must also educate the students in the profession. However, most clinical instructors do not receive formal teaching strategies for educating students. Most clinical instructors teach as they were taught. However, the issue arises when the clinical instructor is busy due to time constraints, teaching students and treating patients. Students feel that the clinical instructor is not spending time teaching therefore causing conflict in the clinical arena. The climate at the clinical site can become non-productive for learning. Belinsky and Tataronis (2007) noted that the behavioral dynamics of the instructor-student relationship within the clinical affiliate is vital to the developing student and keeps them progressing through the program.

Motivation

Ballman and Mueller (2008) noted that it was important to study the motivation of allied health students because as future professional, they will work directly with patients in the allied health field. The environments that the students are educated in may have an effect on the methods they use as professionals to create a self-determined and motivated environment for their patients.

Tinto's Model of Attrition

Tinto's Model of Attrition developed in 1975 provided a workable and testable foundation for analyzing the multiple factors involved with student departure using quantitative methods. Studies by Cabrera et al. (1993), Cope and Hannah (1975), Lenning et al. (1980), Pantages and Creedon (1978), Swail (2004), Tierney (1992), and Tinto (1975) have shaped how researchers and practitioners view the issue of student retention and departure. Tinto's original theory involved five specific factors that contributed to student retention: (1) a student's pre-entry attributes, (2) goals and commitments, (3) experience at the institution, (4) external commitments while at the institution, (5) integration both academically and socially (Metz, 2002). Tinto believed that if students can separate from their familiar customs and norms, they would find the transition into experiencing full social integration and academic success within the university setting. Would this also hold true for minority allied health students assimilating into their clinical hospital affiliates?

Earlier research regarding the study of student retention began prior to the time minorities had become a critical mass on college campuses. Much of the most widely acclaimed earlier research's guiding theories on students' transition to college, departure, involvement, and learning were often based on White male students (Bean & Metzner, 1985; Tinto, 1975). Once the phenomenon of minorities in the field of allied health is explored through qualitative research, there will be a clearer understanding of the factors that contribute to the success or failure of minorities in allied health. In this current research, the concentration focuses on the student being able to assimilate into the hospital clinical affiliate. Are they able to build relationships with the staff? If the

relationship falters, is it the beginning of the student misalignment with the allied health program?

Currently, when minority students attend their hospital clinical affiliate, they must undergo the process of assimilation within the hospital. As stated previously, there are a low number of minorities in health care. Most of the minorities entering the hospital see very little representation of themselves. According to Tinto's model (1975), if social integration between the student and the institution is vital for the student to be successful at the institution, then the same should be true for the hospital clinical affiliate. At institutions of higher learning, some schools provide programs, which offer mentors to minority students to assist with social integration. The same is true at the hospital clinical affiliate; some allied health professional programs assign their students to mentors in the hospital. Mentoring involves a personal relationship between the student and the mentor, thereby fostering the student growth through the allied health program. Mentoring involves coaching the student as well as teaching the student. Effective mentors are able to share their experiences by discussing past experiences or feelings thereby providing validity for how a student may be feeling. Mentors provide reassurance and counseling about uncomfortable situations the student may encounter. Finally, mentors try to reduce the students' anxiety and help them develop coping strategies to assist them in the clinical area. This research examines that relationship and sees how effective the bond between the student and mentor is.

Tucker (1999) identified another similar model outlining academic and social integration in student retention. Tucker identified nine themes including: Vision, Sense of Community, Student's Preparedness, Institutions' Preparation, Support from Parents,

the Role of the Student, Desire for Change, Community College Stigma, and Commuting Distance from School. Tucker pointed out that Vision seems to provide the student a guide to achieving their goal of graduation. If the vision is not clear, then the student will get lost on their path to completing the goal. Tucker identified the Sense of Community as any phenomenon that gives students a feeling of belonging to their new institution. He pointed out that those who have a great sense of belonging in their new environment had a greater chance of completing their goal.

The student's pre-entry attributes are not focused on in this research. The rationale is the students participating in this research have been in school for over a year and have the necessary grades because they were accepted into the clinical phase of the program. However, another factor that may play a role includes the student's financial stability. Students in allied health programs must also factor in the cost of uniforms and transportation to the clinical affiliates. Students must wear uniforms while attending clinic. If the allied health student lives on campus, transportation is not an issue; however, if the student must travel to the hospital clinical affiliates, the cost of gas and parking can add up. Students are also in the situation where they are not able to have part time employment due to the clinical hours offered for students.

CHAPTER THREE: METHODOLOGY

This qualitative study examined the lived experiences of seven minority students in their radiography program at Community College (CC). The college is located in the Midwest in a large metropolitan area and offers several associate degrees in allied health. The Chronicle of Higher Education's Diversity in Academe issue ("Race, Ethnicity, and Gender," 2012) listed the Community College's enrollment at 7,161, with 25% Caucasian, 64% African-American, 9% Hispanic, and 1% Asian.

Design and Methodology

Qualitative research involves the systematic collection, organization, and interpretation of textual material derived from talk or observations (Malterud, 2001). It is used to explore the meanings of social phenomena as experienced by individuals themselves in their own environment. Trochim (2006) stated that the phenomenology approach in qualitative research focuses on people's experiences and their interpretation of the world. Therefore, when approaching the subject of minorities in allied health, the goal was to tell the story of the participants as accurately as possible. Students' perceptions define their reality; therefore, the use of qualitative research methods provided a better understanding of the students' experiences. Tinto's Model of Student Attribution (1975) was conducted at institutions of higher learning through the use of quantitative studies while this current research examined the student's experiences through a qualitative study focusing on the hospital clinical affiliates within the radiography program. According to Creswell (2009), the essential idea of phenomenology is to observe the phenomenon in its natural state.

Population and Sampling Procedure

The participants for this research were minority radiography students who were currently in the program and were attending the hospital clinical affiliates associated with the program. Purposeful sampling was used to recruit participants at the college.

Purposeful sampling involves selecting participants with particular criteria in mind. The criteria for this sample were to include minority male and female allied health students who were currently in the clinical phase of their education. The ages of the participants were between 21 to 38 years (see Table 1).

Table 1

Participants of the Research

Participant	Age	Gender	Race	1 st Generation to Complete College
Terrence	26	M	African-American	Yes
Tracy	36	F	African-American	Yes
Dominic	31	M	Hispanic	Yes
Tina	32	F	African-American	Dad has master's degree
Caleb	38	M	African-American	Yes
Donna	29	F	African-American	Yes
Valerie	29	F	African-American	Yes

Table 2 lists the participants' characteristics common to nontraditional students.

Table 2

National Center for Education Statistics Seven Characteristics Common to Nontraditional Students

Student Name	College Late in Life	Part Time College	Work Full Time	Financially Independent	Children or Dependents	Single Parent	GED/No High School Diploma
Dominic	X			X			
Donna	X	X		X	X		
Stacy	X			X	X		
Terrence	X	X		X			
Valerie	X			X			
Caleb	X	X		X	X	X	
Tina	X	X		X	X		

After talking with the CC's Director of Health Science and receiving permission from the Radiography Program Director, an invitation to meet the minority students was set (see Appendix A). Fourteen minority students, African-American and Hispanic, attended the presentation explaining the research. All of the students at the presentation plan to graduate in May 2014; therefore, they are in their second year of the radiography program. Seven students volunteered and were provided an email explaining the details of the purposed research (see Appendix B). Dates were made to conduct the initial interviews, and personal information was exchanged to keep in contact. Participants were informed that their identity would remain confidential during and after the research. Prior to all interviews the participants reviewed and signed the informed consent form (see Appendix C). Copies were made and given to the participants after they signed them.

Instrumentation

The collection method used in this phenomenological research was semi-interviews. Semi-interviews are interviews used in qualitative research that provide the interviewer the opportunity to explore particular themes through open ended questions. Creswell (2009) stated that qualitative researchers collect data themselves through interviewing participants, observing behavior, or examining documents. The participants were interviewed twice. The first interview lasted 60minutes. After completing the first interviews and transcribing the recordings, the individual transcripts were given to the participants to review. A follow-up 30 minute interview allowed the researcher to receive clarity to answers given in the initial interview. For example, one question focused on the participant's relationship at the first hospital clinical affiliate. When the

student provided an answer with an emotional response, such as overwhelmed, the next interview revisited that emotion with follow-up questions to provide clarity. The interviews were face-to-face conversations and were audio-recorded for documentation purposes. During the first interview, questions were asked in an open-ended style, thereby allowing the participants to provide in-depth information (see Appendix D).

The questions were used to explore the participants' feelings, experiences, beliefs, and convictions regarding their clinical experiences. Open-ended questions allowed the participants to answer any way they chose, which can produce rich, deep, and unexpected answers. The first component of the initial interview centered on demographic questions, gender, age, and area of study. It also included questions regarding the participants' individual traits and family background. Family background characteristics included parental family structure, parents' level of education, and occupation. The second component consisted of questions regarding their entrance into the program and their navigation into their professional experience. The third component focused specifically on their clinical experience in the program.

Data Analysis

The first step involved in analyzing data is coding. Once all interviews were transcribed, passages from the interviews were assigned codes based on responses. Data was reviewed to identify categories of the phenomena and to look for similar relationships. Patterns that formed a common thread were documented. Creswell (2009) noted that clusters of themes in research are formed by grouping units of meanings together. Additional themes and subthemes were identified as the analysis proceeded.

The patterns and themes acquired from the interviews were examined to understand the world from the participants' viewpoint.

Limitations and Delimitations

One major limitation was the small population of minorities in the allied health profession. The small number of African-Americans reduced the pool of applicants available for the study. Case in point, the original college this researcher was anticipating using to conduct research did not have enough minority students in their allied health program to conduct the study.

Moreover, as an African-American radiation therapist, the researcher's personal bias may also present a limitation on the study. Gilbert (2008) stated that reflexivity could be described as a style of research that makes clear the researcher's own belief and objectives. Willig (2001) noted that personal reflexivity involves reflecting upon the ways in which the researcher's own values, experiences, interests, beliefs, and social identities may shape the research.

Summary

This qualitative study examined the low number of minority students in the allied health profession and the students' perception of their hospital clinical affiliate. The seven participants used for this research were minority students in the Radiography Program at CC. When examining the issues of low number of minority students in allied health programs, Tinto's Model of Attrition (1975) was incorporated to examine how minority students were adjusting to their hospital clinical affiliates. The following chapter is an analysis of the results of the study.

CHAPTER FOUR: RESULTS

Introduction

This chapter discusses the findings of this qualitative research examining the lived experiences of minority students in the radiography program at Community College (CC). How do minority students in the radiography program adapt to their hospital clinical affiliate? The research provided an examination of the low number of minority students in the allied health profession and the students' assessment of their hospital clinical affiliate. What were minority students' experiences with the overall social climate in clinic? How does the clinical experience impact the low number of minority students in allied health? How welcoming is the hospital clinical affiliate toward minority students? Finally, Tinto's Model of Student Retention (1975) was examined to see if it is applicable in the hospital clinical affiliate. These were the questions this research investigated.

The data collected for this research was from seven minority students at Community College in the Midwest in a large metropolitan area. Community College has nine allied health programs in their Health Professions Programs. There were 48 students in the Radiography Program. The first year demographics included 26 students: 10 Caucasians, 4 Hispanics, 1 Asian, and 11 African-Americans. The second year demographics of the radiography program included: 11 Caucasians, 1 Hispanic, and 10 African-Americans.

Several themes were identified while interviewing the participants and were included in Table 1 (see Chapter Three). The most prominent themes identified when reviewing and coding the transcripts were: (1) examining the role of the nontraditional

student, (2) health care experience, (3) interactions with clinical supervisors, and (4) clinical affiliate orientation with Tinto's Model of Attrition [1975] (see Figure 1).

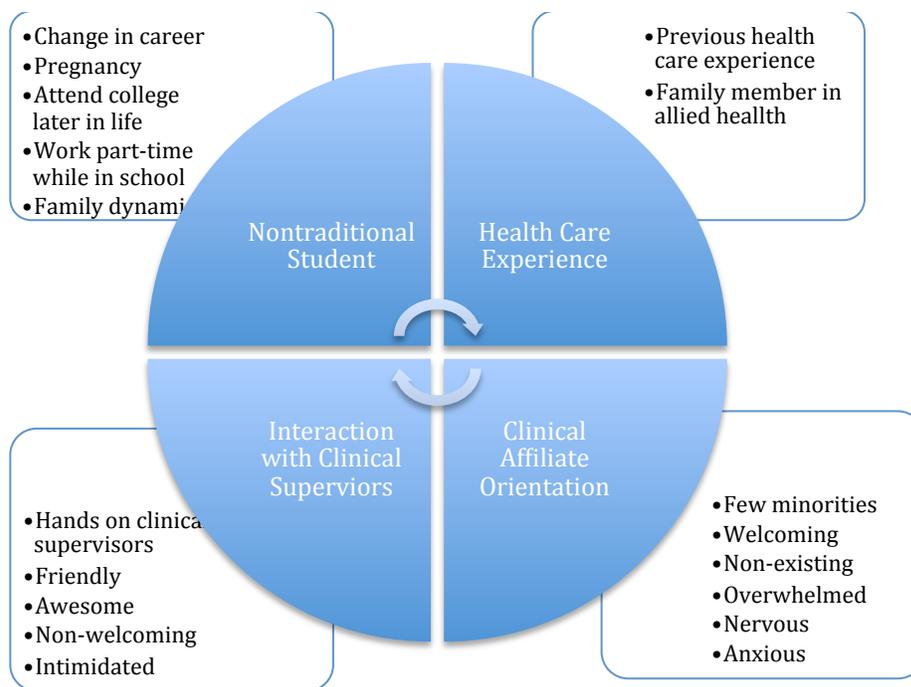


Figure 1. Themes and codes of research.

Tinto's Theory of Student Departure was implemented for understanding the perceptions of minority nontraditional students in their hospital clinical affiliate. The major models of persistence include Tinto's Theory of Student Departure (1975, 1987, 1993), Austin's Theory of Involvement (1984), and Pascarella's Model (1985). These models were all based on traditional students in traditional residential institutions (Deil-Amen, 2011). However, the participants in this research were all nontraditional students and their perception of their clinical education not their academic institutions. Critics faulted Tinto's model as inadequate for minority students because it assumes disconnection from a home community must occur before integration into a college community can happen (Guiffrida, 2006; Hurtado & Carter, 1997; Tierney, 1992, 1999).

Whereas, previous models by Rossman and Kirk (1970) and Waterman and Waterman (1972) emphasized that personality and disposition had a role in influencing the student's willingness and ability to meet the academic and social demands of institutions of higher learning. Liu and Liu (1999) noted that it is essential to recognize the socioeconomic factors that may create obstacles to an individual entering college. Socioeconomic factors can include household income level, educational level of the student's parents, and the parent's occupation. All of these studies provide a background to understand the experiences of students entering college, but research examining the nontraditional student entering the allied health programs and their experiences at their hospital clinical affiliate was the source of this research. It is important to explore the participants' own perceptions of their experiences to gather input on their success in their clinical program.

Nontraditional Students

The participants of this research provided their perceptions of their clinical education. During the interviews each student's life story emerged. From the youngest to the oldest participant, they represent the new tradition of students entering colleges and universities. Historically, the definition of nontraditional students referenced students entering college over the age of 24, minority students, students who did not enter college straight after high school, or students who were not attending school full-time (Brown, 2002). According to the National Center for Educational Statistics (2004), the notion of what constitutes a nontraditional student has been the source of discussion in recent research. That definition now includes background factors that place demands on the student such as work, family, school, and culture. Life experiences of students that exist

today are quite different than those facing students from previous generations. The National Center for Education Statistics (2004) identified seven characteristics that are common to nontraditional students: (1) they do not immediately continue education after graduating from high school; (2) they attend college only part time; (3) they work full time (35 hours or more per week); (4) they are financially independent; (5) they have children or dependents other than their spouse; (6) they are single parents; and (7) they have a GED, not a high school diploma. The participants in this research fit the criteria of the nontraditional student. The participants and their nontraditional student characteristics are included in Table 2 (see Chapter Three). Dr. Peter Stokes, Executive Vice President and Chief Research Officer at Eduventures Incorporated, stated that 75% of all enrollees in higher education are nontraditional students (Center for Law & Social Policy, 2011). According to the National Center for Education Statistics (2004), there are 17.6 million undergraduates. Thirty-eight percent of those enrolled in higher education are over the age of 25, and 25% of them are over the age of 30. The participants of this current research have life experiences that have shaped and affected them before entering their allied health program.

The stories outline how the participants represent models of the nontraditional student. The youngest member is Terrence who is originally from the southwest region of the U.S. He entered college straight from high school. Terrence stated,

I started classes in Dallas before I was here. I moved here on a whim. I came to the closest school that was near me and that was here. I wanted to see if they had a rad tech program because I had already started my pre-requisites in Dallas. I had to stop after the summer session because of my job. I was a banker for five years. They told me, 'No, it's either here or there. Those class hours are going to conflict with your banker hours of nine to five.' So I had to stop then, but I told them I was going to re-apply again, and if I get accepted again, I would let the job go. This is a job, and I want a career. You are not going to stop me from getting

my degree. Everybody else done got their degree, and I want mine. I had to make the hardest decision I have ever made.

When he returned to school he used his 401K money from his job to pay for his tuition.

Torres (2006) reported that the nontraditional student is not concerned with whether they fit with the environment as much as whether they understand how to navigate the system. Nontraditional students face the challenges of negotiating between the demands of college, their family, and their work obligations. They are also affected by how closely the actions of faculty and staff reflect a commitment to the welfare of the student (Braxton, Hirschy, & McClendon, 2004). Margaret Spelling, President Bush's Secretary of Education, formed a commission formed called the Commission for the Future of Higher Education, which explained what educators had already known and that was that too many young African-Americans are ill-prepared, can't afford tuition, and don't know how to navigate the complex financial aid system (Branch-Brisco et al., 2008). The Spelling Report (2006) concluded that the entire financial aid system, which includes the federal, state, institutional, and private programs are confusing, complex, inefficient, duplicative, and frequently do not direct aid to students who truly need it. Need-based financial aid is not keeping pace with rising tuition. The report's recommendations called for consolidating programs, streamlining processes, and replacing the Free Application for Federal Student Aid (FAFSA) with a much shorter and simpler application. Dr. Watson Scott Swail, President and Chief Executive Officer (CEO) of the Educational Policy Institute stated, "Do we do students any favor by letting them in if we do not have the ability to support them through?" (Roach, 2008, p. 17).

Tinto's model (1975) proposed that the experiences of the student at his or her institution are reflected in two domains: the social domain, which includes their

experiences with other students, and the academic domain, which reflects their experiences with the faculty and staff (Nora & Cabrera 1996). The model hypothesizes that precollege academic ability has a direct influence on college academic performance, academic and intellectual development, and persistence decisions. However, this hypothesis did not hold well with Donna. She was academically prepared for college, but when Donna first attended college straight out of high school, she quit after her first semester due to low grades. Donna stated,

I was more than prepared for college. I did college level work in my freshman, sophomore, and junior years, so I was more than prepared. I had applied to Penn State, Michigan State, University of Miami, and Grand Valley State - all of these amazing schools. I had gotten accepted, but then I had a boyfriend. I was in love; my first real love, and I didn't want to leave him. I changed my mind at the last minute, and the only other schools that were still accepting applications were Northern, Southern, and Western, all in Illinois. So I attended Southern and took the train back and forth to visit him. I already went in kind of feeling like I didn't want to be there. This is a last resort, so I went to my classes maybe the first week or two, then after that I started making friends and meeting people and started partying and extracurricular activities. It was like, they don't take attendance in college? And then it was like, oh, so I can just show up whenever I want to and take notes and take the test and whatever. I only stayed one semester.

She came home and then went to Bush College and took some general courses, but she then decided to take a break and start working. She stated, "I saw what it was like in the workforce, and it was like yeah, I can get a job, but I can't get a career. I won't be making really good money where I can actually live and support myself." It was at that that point she asked, "What can I do in two years that I see myself doing that I'm interested in?"

On the other hand, Dominic admitted to not being ready for college. Dominic, the only Hispanic male in the study, served in the Marines for four years straight out of high school. Dominic reminisced,

Throughout high school I was the bad apple. I was always getting suspended for fighting. I would always cut class. I would always go to summer school. I would always have to stay after school to make up a class. My senior year I became friends with some of the people from the top 20 bracket. They were really cool. Throughout high school, like the freshman and sophomore years, I would always make fun of them. But getting to know them opened up my eyes. It made me realize they were all leaving for out of state, Arizona State, Tufts University, and I'm sitting here, like my grades aren't good enough. My parents don't have money for college. What do I do? I want to do something. I don't want to sit back here. I don't want to be that one. I figured why not better myself and go into the military?

Caleb also fit the pattern of not being academically ready for college. He stated he had wasted time before he finally buckled down and found employment. Caleb explained, "After high school I smoked a lot of weed and didn't have a job. I hung out with my friends until I got tired of it. I realized I wasn't going anywhere." He later explained, "I had an epiphany and decided enough is enough. My first son was on his way, and I had a long talk with myself."

Tinto (1987) argued that overall differences in persistence rates between minorities and Caucasians were primarily due to differences in their academic preparedness rather than differences in their socioeconomic background. Tinto further stated that these ability differences arise from prior educational experiences at the elementary and secondary levels, which tend to favor the educational achievements of Caucasians relative to minorities. However, Tina's story doesn't follow that argument. Her story is a tale of two sides. She had received honors while in high school, but once she attended college it was totally different. Tina attended college straight out of high school. She was not able to keep up with the academic requirements and was placed on academic ineligibility. Tina stated,

I was not focused or prepared, and then I academically got kicked out. I went to high school and came out with honors. I get to the University of Illinois, and I

can't pass Introduction to Algebra to save my life, but I passed Advanced Algebra with trigonometry with an "A" in high school. Something is not right. They didn't prepare me for this school. I couldn't understand. I remember vividly as day calling my Mom in the school bathroom; I commuted every day to school. I didn't stay on campus. I got to go to school, and there were some issues with my financial aid. I don't know how to handle this stuff. My Mom was dealing with cancer at the time. I was in the bathroom crying my butt off on the phone with my mother. She was like, 'You can do it.' I got up and got it together, but I was not prepared for that experience. It was too much too soon, and I didn't have what it took academically.

Tina left school, went to work, later married, had a child, and decided to go back to school, but she questioned herself. She explained,

I didn't know what I wanted to do. I was going to school because I was supposed to be in school. I had no desire or no direction. I just felt I needed to be in school to learn something and I think that's what hindered me that I didn't have a goal to look forward to.

Tracy originally attended a community college but left and later returned. Tracy stated, "I went to college and had a gap and then I came back to college and then I started a family and started working. I went straight to pharmacy tech." Tracy mentioned how she was traveling a long distance to work. "It got to the point where my husband was, 'Like, you're travelling too far. I can take care of the family, and I stayed at home and kind of let my license lapse.'" When she resumed looking for work, the economy had changed, and employment was hard to find.

Each one of these students had life experiences that altered their pathway to college. Each of these students can be labeled a nontraditional student. The life experiences of financial struggles, trying to squeeze in a school schedule around a full time work schedule, and taking care of a family are variables that colleges cannot control. These factors have the potential to derail a student's progress through higher education. The new college students are not 19 years of age and straight out of high school. They

are a mixture of ages, diversities, possibly married with children, and may also be taking care of a parent as well. Six of the seven participants will be a first-generation college graduate in their family. Most had parents who attended college, but only one had a parent who graduated from college. However, at present, there is not sufficient literature to determine the factors and reasons affecting minority student attrition in radiography programs.

Previous Health Care Experience

As noted in Chapter Two, the U.S. Census Bureau (2008) reported that by 2050 more than one-third of the population will identify themselves as minorities, but the rate of minorities becoming health care professionals is not increasing at the same rate. Health care practitioners are recognizing that they live in a culturally diverse society and must accommodate the needs of a diverse population (Clouten, Homma, & Shimada, 2006). The demand for diagnostic imaging is expected to increase with the aging population in the United States. For minority students entering the medical profession, Girotti (1999) reported several barriers that tend to reduce the potential pool of minority candidates for medical school: inadequate pre-college preparation in the sciences and in college enrollment and achievement; low scores on the Medical College Admission Test (MCAT); and financial hardships. Hardy (1999) noted that the greatest obstacle for students is the MCAT, and another is a lack of information about medical school requirements. The goal of enrolling more minority students in allied health programs is to help provide greater access to care for minority patients, strengthen the research agenda for minority health care, and increase the likelihood of health care administrators

who are knowledgeable about diverse cultures and responsive to patients from diverse ethnic and cultural backgrounds.

Most allied health professionals decide on the profession due to some experience with practicing health care professionals. Melton (2006) completed research on what motivates African-Americans to pursue medical and health professions and noted that 35% of the students surveyed said that a job shadowing experience with a medical professional was the communication method most instrumental in their decision to pursue a medical career. Twelve and nine-tenths percent of the students indicated that a speech by a medical professional was the most instrumental in their career choice.

Three of the participants of this current research had family members who had experience working in health care. For example, Tina had a grandmother and aunt who worked in doctors' offices doing clerical work; Donna had a sister applying to the nursing program;⁸ Terrence's mother worked with heart monitors, and his grandmother was a licensed practical nurse (LPN). The others had health experiences that placed them in the hospital. Valerie had no prior experience. It was only when she had to have an x-ray did she inquire about it. The same goes for Caleb. When he had an x-ray of his knee, that sparked his interest. Dominic also inquired about the profession when his dad was in the hospital. Each student entered Community College with some knowledge of allied health careers, but none had attended an open house to get information about the radiologic sciences, nor had any of them had a shadowing experience with a health care professional. Their stories define how they were made aware of the radiologic sciences and what enticed them into the field.

Tina's exposure to the allied health profession occurred when she was having an ultrasound during pregnancy. She recalled,

I went to my first ultrasound during pregnancy, and the tech was in the room reading her books, and she was doing my ultrasound. Oh wow, she's a student too, and she's doing homework and doing my ultrasound. I thought, let me go home and look that up.

Terrence's mom worked in the health care field, as did his grandmother. Terrence revealed,

My mom pointed me toward the allied health field. I wanted to be a cartoonist. Then I said I wanted to be a teacher. I wanted to teach world history for 7th graders, and she said, 'That don't make no money. You need to do something that you will be able to sustain yourself comfortably.'

Valerie stated,

I always wanted to work in the hospital because I felt like there would always be jobs available. I would be able to help somebody. But I did not want to be a nurse or a Certified Nurse Assistant or nothing like that where you would just come constantly in direct contact. So I went for an x-ray one day and started talking to the tech, and this is something I can consider. So, I was in between computers and health care, and once I got accepted into the program, I went into health care.

Donna noted,

I fell into it. My first love was psychology. That is what I always wanted to do. I've always been interested in it since high school. I made up my mind that was what I was going to go to college and get my doctorate and become a clinical psychologist. But then I went away to college and got into the party scene and did not go to school. I was on my own for the first time at 17 and 18 living by myself. When I finally went back to school, I didn't know what I wanted to do. I can't do psychology because it was too much schooling. I'm going to need to be in school for at least five years to make any type of legitimate money in that field. That's when I decided okay, what could I do in two years that I see myself doing that I'm interested in? I was like, x-ray! I didn't want to be a nurse, but I think x-rays are pretty cool. So I looked up and did some research and said ok I can do this.

The stories of the participants detail the importance of the allied health workforce to engage in recruiting students into allied health programs. According to the Sullivan

Alliance, a committee formed following The Report of the Sullivan Commission on Diversity in Health care Workforce in 2004, in 2010 African-Americans, Hispanics, and American Indians constitute almost 30% of the U.S. population (Sullivan, 2004). Yet in 2007, these groups accounted for only 9% of physicians, 7% of dentists, 10% of pharmacists, and 6% of registered nurses.

Clinical Affiliate Orientation Experience

The minority population working in health care is not growing at the same rate as the number of minorities in the United States. According to the U.S. Census Bureau (2008), by 2050 it has been stated that more than one-third of the population will identify themselves as minorities. Despite the efforts of the national government to focus on increasing the number of minorities in the allied health profession, there has been little to no increase in the number of minorities enrolled in health profession programs (Baldwin, Woods, & Simmons, 2006). The Institute of Medicine addresses the inequities of the present workforce by calling for advancement of cultural competence in the health care workforce (Baldwin et al., 2006). The U.S. Bureau of Labor and Statistics (2011) noted that for health care practitioners and technical occupations, 80% of employees are Caucasian, 10% are African-Americans, 7.8% are Asians, and 6.7% are Hispanics. In 2009, the American Society of Radiologic Technologists (ASRT) estimated that 87% of its members are Caucasian, while African-American account for 3.4% of ASRT membership, Hispanics account for 3.6% while less than 3% of ASRT members are Asian Americans, and about 1.5% are Native Americans.

When addressing the issue of minorities in medical school, Taylor and Rust (1999) reported that minority students might face significant social barriers while in

medical school that make them feel isolated. The authors argued that success for learners from different ethnic and cultural groups could be nurtured through a supportive learning environment along with teaching that is successful with all learning styles and that values students' diverse cultural identities. Community College was chosen because it is located within an area that is heavily populated with minorities, thereby the increased number of minorities at the college. The demographics for Community College include a surrounding community with a total population of 363,736, which includes 11.9% Hispanic, 38.9% Caucasian, 46.8% African-American, and 1.2% Asian (2012).

Earlier studies of Van Gennep (1960) reported that students enter three stages during their rites of passages when maneuvering through higher education. He argued that each stage in the rites of passage necessitates a change in the patterns of interaction between the student and his/her environment. In the first stage the student leaves the precollege community and transitions into the new community, adopting the ideals and behaviors of the existing members of that particular society of higher education. In the second stage the student finds adequate means to communicate and connect to the society he/she wants to enter. However, it is at this stage that minority students have difficulty gaining access to their mainstream college culture. The final stage is the student reemerging into his/her newly defined social status.

Loo and Rolison (1986) reported the tendency of minority students to experience isolation in colleges where Caucasians predominately attend. Allen's study (1988) reinforced this idea; 45% of African-American students perceived themselves to be either very little or not at all part of their university's general campus life. Fleming (1985) conducted research and found that African-American students attending African-

American colleges reported higher levels of success and satisfaction with academic life, particularly in terms of relationships with the faculty.

In this current study, it was interesting to hear the students discuss their first impression when they walked into the clinical hospital affiliate and observed few, if any African-American or Hispanic radiography technologists. Research with specific examination of minority radiography students' perception of the low number of minority radiographers is limited. Donna discussed a conversation she had with the African-American technologists she has met. She stated,

I've spoken to other African-American techs and they said they are happy to see three Blacks at this clinical site, and in my day you would have never seen it. They told me stories how their clinical instructors at their clinical sites treated them, and they said it is totally different now. I'm blessed because the ones that came before me didn't have it this easy. They purposely tried to weed them out and give them hard times so that they would quit, and a lot of them did. But the ones that stuck through it, they said it made them better, made them stronger obviously, and they are working now, and they're helping other Black students coming up to show them the way.

Tracy stated, "My first experience, there was not pressure or anything, but there wasn't any Black technologists. I didn't see them. I didn't work with them, and if they are on the night shift or something, I didn't see them." She was then asked about how it made her feel, and her response was, "I'm out here by myself. Am I really going to get a job? Are they going to hire me because I saw nothing but Hispanics and Caucasians?"

Terrence explained,

It was all Caucasians. I didn't meet a Black technologist until later. It was overwhelming. Growing up, I was from a small town where I have been the only Black in the class, so that part didn't bother me. It was sometimes I have felt that they were more hands on with some of the White kids. I guess I can understand that you feel more comfortable with who it is because when I met Jerri, and she came, the Black lady, I automatically felt drawn to her, being from a small town. I was used to being the only Black in certain areas, but once I saw her, I was like, oh, it's one of us here. She was really nice.

Dominic felt intimidated because his first rotation was at a large hospital, not one of the smaller off-site clinics. He didn't feel any racial tension. Dominic stated,

I thought I got in over my head. I was scared. I would hear that it was so hard and so intense; you are not going to have a life. It's nothing but study, study, study! I'm an average student. I'm not great, but I have the potential to be great. So when I walked in and saw all the young faces, I got nervous. I just felt intimidated, but you can't be intimidated, you got to worry about yourself and block everything out and look ahead. But yeah, I was scared. I was intimidated, and the lack of knowledge; I didn't know to ask, you know, I didn't know I could have asked.

Tina stated,

Oh, my gosh! I was nervous! It was a good experience. You have to stay focused. Now there were only two people that looked like me. I didn't work with them often, but they were so helpful. I really appreciated meeting them. But everyone else was helpful too. I didn't have a bad experience. It didn't put a bad taste in my mouth. And no one was stand-offish, so I thought they were going to be that way because I was a student, but it didn't happen.

Each of these students discussed their perceptions regarding the clinical affiliates and the low number of minorities, but none let it affect their transition into the professional phase of their education. In order to examine social integration between the student and the clinical affiliate, the relationship between the students and their supervisors and the students' relationship with the staff technologists must be surveyed.

Student Interactions with Clinical Supervisor and Staff Technologists

In order to have productive allied health programs, clinical affiliates must provide a place where students can learn through on the job training. Steves (2005) explained that clinical education is a form of experiential learning. It is active learning by doing; therefore, clinical instructors play an essential role in the student's progression through the program. Successful programs have clinical affiliates that welcome students and provide a place where knowledge is shared between staff and student. Clinical affiliates

can be defined as accredited hospitals or clinics that are affiliated with an allied health program that provides the professional education for the students. Clinical affiliates must offer an environment that emphasizes teaching excellence. They sign a written agreement to support the allied health program. Community College has eight clinical affiliates for their radiography program. Two of the affiliates are clinics while the other six are hospitals. Registered technologists associated with the clinical affiliates must present themselves as willing to play dual roles of being educators and taking care of their patients. They must be willing to share their knowledge and technical skills with students as well as provide the patient with accurate, concise, and timely treatment.

Research has shown that in order to provide a positive learning environment for the students, the clinical instructors must have effective interpersonal communication between the students, patients, and other technologists (Swann, 2002). Interpersonal communication helps develop and nurture the mentoring relationship between the clinical instructor and student. Steves (2005) explained that there are three key educational skills for clinical instructors: (1) planning and implementing instruction, (2) objectively analyzing student performance and giving feedback, and (3) facilitating learning. Richardson (1999) stated that the manner in which students learn to act as a professional is determined by their interactions with other students and the professional staff. Conway, Lewis, and Robinson (2008) completed a study examining radiography students' perception of role models within the profession. They defined a role model as one who can encompass a wide range of ideal attributes, seemingly different from one individual to the next. Although role models are generally seen as individuals who create a positive working environment, there are, however, role models who possess negative

attributes (Gibson, 2003). Conway et al. reported that approachability of a role model is a key attribute when a student is learning and unsure of certain aspects of the profession. Communication is also reported as a key attribute of a role model. Role models who demonstrate superior patient communication skills provide students with means of facilitating successful communication between the student and the patient.

Each of the participants in the study told stories regarding their relationships with their clinical instructor. Depending on the clinical affiliate, the stories were different; some students had good role models, and some didn't. For example, Terrence felt that the technologists spent more time teaching with some of the other Caucasian students. Terrence noted, "They were nice; the majority of them were nice. I had one clinical instructor; she was really nice. Sometimes I felt that they were more hands on with some of the White kids. The younger White guy they would do more."

While Tracy felt no pressure, she stated, "I had a pretty good experience on my first day in the clinic. We had breakfast. He (clinical supervisor) was hands on (worked alongside the student). From the whole summer, I seen him every day, and we talked to him in the beginning and at the end of the day."

Dominic also felt that some students were treated differently and stated that one technologist in particular, who had many years of experience, was not nice to the students. Dominic noted,

Intimidated because my first place that I went to was a clinic. It wasn't like a small personal environment; it was like a big hospital. I was intimidated. The techs there were nice except one. I didn't feel like any racial tension or anything.

When discussing the technologists teaching strategy Dominic declared,

As for knowledge from our instructor, there she was kind of iffy. She would give us the basic information and not go into details. At the end of the day Caleb and I

would look at each other. She was barely there. She wouldn't interact with us, and when we would come back to class, everybody would say, 'Oh, I loved it there, and the instructor is so cool and take us out to breakfast, and they sit there and question us every morning.' Caleb and I would look at each other; we didn't get that. We barely saw her.

Tina mentioned what she liked the most was that the staff was graduates of the program, and she stated that was good to see. Tina stated,

Some of the students were just out a year prior. You can see the progress. They were in your seat, and now they are at work. This is what you have to look forward to. It is possible it can be done. You have to stay focused.

Donna felt the technologists were amazing, and she hadn't experienced anything negative. However, once she changed clinical sites, it was not the same. Donna stated,

My first clinical supervisor was phenomenal. She knows so much, and she took it upon herself to teach us everything - even things we had not covered in school. She would try to highlight and try to get us to understand that because it would help you understand the next thing. The techs were amazing. I haven't experienced anything negative. However, it was not the same at all sites. The techs at the other sites had personalities that were just more click, I guess I would say. There are a lot of techs that I'm sure, you know, don't care for students. They are not teachers, and they do not want to take you under their wing and show you, and that's cool. No one has ever treated me badly. I am usually the type of person that if I go into a situation that I feel negative energy, I will try to combat that by being incredibly positive.

Valerie felt welcomed with the clinical supervisor but not so with the technologists. She stated, "The technologists showed us what to do, but they were not friendly." When speaking about her clinical supervisor, Valerie stated,

I love her because she was the one that would correct you when you are wrong, but the way she communicates with you is never belittling or anything. It's like she always uses supportive words. She says things to build up your self-esteem as opposed to tearing you down. She is always there to communicate, and if you have any questions, she's always there to answer.

Swan (2002) noted that communication for learning in allied health is a two-way pathway that moves between the technologist and the patient, and the second is between

the technologist and the student (2002). In the Conway et al. study (2008), radiographers who stood out as role models were those who allowed the students to assist from the beginning care of a patient until the end of the examination. Radiographers who enjoyed having students in the department were also recognized as role models. However, some of the participants in the research did not perceive their radiographers as role models.

Caleb noted,

Nobody tried to warm up to you. It was a lot of silence. I wasn't in a corner; I tried to be in the mix. I wasn't shy, but nobody really tried to go out of his or her way to make you feel at ease until you may get that one tech that would try to make you feel comfortable and then everyone else would follow his or her lead. But it takes one person to do it.

Caleb also felt that the technologists were nicer to the Caucasian students, which was also noted by Dominic during his interview. Each of these students had their own experiences for their first impression to their clinical affiliate, but as time progressed each student learned to adapt to their clinic and find their way through the program. When I asked Caleb what made him stay, he responded,

Cause it's bigger than that. Things change later on, and I found my own little comfort. I can't be quitting. I don't have the time to keep quitting and trying different things. I like to finish what I set out to do.

Tinto's Model of Attrition

The relationship between the students and the staff is vital for learning to occur. Communication between clinical instructors and students is critical for learning. The clinical affiliate should be an environment for learning and observing the technologists. Steves (2005) described clinical instruction as a set of planned experiences designed to help students acquire skills, attitudes, and knowledge by participating in the work setting. On the first day for a student at the clinical affiliate there should be an orientation

provided to assist the student in knowing his/her way around the hospital, meeting, and communicating with staff in the department, and learning their role in the department. In Tinto's original theory (1975), he specified five specific factors that contributed to student retention at an university: (1) a student's pre-entry attributes, (2) goals and commitments, (3) experience at the institution, (4) external commitments while at the institution, and (5) integration both academically and socially (Metz, 2002). Tinto believed that if students can separate from their familiar customs and norms, they would find the transition into experiencing full social integration and academic success within the university setting. This same framework can be applied to the clinical affiliate.

In order for students to become familiar with the customs and norms of the department there should be an orientation for new students interested in the program, and there should be an orientation on the students first day at the hospital clinical affiliate. When interviewing the participants, the question was asked if there was an orientation for new students interested in allied health programs. They all spoke about the admission counselors who assisted them, and each shared their story. Therefore, the question focused on how they found out about the program. All of the students came to the school interested in the radiology program. Each stated that they had met with a counselor at the school who provided them with a list of the core subjects and pre-requisites necessary to be accepted into the program. Most stated that they did not meet the Program Director until they had gotten accepted into the program. Dominic stated,

The first time I met the program director was at the orientation meeting once I was accepted in the program. I was meeting with the school counselors to get information. She was the one telling me what classes to take and not to give up. I didn't know what to ask. I didn't know to look for the program director.

Terrence explained, “I met with the counselor first, and I showed her my transcripts of what I had I already started in Dallas.” Tracy explained,

I went to a counselor to set up my pre-requisites because I was a sociology and radiology major. He told me to pick a field. When I was in biology, I was talking with one of my classmates, and they were doing radiology and that’s when I decided to choose radiology.

Tracy was asked if the counselor guided her by explaining the differences of the two programs. She replied, “He told me if you want to do sociology or radiology, you need to make up your mind. He told me they got two different pre-requisites, so I had to pick one.”

The researcher asked Valerie about when she came to Community College, did she meet with the counselor, and she stated, “Yes.” The researcher then probed and asked if she had met the program director before entering the program, and she further explained, “I had to take some paperwork to her once, and I had to ask her a couple of questions and then from there it was like orientation.”

Caleb was asked if he thought an orientation with the program director before entering the program would have been helpful. He responded,

Yes, I think it would have been optimal to do it before I had even took one class. I already knew in the beginning that I wanted to do it. So I think it would have been cool before you even commit to one class toward the program to sit down and go on a tour to get some type of understanding of what is expected. Because even when I was accepted, I had already did a year and a half, so if I would have gotten to that part and decided I didn’t want to do this, that would have been a year and a half wasted.

Next the researcher focused on orientation at the clinical affiliate. The questions used were to determine if the students would benefit with having an orientation on their first day at their clinical site. The orientation could play a pivotal role in the students adapting to their clinical affiliate. According to Tracy,

I had a pretty good experience on my first day in the clinic. Our supervisor was really warm and welcoming. He explained everything we need to do. We went on a tour, and we had breakfast with our supervisor. Everyone was really nice.

When Dominic was asked how instrumental was the orientation process in helping him to becoming familiar with the clinical affiliate, he stated, “Me personally, no! I need to see it more than once, and we did like a quick overview.” He then was asked about the content of the orientation. He replied,

She introduced us to the techs. She introduced herself. She explained their procedures of what they do, like being late, checking in or checking out. She showed us the locker room. She gave us our breaks. She showed us where the ER room was. She showed us the general area.

The participant was then asked if he met the other staff or doctors. He replied, “No! That’s another thing. We never met the physicians; we never went into their office.”

While discussing Valerie’s clinical orientation, she stated,

I don’t know how the process goes on how they are supposed to introduce students. There wasn’t any welcome, but they did show us what needed to be done. This is what you need to do as far as treating the patient, transporting the patient from here to here, as far as paperwork, the do’s and don’ts throughout the department and knowing the stuff you needed. Of course, they introduced themselves, but it was not like, ‘Let me tell you something about myself.’ It was, ‘Hi, my name is, and let me show you what you are supposed to do, where you put your stuff, and where this goes.’

Terrence related the distinct difference between clinical sites, and their orientation for new students. He explained,

Well, we walked through the door, and she was like, ‘They’re the students.’ She handed us paperwork. She walked us into one of the rooms we would be working in. She was helpful, and if we had questions, she was very helpful. She was very supportive and very encouraging. If we did something good, she would say, ‘Good job and I’m proud of you.’ Whereas, as I go to the other clinical sites there ain’t none of that. I came in; I didn’t know where I was supposed to go. We all were lost when we walked into the door, and this is it. These are the rooms. You might want to go and familiarize yourself with the equipment and introduce yourself to the people.

Donna stated, “The first day they took us on a tour, familiarized us with the equipment and where everything is. Tell us what our duties are as a student. Yes, we did have an orientation, then they threw us to the sharks.” She was asked if the orientation was helpful in becoming familiarized with the hospital clinical affiliate. She stated, “I think it was very good. It’s like your first day on the job. You become familiarized with your co-workers and your supervisors, the patients, and their policies. I think that was definitely a good thing.”

Tina explained,

They gave us a tour around the hospital. The way they had set it up, in the summer we did a week in each aspect, even in transport, so you can learn your way around the hospital as well. Our program director was there that day; she’s actually the lead technologist over there. She took us around, showed us where the linen was. We had to stock linen. She basically gave us what we needed to do at that aspect at the beginning. ‘We are not expecting you to shoot X-rays today or this semester, but we do want you to stock the linen for the techs, make sure you wipe down the rooms after each patient. To check and verify patients too, if you go out into the holding area and bring them in for the technologist. You know how to verify them using their bracelet and having them verbalize it as well.’ She took us around and showed us the different departments in the different areas, just basically an introduction that’s all.

Again she was asked if the orientation was helpful in becoming familiar with the hospital clinical affiliate, and Tina replied,

Very instrumental! I think it was very instrumental. It kind of got you into the mood. I’m here now. I have to take ownership because I’m expected to do this, and now I’m going to go ahead put my best foot forward.

Probed further, she was asked about if she didn’t have orientation, would it have made a difference. Tina responded,

Yeah, because I wouldn’t have felt comfortable. I would have felt that I had to ask a lot of questions. This hospital is a very busy hospital and so me knowing that I didn’t have to keep disturbing the techs, I asked them for things because I had that orientation, and I knew what I needed to do. I didn’t have to disturb them or take them away from treating a patient. I can do it myself. I can take initiative.

The next set of questions examined the relationships between the student and the technologists. Were the students able to assimilate to their new environment? Valerie's response as to what made her clinical site inviting was,

The patients, the staff, everybody, there is real family type. It's like everybody, there is, 'Oh, good morning,' cheery and close and all of that. They're always doing like whatever. They are like fixing a little lunch. They would include you in it. If they are ordering out or whatever they are doing, they would include you; stuff like that.

Tina recalled her relationships with staff.

Good, very good! You know how you can go somewhere, and they talk over you. I didn't get that. They talk to us. They would tell us, "Oh, come here. Let me show this, or I'm doing this because." They incorporate our learning into what they were doing as well. It wasn't just the teacher that was doing it. It was even the technologists. They took that extra step because they don't get paid to teach us. You know, so that means a lot. The instructors are getting the extra money. The techs are not so, and they were hands on with us. 'Let me show you another way to do this. You can also do this that way.' So you learned a little bit from everybody. They really like, incorporated us. It was only one, and she had problems with every student. But I don't let that kind of stuff deter me because that's her problem. She's a very condescending type of person, but that just speaks volumes to her, not necessarily to me.

The question to Tina was how did she handle that? She responded,

With a grain of salt! I'm still me. I don't change for anyone. I do not let anyone take me out of my element. That's her problem, not mine, and I know I'm not her problem. I'm still Tina! I speak when I'm working with her. I'm still respectful. I'm never nasty. But just that...you are going to deal with them wherever you go.

When examining Tinto's Model of Attrition (1975) concentrating on assimilation, the research question focused on what factors attributed to students' success during their clinical rotations? Spirituality and determination were the key words offered during the interviews. Each participant offered his/her own story. When this question was first asked to Tina, she became emotional. Tina stated, "My spirituality! Just knowing...I'm

a crybaby. I'm sorry." As tears streamed down her face she stated, "You are going to make me cry. Just knowing I'm doing God's work."

Dominic stated,

The way they would critique what I do. They don't step on eggshells. They're blunt! They're completely blunt and straightforward. I guess they feel students get nervous, or they feel stupid for doing that to them. I don't; I rather you be honest and forward with me and not baby me cause that way I can learn from it. They're straightforward.

Donna noted, "Schooling and familiarity with different groups of people, different types of people and not being biased or having any type of stereotypes. That can hinder you in the real world." Caleb stated, "Just knowing I'm not going to quit, period! I don't have a choice basically." Upon being probed further, he stated, "Cause it's bigger than that. I don't have time to keep quitting and trying different things. I like to finish what I set out to."

Terrence declared,

I have no choice but to finish this. I have sacrificed a lot. I've moved on my own at an early age to the Midwest. I only had one cousin that was here. I had to quit a job that supported me for five years just for this. That's my main motivation. I've given up so much. I refuse to fail now after I've done so much to be here in this position.

Tracy mentioned,

You go in there with a positive attitude. A lot of students really take it personally, but sometimes the technologists will put an effect on them so bad that they can't see the goal at the end - why you are in it. Those people already have a job, so they already been there. So, don't let them tear you off your track. I think that me coming in there, I'm going to do it. I have to do it. It's my goal. They got a job, and I'm trying to get a job. This is basically what it is; just stay in there and do it. I need to finish.

When talking with Valerie and asking what factors attributed to her success during her hospital clinical rotations, she stated, "It's a lot. Repetition, constantly doing the same thing. Definitely support from home, school, surprisingly the teachers, some of the students that I work with." When asked if at any time she felt like she couldn't do it,

she responded, “Definitely.” She was then asked what keeps her going, and her response was,

The fact that I want to finish. I’m not giving up. It’s not impossible. I can do it. I got through these semesters; I just have to do something different. It may be a hurdle, but I just have to jump over it just like I did the other ones. It may change up in how I study, the time I study, what I study. You are going to get over it. You got to keep pushing. Quitting is not an option. Who does that? You can’t quit and expect to achieve anything. Everybody who gets something appreciates what they get. They earned it. They work hard for it. It’s not going to come easy. If that’s the case, everybody will have it. So strap down, suck it up, and keep moving (laughter). I may cry and get frustrated, but at the end of the tears or whatever, it’s like now what you do, go over there and pick up the book and read.

Summary

This chapter examined the lived experiences of seven minority students in the radiology program at Community College. The goal was to examine the low number of minorities in the radiologic technology program and their assimilation into their hospital clinical affiliates. Students in the allied health profession must adapt to the college environment and then adapt to the clinical environment. This chapter detailed the students’ perceptions of their clinical experiences. Some affiliates had supervisors and technologists who were role models and provided the student with the skills necessary for learning to take place. The participants shared their stories detailing how they were welcomed at some sites and others not so much. The participants also expressed their concern for the low number of minorities who were present in their clinical affiliates. The next chapter discusses recommendations suggested by the participants for increasing the number of minorities in allied health and if any changes need to be done to provide students a smoother assimilation into their clinical affiliates.

CHAPTER FIVE: DISCUSSION

Overview of Research

This phenomenological research provides an examination of the low number of minority students in the allied health profession, specifically students in the radiologic sciences. The seven participants in this research provide a glimpse into the radiologic science profession from a minority student's perspective. In Chapter Four, each participant discussed how he/she discovered the profession, how he/she assimilated into the clinical environment, and a perspective about his/her time in the clinical environment. During the conversations the participants expressed excitement, fear, anxiousness, and feelings of accomplishment. The interviews also demonstrated awareness of the low number of minorities currently in the field.

In Chapter Two, the research documented the low number of minorities in the radiology profession. The American Society of Radiologic Technologists [ASRT] (2009), the professional organization for radiology and radiation therapy, noted the minority breakdown in the profession is 3.4% African-American, 3.6% Hispanic, 3% Asian American, and 1.5% Native American. The research also cited the number of minorities in the health care profession and the rationale for increasing the numbers. The participants in this current research experienced firsthand the low number of minorities at their clinical affiliates. The participants have seven clinical affiliates associated with their program, with each site having five or more technologists working during the morning shifts. The total number of minority technologists working, as documented by the participants, was four African-American technologists, but some sites had none. Some of the participants discussed specific moments when they realized that they were

the only minority at the clinical affiliate and what effect it had on them. During the interviews the participants discussed their reaction and their concern for themselves once they are ready to enter the market as registered technologists.

The research also examined what effect the low number of minorities in the clinic had on the minority students assimilating into their clinical affiliate. The research involved examining Tinto's Model of Attrition (1975) and its role in the hospital clinical affiliate. Tinto believed if a student was able to assimilate into the new environment, that student would be successful. Tinto's model provided a workable foundation for analyzing the multiple factors involved with student departure. The factors that contribute to student retention, according to Tinto, include a student's: (1) pre-entry attributes, (2) goals and commitments, (3) experiences at the institutions, (4) external commitment while at the institution, and (5) integration both academically and socially (Metz, 2002). Tinto's model was applied at universities; however, this research questioned if these same factors could be applied while examining the students in their hospital clinical affiliates. The interviews showed how the participants were able to assimilate into their new clinical affiliates. During the interviews the participants discussed how some clinical affiliates were friendlier and more welcoming than others, but none of them felt the need to leave the program. Some clinical affiliates provided an orientation on the first day at the affiliate, and some did not. In those that provided an orientation, the participants felt more at ease and part of the department.

In 2003, Louis W. Sullivan, M.D., Secretary of Health and Human Services, implemented the Sullivan Commission on Diversity in the Health care Workforce (Sullivan, 2004). The Sullivan Commission consisted of 16 leaders in business, health,

higher education, law and other fields. They developed recommendations to bring about systemic change that would tackle the scarcity of minorities in health professions in the United States. Even though the Sullivan Commission concentrated on physicians, dentists, and nurses, it was aware of the scarcity of minorities in pharmacy, public health, and the allied health sciences. The Sullivan Commission's goal was threefold: (1) to increase diversity in the health profession, (2) to explore new and nontraditional paths to the health profession, and (3) to provide commitments at the highest level of government and in the private sector. The Sullivan Commission's goal of increasing minorities into the allied health profession is still continuing.

Recommendations

After completing the research and interviewing the participants, several recommendations are suggested for the radiologic science profession to implement in order to increase minority students. Colleges and universities need to improve the recruitment of minorities into the allied health professions. The radiology profession needs to provide more opportunities for minority students to enter the field. Several institutions have developed bridge programs between high school and college. This type of program offers two benefits: (1) to provide college access to high school students, and (2) to display the viable academic programs universities have to offer. Chicago State University (CSU) offers a program called Summer College (Chicago State University, 2013a, 2013b). Chicago State University's Summer College is a six-week enrichment program designed to prepare minority and /or underrepresented students in the 6th-8th grades for college and beyond. CSU also offers Saturday College, which targets minority students who are interested in the health profession and who are currently in the 6th-12th

grades and live in areas with a health professional shortage in the city of Chicago and surrounding suburbs. The purpose is to increase the academic preparedness of middle school students to enter high school at or above state average levels on the Illinois Standard Achievement Test (ISAT). The 26 week program provides the students with academic experiences and exposes them to public health science research. The activities of the program are expected to increase their interest in science, mathematics, and public health research and to motivate them to take Honors level and Advanced Placement science courses in high school. However, during the interviews, Dominic provided a different recommendation of a bridge program, which included allied health career fairs. During the interview Dominic was asked if there is anything that can be changed to start getting minorities in the field and what should be done. Dominic replied,

I would start in high school because in high school for the kids that have good grades they are already thinking universities, getting out of the house, and going out of the state. For kids that are average and below, they are looking for the jobs with the family members. I would start in high school and try the nurses' aides, rad tech, the allied health careers in an allied health career fair or make sure the junior colleges attend a high school job fair and get it out there. And don't send a White tech, send minorities, send Blacks and Mexicans and Asians. Let them see that it is possible. I wish someone had done that. We need to be exposed. Even at church because especially for us, a lot of Mexican moms are desperate trying to get their kids in line and veer them off from the gangs and the drugs and stuff.

In essence Dominic was stating, go where the students are. Meet them in their own surroundings and send recruiters in who resemble them.

The same question was presented to Valerie, and her comments centered on publicizing radiologic sciences.

Publicize it more, like put it out there. People really don't...like they know about doctors, lawyers, nurses. They know about CNA or LPN because they have to get a little certificate for that, but when you think a degree, you automatically think four years. They are not knowledgeable about what it really is, what it is about, what it consists of. Once they hear x-ray, they think their hair is going to fall off,

or their skin is going to fall off. I think maybe educating people more on the perks of being a tech because I think it's great.

Valerie was then asked if the education should be done in the schools or churches. The researcher asked her how she would go about this education. Valerie responded,

I think it would start in school because that's where kids start developing their personality on who they want to be and what they want to do. Everybody is shooting for highest, which is the doctor, but what about something else that is in the hospital that is doing good? It could be speech therapist or an x-ray tech. Just different positions in the hospital that keep the hospital running. It's not just being a doctor. So, I think maybe it starts there! That's where they do the projects about what you do want to be when you grow up.

Dominic's idea is a great one. In order to capture minority students the profession needs to develop bridge programs to promote careers in allied health. For example, deceased Judge R. Eugene Pincham, African-American civil rights attorney, judge of the Circuit Court of Cook County, Illinois, and Justice of the Appellate Court of Illinois, brought several African-American judges to an African-American church for their Law Day Celebration. He spoke about the importance of law and the role it played in African-American history. He brought with him the members of the Cook County Bar Association with over 50 African-American judges and lawyers, which he introduced to the congregation. While speaking he stated, "A child cannot be what they don't see." This is a powerful statement that should be used as a mantra to increase minority involvement in the allied health professions.

Therefore, the first recommendation would be to prepare a bridge program for minority students interested in the allied health professions. This program should have a university in urban America to extend a bridge to high schools within their immediate vicinity. The programs will provide high school students the opportunities to explore careers in allied health by having students who are allied health majors meet and discuss

the allied health careers. The program should also provide high school students tutoring in the math and science arena. Finally, the program should provide high school students the opportunity to see the allied health field up close by providing tours and workshops in the clinical affiliates associated with the allied health programs at the university.

This leads to the second recommendation which is to start a bridge from grammar school to high school. Students' success in math starts early. In the elementary level there should be a strong concentration on the science and math arena. These two disciplines are needed for any allied health profession. According to W. Stephen Wilson (2009), Professor of Mathematics at John Hopkins University and former Senior Advisor for the Mathematics Office of Elementary and Secondary Education in the U.S.

Department of Education, the foundation for K-12 mathematics is laid in the early years of elementary school. To succeed in college, this foundation must be solid. Again the same concepts apply, placing elementary students in an environment promoting academic excellence through tutoring and mentoring with high school students, thus laying the foundation for students' success in math and science. The program would include workshops to assist elementary school teachers in math and science. The workshops would focus on the importance of learning math and science and demonstrating how it relates to different occupations. The idea of knowing how to do a math skill is excellent; however, the benefit lies with understating the concepts. Wilson noted that it is difficult for many 4th grade teachers to see the connection between what they need to teach and why it is necessary for the future doctor or radiologic technologist, but college professors who regularly teach math know exactly why it is important to understand the concepts.

Future Research

The radiological science profession needs to provide more research in the radiologic sciences. Radiologic technologists with doctoral degrees make up a small percentage of the American Registry Radiologic Technologists (ARRT) registered population. Metcalf, Adams, Qaqish, and Church (2010) reported that the number of credentialed technologists was 289,007, and of this population only 0.15% held doctorate degrees. Therefore, there are not enough technologists to implement research involving the radiologic sciences, especially regarding minorities in radiologic sciences. This current research project involved minority participants who were currently in the program and on track for graduation, but further research could involve students who have left the program before graduation. The research would be interesting to see the reasons why they left. Another research investigation could involve examining the technologists and exploring how they perceive minority students. This research would involve exploring the hospital's diversity policies and cultural competency and how the technologists apply it when teaching their students. Another research project could be one involving the chief technologists and manager in the radiologic technology department who are instrumental in hiring to get their perspectives on minority students entering their places of employment or in teaching minority students.

Conclusion

Even though each of the participants had stories that could have derailed their progress to completion, all of them are on track to graduate. All of the participants of this research had a desire to complete the program. All of the participants were identified as nontraditional students; some were married, some had children, some had decided to

enter college late in life while some had dropped out of college and returned later. The U.S. is becoming more diverse, and the health care profession must also become more diverse. The rationale to increase minorities in health care has a profound effect on health care. The need to increase minority leadership in health care can lead to the increase of research for minority health problems.

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APPENDICES

APPENDIX A

Permission to Conduct Research Study

Appendix A

February 15, 2013
 Ms. Shari McGovern
 Program Director, Radiologic Technology Program
 South Suburban College
 15800 South State Street
 Room 4453
 South Holland, Illinois 60473-1200

RE: Permission to Conduct Research Study

Dear Ms. McGovern:

I am writing to request permission to interview some of your minority students in the Radiography Allied Health Program for my doctoral dissertation. I am a doctoral candidate currently enrolled in the Educational Leadership Program at Argosy University here in Chicago, IL. My dissertation involves exploring the low number of minority students in the allied health profession and to ascertain whether students' perception of their hospital clinical affiliates play a role in student retention.

The target population for this study includes minority male and female students in their professional phase of their program who have attended their hospital clinical affiliate. I will need to recruit six students who meet my selection criteria to be interviewed for 60 minutes and to participate in a follow-up interview for 30 minutes.

Your approval to conduct this study is greatly appreciated. Please feel free to contact me if you or Dr. Jeffrey Waddy has any questions. I will follow-up with a telephone call once I have been approved. You may contact me at my email address: edawson1@stu.argosy.edu or my phone number 773-XXX-XXX. You may also contact my Dissertation Chairperson, Dr. Renae Jacob, at Argosy University, 312-777-7768.

If you agree, kindly sign below and return the signed form.

Sincerely,

Elva M. Dawson

Approved by:

Print your name & title above

Signature

Date

APPENDIX B

Email Explanation of Research

Appendix B

I, Elva Dawson, am a Doctoral Candidate in the College of Education at Argosy University. I would like to invite you to participate in my research study to examine the role hospital clinical affiliates play in the success of minority allied health students. Current minority male and female students in the radiography and respiratory therapy allied health program who are attending a two-year institution and will receive their associate's degree as well as graduates of two-year institutions who have received their licensure in the allied health profession are eligible to participate.

As a participant you will be asked to participate in one 60 minute interview and one 30 minute follow-up interview. The interviews will be audiotaped and transcribed. You will have an opportunity to review the transcription. All information received will be confidential. No monetary compensation will be given for the study.

If you would like to participate in this research study, you may email me at edawson1@stu.argosy.edu. If you have questions, please contact me at 773-XXX-XXXX, or you may contact my advisor, Dr. Jacob, at 312-777-7688.

Thank you for your consideration.

Elva M. Dawson

APPENDIX C
Informed Consent

Appendix C

Consent Form

Hospital Clinical Affiliate Role in Allied Health Programs and Its Effect on Minority Retention: Using Tinto's Model of Attrition

I have been asked to participate in a research study examining hospital clinical affiliates' role in allied health programs and its effect on minority retention using Tinto's Model of Attrition. I was asked to be a possible participant because I am a minority student in an allied health program. A total of six people have been asked to participate in this study. The purpose of this study is to examine minority students in allied health programs and their reflections of their hospital clinical experience.

If I agree to be in this study, I will be asked to participate in two interviews. Each will be audiotaped. This study will take 60 minutes for the first interview and 30 minutes for the second interview for a total of 90 minutes. Risks associated with this study may include anxiety or nervousness of the participant during the interview. Apprehension may be experienced by the participant when discussing uncomfortable situations during their clinical experience. The benefits of this study will provide the allied health field with possible solutions for increasing minority representation in the field. Benefits may also include the development of a cultural curriculum to address minority representation in the allied health field.

I will receive no payment or reimbursement for participating in this study. This study is confidential. Participants' information will be coded in order to keep their names confidential. The records of this study will be kept private. No words linking me to the study will be included in any sort of report that might be published. The researcher, Elva

Dawson, will transcribe audiotapes, and she will be the only one who will access the records. All records will be securely stored. I have the right to get a summary of the results of this research and can contact Elva Dawson if I would like to have them.

I understand that my participation is strictly voluntary. My decision regarding my participation will not affect my current or future relations with Argosy University or Community College. If I decide to participate, I am free to refuse to answer any of the questions that may make me uncomfortable. I can withdraw at any time without my relations with the university, job, benefits, etc., being affected. If I have any questions about the study, I can contact:

Principal Investigator- Elva Dawson

773-XXX-XXXX

9542 S. Lowe Avenue

Chicago, IL 60628

Edawson1@stu.argosy.edu

Dissertation Chair- Dr. Renae Jacob

312-777-7688

225 N. Michigan Avenue, 13th Floor

Chicago, IL 60601

rjacob@argosy.edu

I understand that this research study has been reviewed and certified by the Institutional Review Board, Argosy University, Chicago. For research related problems or questions regarding participants' rights, I can contact Dr. Penelope Asay, Chair of the Argosy University Institutional Review Board at 312-777-7699, via email at psay@argosy.edu, or at 225 N. Michigan Ave., 13th Floor, Chicago, IL 60601.

I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study. I have been given a copy of this consent form. By signing this document, I consent to participate in the study.

Name of Participant(printed)_____

Signature: _____

Date: _____

Signature of Principal Investigator:

Date: _____

APPENDIX D

Questions for Participants

Appendix D

1. Are you the first one in your family in the allied health profession?
2. How did you first discover your allied health program?
3. What made you decide to go into the allied health profession?
4. Explain how your first meeting with your program director went.
5. What was your first impression when you arrived at the hospital clinical affiliate?
6. What aspect of your first impression welcomed you the most or the least at your hospital clinical affiliate?
7. What was your first impression of your clinical supervisor?
8. Explain your first day orientation at your hospital clinical affiliate.
9. How instrumental was the orientation process in helping you become familiar with the hospital clinical affiliate?
10. How was/is your relationship with your clinical supervisor?
11. How was/is your relationship with the radiographers/respiratory therapists at the hospital clinical affiliates?
12. Was there one thing that made your clinical site inviting?
13. Was there one thing that made your clinical site lengthy and uninviting?
14. How were you received by your patients?
15. Would you like to explain a specific incident with a patient that affected you?
16. How receptive to questions was the staff at your hospital clinical affiliate?
17. How are your clinical supervisors receptive to your questions?
18. What factors attributed to your success during your hospital clinical rotation?
19. If you can change any aspect of your clinical experience what would it be?