A CROSS-SECTIONAL STUDY TO DETERMINE BARRIERS IN THE EDUCATIONAL ADVANCEMENT OF THE LICENSED PRACTICAL NURSE TO THE REGISTERED NURSE IN THE STATE OF NORTH CAROLINA

A Dissertation

Presented to the Faculty of the College of Health Sciences

of Touro University International

in Partial Fulfillment of the Requirements for the Degree

of

Doctor of Philosophy in Health Sciences

by

Douglas M Turner

November 2003

A Cross-sectional Study to Determine Barriers in the Educational Advancement of the Licensed Practical Nurse to the Registered Nurse in the State of North Carolina

Douglas M. Turner

Touro University International 2003

Approved by: Sarah Hutslar, PhD

Dr. _____

We, the undersigned, certify that we have read this dissertation and approve it as adequate in scope and quality for the Doctor of Philosophy.

Dissertation Committee:

_____
Sarah Hutslar, PhD
Committee Chair

_____
Heeja Kim, PhD
Committee Member

_____
Frank Gomez, PhD
Committee Member

BIOGRAPHICAL SKETCH

Douglas M Turner began his nursing career in 1985 as a graduate of Wytheville Community College in Wytheville, VA. Mr. Turner earned a baccalaureate degree in nursing from the University of the State of New York at Albany in 1989 and a Master's degree in Nursing Science with a Critical Care focus from the University of Virginia in 1990. While at University of Virginia, Mr. Turner was educated as a pulmonary clinical nurse specialist with a subspecialty in ventilator management. In May 1992 Mr. Turner was awarded a Master's of Science in Nursing degree with a focus in Anesthesia from the University of North Carolina at Greensboro and completed an anesthesia residency at North Carolina Baptist Hospitals/Wake Forest University Bowman Gray School of Medicine in August of the same year. Mr. Turner has clinical practice experience in the areas of telemetry, medical-surgical, coronary care, medical intensive care, surgical intensive care, neuroscience intensive care, cardiothoracic surgery intensive care, tele-nursing, and anesthesia nursing. Since 1998, Mr. Turner has been employed as a lead nursing instructor at Forsyth Technical Community College in Winston-Salem, NC, as well as a faculty member of The

University of Phoenix Online since 2001. While at FTCC, Mr. Turner has developed and implemented the first online generic Associate Degree in Nursing program in the state of North Carolina.

To all the visionaries who came before me and paved the way to nontraditional approaches to education.

ACKNOWLEDGEMENTS

I would like to acknowledge the dedicated work of my committee chair, Dr. Sarah Hutslar, who never failed to respond to questions and concerns with quiet resolve. Equally, I acknowledge Dr. Frank Gomez, committee member, for his enduring encouragement and rational thought. And finally, Dr. Heeja Kim, committee member, for her expertise and willingness to serve on my committee.

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

A CROSS-SECTIONAL STUDY TO DETERMINE BARRIERS IN THE EDUCATIONAL ADVANCEMENT OF THE LICENSED PRACTICAL NURSE TO THE REGISTERED NURSE IN THE STATE OF NORTH CAROLINA

The purpose of this study was to identify barriers that prevent practical nurses in the state of North Carolina from pursuing registered nurse education. A cross-sectional sample of 128 practical nurses completed a modified version of the "Learning Interests and Experiences of Adult Americans" (Cross,1981; Powell 1989). A convenience sample of experts in the field of nursing, nursing administration, and nursing education were interviewed to triangulate the data. Logistic regression was used for data analysis.

Two barriers were identified that prevent practical nurses from advancing to registered nurse education in the state of North Carolina: Strict attendance requirements and required full-time study. It was determined that non-traditional approaches to practical nurse to registered education would reduce or eliminate the identified barriers. Nurse educators involved in practical nurse to registered nurse education are encouraged to closely examine program requirements for

the identified barriers and consider the flexibility offered by online education as a strategy to reduce or eliminate the identified barriers.

CHAPTER ONE: INTRODUCTION

The purpose of this research was to identify factors important in encouraging licensed practical nurses (PNs) in the state of North Carolina to pursue higher levels of education in nursing. It focused on the barriers and attitudes that prevent PNs from pursuing registered nurse (RN) education, and led to recommendations that may encourage these higher educational pursuits.

There is a need to encourage nurses to pursue higher education to help mitigate the long-term effects of the current nursing shortage, which has been a favorite subject of the news media for quite some time. With the baby boomers growing older and needing more care, there exists an ever-increasing demand for nurses and other staff to provide care for them. This problem is only expected to worsen and solutions to the problem must be found in the near future if this situation is to be resolved before it becomes a crisis. Many institutions have taken temporary measures to increase their nursing staff, but the result is the same: They cannot keep up with current demand, let alone a rapidly increasing future demand.

The Changing Demographics

The nursing shortage in the United States is severe and is only expected to worsen in the near future (American Hospital Association, 2001). One of the main reasons for this shortage is a change in demographics. The general population of the United States is aging and as it ages, it requires an increasing degree of health care. The nursing population is also getting older, with more nurses approaching retirement. Nursing educational facilities suffer from a lack of faculty and an aging faculty (American Association of Colleges of Nursing, 1998). The once steady decline of the general population of nurses has increased over the past few years, and there are a disproportionate number of lower level nurses practicing today. The nation needs more upper level nursing practitioners.

Levels of Nursing Education

Individuals may enter the nursing profession as either a practical nurse or a registered nurse. Practical Nurses (PNs), also known as vocational nurses in California and Texas, complete one year of basic nursing education. Upon completion of the educational preparation, the individual must successfully complete

the National Council for Licensure by Examination for Practical Nurses (NCLEX-PN) examination. Upon successful completion of the NCLEX-PN examination the individual may practice as a licensed PN.

The focus of PNs is to provide basic care to patients with chronic or stable conditions. However, patients in acute care settings have needs that are generally beyond the scope of PN education. Also, the PN is not allowed, by state law in North Carolina, to formulate a plan of nursing care, but instead may only implement the plan of care developed by an RN or physician. Practical nurses are no longer employed in the majority of acute care settings in North Carolina (North Carolina Center for Nursing, 2001). Many institutions that continue to employ PNs have stated that all PNs must obtain RN education as a condition of continued employment (personal communication with Patricia Johnson, Vice President of Nursing Operations, Wake Forest University Baptist Medical Center, June 2002).

Registered nurse education may be completed in the two-year community college setting to earn an Associate Degree in Nursing (ADN) or in the four-year university

setting to earn a Baccalaureate Degree in Nursing (BSN). A third option exists for entry-level education as a registered nurse and leads to a diploma in nursing. Diploma nurses receive their education through a hospital based nursing program that is not associated with a college or university. Upon completion of either educational curriculum, the individual must successfully complete the National Council for Licensure by Examination for Registered Nurses (NCLEX-RN) examination. Upon successful completion of the NCLEX-RN examination the individual may practice as a licensed RN. The registered nurse is prepared to care for all types of patients and by state law, in North Carolina, may develop and implement the nursing plan of care. The nationwide vacancy rate for RNs ranges from 12.4% in the northeast region of the United States to 15.8% in the southern region of the United States (American Organization of Nurse Executives, 2002).

Problem Statement

There is a need to increase the number of practicing RNs. One approach would be to encourage PNs to complete RN education. Obviously the present educational system does not excel in this area and perhaps an online or

distance education approach to PN to RN education would have a positive impact and result in more PNs obtaining RN education.

There are many sources of information in relation to registered nurse education with both an online and distance learning approach. However, no research was identified in an exhaustive search of the literature that pertains to distance learning in relation to practical nurse to registered nurse education. The demand for registered nurses, especially in the acute care setting, is exceeding the supply in many areas across the nation: This situation is only expected to worsen over the next 10-15 years (Bureau of Health Professionals, n.d.). In the state of North Carolina there are 15,555 practical nurses (North Carolina Board of Nursing, 2003) and the demand for the services of practical nurses has declined significantly in the acute care setting, for reasons already noted. Although PNs continue to be utilized in the long-term care setting, the pay and benefits are significantly less than in the acute care setting (North Carolina Center for Nursing, 2001).

As the demand for PNs has decreased the demand for RNs has continued to increase at a rate that currently

exceeds the supply. According to the Kentucky Long-term Policy Research Center (2002), "Of the estimated 168,000 unfilled jobs in US hospitals in 2001, 126,000 were for RNs."

Purpose of the Study

Although opportunities exist within the state of North Carolina for PNs to continue their education to the RN level, many PNs do not pursue RN education. It is necessary to identify if barriers exist to the present system that discourages PNs from continuing their education. Identification of the potential barriers will allow the development of strategies to decrease the barriers and encourage PNs to continue their education to the RN level.

Practical nurse to registered nurse educational programs range from two to four semesters in length within the state of North Carolina (personal communication with Joyce Roth, Educational Consultant, North Carolina Board of Nursing). Therefore, PNs could complete RN education in a shorter period of time than the two to four years taken for generic associate or baccalaureate students, respectively. The pool of PNs within the state would progress through RN education

faster than generic RN students and most would also bring experience in patient care to bedside nursing that is lacked by most generic RN graduates: This bedside experience could potentially maintain or improve the quality of nursing care rendered in the acute care setting. This study will identify the factors that PNs in the state of North Carolina perceive as barriers to continuing their education to the RN level.

Theory and Hypotheses

The theory: Barriers exist in the educational system in North Carolina that are preventing PNs from pursuing RN education. It is expected that PNs will be motivated to pursue higher education if the barriers to achievement are removed and if they believe they will gain significant benefit from it.

The following hypotheses were tested at the 0.05 level of significance:

Hypothesis #1: Situational factors are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. The situational factors tested were: time, cost, home responsibilities, job responsibilities, no place to study, no childcare, family doesn't like idea, or no transportation.

Hypothesis 2: Dispositional factors are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. The dispositional factors tested were: not enough energy, tired of studying, tired of attending classes, past low grades, feeling too old, don't want to go full time, afraid to appear too ambitious, or don't know what to learn.
Hypothesis 3: Institutional factors are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. Institutional factors tested were: such as time to complete degree, attendance requirements, scheduling problems, courses not available, too much red tape, not enough information, no way to get credit, or don't meet the requirements.
Hypothesis 4: The identified barriers preventing PNs in the state of North Carolina from pursuing RN education are barriers that support the utilization of non-traditional educational methodologies, such as online learning or distance education.

Significance of the Study

Previous research, both by government agencies and private individuals, has focused on identifying the factors that create barriers in relation to RNs obtaining

initial education, as well as advancing their level of education. This research explored factors that create barriers in relation to PNs advancing to RN education and asked the reason for these trends, as well as the question, "What can be done about them?" The findings of this research will be useful in developing a plan that will encourage more PNs to pursue higher education.

Assumptions and Limitations

This research was conducted using a cross-sectional survey and was subject to several assumptions as well as certain limitations. It was assumed that all subjects could read, understand, and interpret the questions on the survey. It was assumed that all nurses had at least the basic skills necessary to complete the survey. The information was presented at or below a twelfth grade reading level. The second assumption was that the subjects responded to the survey questions honestly. Random telephone calls were used to verify information collected on survey tools that had inconsistencies in reported information. Respondents contacted were able to verify information collected on the survey tool.

The major assumption was that PNs want to obtain RN education and that unidentified barriers are preventing

them from doing so. It is possible than PNs are unmotivated to continue their education and have no interest in becoming RNs, regardless of barriers. However, since there are fewer and fewer job opportunities for PNs in the acute care setting in North Carolina, and since the long term care setting opportunities that are available tend to be lower paying jobs, it is assumed that adequate motivation exists to propel PNs towards an RN education. Based on this assumption, it is feasible to conclude that barriers exist and that identification of these barriers will lead to ways to overcome the barriers, which in turn will lead to more PNs advancing to the level of RN education in North Carolina.

This study utilized a cross-sectional survey of PNs within the state of North Carolina. Accordingly, this limits the ability to generalize the results outside of the PN population in North Carolina.

Definitions of Terms

Acute Care Setting: Facilities that care for acutely ill individuals. Most commonly associated with hospitals.

ADN: Associate Degree in Nursing degree, most commonly granted by community colleges.

BSN: Bachelor of Science in Nursing degree, granted by Universities.

Distance Education: Implementation of instructional methodologies that enable learning to occur outside of the traditional classroom setting.

Distance Learning: Learning that occurs as a result of distance education.

Licensed Practical Nurse (LPN): A nurse educated to care for individuals with chronic or stable healthcare conditions, under the direct supervision of a registered nurse or physician.

Licensed Vocational Nurse (LVN): The terminology used by the states of California and Texas to depict the role of the LPN.

Long Term Care Setting: Facilities that care for chronically ill or infirmed individuals. Most commonly associated with nursing homes or skilled care facilities.

National Council for Licensure by Examination for Registered Nurse (NCLEX-RN): The licensure examination that must be successfully completed prior to practicing as a registered nurse in the United States. Only students successfully completing an approved registered

nurse educational program are allowed to complete the examination.

National Council for Licensure by Examination for Practical Nurse (NCLEX-PN): The licensure examination that must be successfully completed prior to practicing as a practical nurse in the United States. Only students successfully completing an approved practical nurse educational program are allowed to complete the examination.

Online Learning: Learning that occurs as a result of instruction via the Internet.

PN: Practical Nurse is the term often used for LPN.

PNE: Practical Nurse Education.

Registered Nurse (RN): A healthcare provider that has successfully passed the NCLEX-RN and is licensed to practice professional nursing.

Summary

The demand for RNs in the state of North Carolina is greater than the supply. There are 15,555 PNs in the state that currently practice nursing. The demand for PNs has decreased in North Carolina, especially in the acute care setting. As the demand for PNs has decreased the demand for RNs has increased. The financial

compensation for RNs is superior to that of PNs and more job opportunities exist for the RN than for the PN. Educational opportunities exist for the PN to obtain RN education and it is unclear if there are barriers in the current system preventing PNs from progressing to the RN educational level.

This study looked at factors that have been perceived as barriers to education in other disciplines and evaluated whether these same barriers are perceived as barriers to the current PN to RN educational system in the state of North Carolina. It was hypothesized that barriers exist, and that a distance learning approach to PN to RN education would have a positive impact on the existing barriers.

CHAPTER TWO: LITERATURE REVIEW

Introduction

This chapter will review the literature relevant to the topic of this research. A synopsis of the literature is presented in the following order: The global nursing shortage, importing nurses, why does the shortage exist, job related stress and burnout, the wage factor, how is this shortage different, current and projected indicators, impact of the nursing shortage, what is the answer, what is currently being done about the problem, have these measures been effective, how do we increase the number of RNs, the traditional career path, motivating factors for nurses to pursue continuing education, distance learning and the nursing shortage, and summary.

The Global Nursing Shortage

One only needs to read the employment ads of a local newspaper to realize that America is in the midst of a nursing shortage. The various reasons for the shortage include a changing demographic mixture of citizens, combined with a decreasing number of persons interested in pursuing nursing as a profession. The nursing shortage threatens to jeopardize the quality of

healthcare in America; however, Americans are not isolated in their experience with the nursing shortage.

Ghana, with a population of 19.5 million, is situated just a few degrees north of the equator, and consists of low-lying hot lands. Unlike the United States, Ghanaians have an average lifespan of less than 60 years: The average annual income is less than $2,000. Most of the population is supported by farming and fishing and the incidence of early infant mortality, poor sanitation and mosquito-borne diseases is high (Coates, 2001). What Ghanaians do have in common with Americans is not producing enough nurses to meet their needs. Ghana represents the lower socioeconomic portion of the global shortage, with nursing shortages existing in almost every country in the world.

In the year 2000, 500 nurses left Ghana to work in the western countries. This number represented more than half of the nurses educated during the same year and only served to increase the nursing shortage within the country. But the country continues to attempt to make do with the available resources. "Chickens and goats roam freely about the clinic, where women give birth in rooms separated only by cloth curtains (Coates, 2001).

Ghana is only one country, but in reality there is a shortage of nurses in virtually ever country on the globe with each country attempting to recruit and retain nurses. This competition between countries results in nurses moving from poorer to richer countries. There are organizations that lure nurses from the poorer countries in order to better meet their own needs. This migration of nurses towards money leads many to the United States, which pays top salaries (Coates, 2001).

The International Council of Nurses notes a shortage that spans the world, from Zambia to the Netherlands and beyond (Coates, 2001). Canada, a country that has supplied many of the nurses migrating to America in the past, is now experiencing a nursing shortage of its own. The number of graduating nurses has declined and it is estimated that Canada will need an additional 10,000 nurses by 2011. The North American Free Trade Agreement (NAFTA) allows citizens of Canada and Mexico to enter the United States without the need to obtain a green card. This has resulted in nurses from other countries using Canada as a route into the United States. With the shortage growing more severe, some recruiters don't wait for the nurses to trickle through Canada, but instead

recruit them directly from other countries (Coates, 2001).

Importing Nurses

The Philippines, unlike the majority of other countries, actually produces more nurses than it needs. This means the surplus of Filipino nurses are prime candidates to fill the shortages in other countries, including the United States. However, many raise the question of whether it is ethical to create a situation that potentially strips the Philippines of an adequate supply of nurses (Coates, 2001).

Britain prohibits recruiting nurses from any country that has a shortage. However, the United Kingdom reported a 71% increase in the number of foreign educated nurses applying to practice in the country, with over 4,000 of these nurses coming from Nigeria and South Africa (Coates, 2001). Since there is a particular shortage of nurses in Eastern Europe, Africa, and Asia, it would appear the ban is not effective and will certainly increase the shortage in those countries (Coates, 2001).

Why Does the Shortage Exist?

Experts indicate that the cause of the shortage is multifaceted (American Organization of Nurse Executives, 2000). The primary impact of people living longer and needing more specialized care is the need for more healthcare workers, including nurses. This trend is occurring at the same time that many governments are decreasing financial support for hospitals and nursing programs. Additionally, nursing has typically been viewed with a poor image, which discourages people from entering the profession (Coates, 2001).

The International Council of Nurses (2003) defines shortage based on the amount of nursing care people need and are willing to pay for. Spain, for example, has 13,000 more nurses than it has job opportunities. The problem lies in the fact that the country would need 100,000 more nurses than they have to actually provide the care that is needed. The discrepancy occurs because the people are not willing to pay for the care that they need, which results in fewer jobs for nurses (International Council of Nurses, 2003).

Some African countries would not have nursing shortages if the nurses weren't being enticed to leave

for better paying jobs in other countries (International Council of Nurses, 2003). The need for nurses is great in these countries, but the people have no money to pay for nursing care. The result is a lack of nurses to provide the needed care, which increases the risk of serious errors.

Women, traditionally the core population of nursing, have more career options today. Many nurses are nearing retirement (AACN, 1998); others want to leave because they are burned out or dissatisfied with the profession (Federation of Nurses and Health Professionals, 2001). This statement best describes the discord within the nursing professional: "I have not ever met a happy nurse- one that's a staff nurse, mind you," (Coates, 2001).

Job Related Stress and Burnout

The British Medical Journal reported in 2000 that nearly half of the nurses surveyed in Japan felt they were too busy to follow guidelines and were afraid of making errors as a result (Coates, 2001). This feeling of being overworked combined with the fear of making an error may encourage nurses to leave their present jobs. In 2001, Aiken compared 43,000 nurses in the United States, Canada, England, Scotland and Germany and

reported that 20-30% of nurses planned to leave their present jobs within the year. Only 30-40% said there were enough nurses to provide adequate patient care and job burnout and dissatisfaction are driving nurses to leave the profession.

Linda Aiken (2002) found that nurses reported greater job dissatisfaction and emotional exhaustion when they were responsible for more patients than they could safely care for. Dr. Aiken concluded that "failure to retain nurses contributes to avoidable patient deaths." Also, Dr. Aiken (2001) and her colleagues reported, that more than 40% of nurses working in hospitals reported being dissatisfied with their jobs. Even more alarming is a study commissioned by the Federation of Nurses and Health Professionals in April 2001, that showed one out of every five nurses currently working is considering leaving the patient care field for reasons other than retirement within the next five years.

The Wage Factor

Linda Hodges cites low wages as a major factor in declining nursing school enrollments: "Today's college students view nursing's beginning salaries as low compared to other professionals," (Hodges, 2001b).

Staiger, et.al. (2000) brings up the point that women now have many more opportunities than they did in the past. Professions such as lawyers, doctors and other technical career paths were not formerly open to them. They cite this as one factor in a decline in interest in the nursing profession (Staiger, et.al., 2000) among women.

The Nursing Institute at the University of Illinois College of Nursing (2001) cites similar reasons for the shortage. The total number of RNs has been increasing since 1980 (BHP, 2001). However, the increase is getting smaller each year and the demand continues to increase at a much faster rate (AACN, 2000a). As more nurses retire or leave the profession the total number of RNs will begin to decline.

How is This Shortage Different?

Taft (2001) asked the question, "Is this nursing shortage going to be The Big One? Is it The One for which all forerunners have been mere warm-ups?" There are factors that make this shortage different from the previous cyclical shortages experienced within nursing. For example, an aging workforce and a health care industry that no longer has deep pockets. Together, these factors have the potential for disaster. Taft

(2001) also states that the shortage is spurred by, "the failure of institutions to recognize the value of nurses and to invest in them as critical, irreplaceable resources. Until there is true recognition and investment, short-term solutions will continue to generate, at best, mediocre short-term results".

It is hypothesized that by the year 2010 the shortage of registered nurses will become severe (AHA, 2001; BHPR, n.d.). The current shortage will only worsen unless proactive intervention occurs now. According to Peterson, the fundamental blame for the worsening of the nursing shortage lies with the current environment that nurses must practice in (Tafts, 2001). There are many factors that contribute to what some perceive as a hostile working environment for nurses, especially in the acute care settings; consolidation of institutions has resulted in less personalization; managed care has managed to care less for the patient and the healthcare provider and more for the bottom line; cost containment has resulted in unpredictable work hours and shifts; the increasing acuity of patients has resulted in the complexity of nursing care escalating to the point that the nurse-patient ratios have become intolerable for many

nurses. As the disadvantages to remain in nursing or to enter the profession have increased, so have the viable alternatives to bedside nursing as a career choice (Tafts, 2001).

The increase in the number of registered nurses in the United States is the lowest in 20 years, at a time when changing demographics indicate a need for many more nurses to care for an aging population (American Association of Critical Care Nurses, 2003). In the year 2000 the National Sample Survey of Registered Nurses showed a total of 2,696,540 registered nurses in the US. Of this total number of RNs it was estimated that only 58.5% worked full-time in nursing.

An assertion made by authors Brenda Nevidjon and Jeannette Ives Erickson (Tafts, 2001) is "that this nursing shortage, driven from the supply side, has some differences from all previous ones: It will be more severe, longer, not responsive to traditional and short-term solutions, and is likely to be global." The authors propose that ways of addressing the shortage will be multifaceted and include positive changes in the workplace, innovative nursing education, adoption of new

models of care, and alterations in policies and regulations (Tafts, 2001).

Current and Projected Shortage Indicators

According to a July 2002 report by the Health Resources and Services Administration, 30 states were estimated to have shortages of registered nurses (RNs) in the year 2000. The shortage is projected to intensify over the next two decades with 44 states plus the District of Columbia expected to have RN shortages by the year 2020 (Projected Supply, Demand, and Shortages of Registered Nurses: 2000-2020).

According to the report Acute Care Hospital Survey of RN Vacancies and Turnover Rates in 2000 released in January 2002 by the American Organization of Nurse Executives, the average RN turnover rate in acute care hospitals was 21.3%. The average nurse vacancy rate was 10.2% with the highest rates found in critical care units (14.6%) and medical-surgical care (14.1%). Nurse executives surveyed indicated that staffing shortages are contributing to emergency department overcrowding (51%) and the need to close beds (25%).

A report released in July 2001 by the Government Accounting Office entitled, Nursing Workforce: Emerging

Nurse Shortages Due to Multiple Factors (GAO-01-944) states that "a serious shortage of nurses is expected in the future as demographic pressures influence both supply and demand. The future demand for nurses is expected to increase dramatically as the baby boomers reach their 60s, 70s, and beyond."

According to a May 2001 report, Who Will Care for Each of Us?: America's Coming Health Care Crisis, released by the Nursing Institute at the University of Illinois College of Nursing, the ratio of potential caregivers to the people most likely to need care, the elderly population, will decrease by 40% between 2010 and 2030. Demographic changes may limit access to health care unless the number of nurses and other caregivers grows in proportion to the rising elderly population.

According to the AHA, 2001 TrendWatch, approximately 75 percent of all hospital personnel vacancies are for nurses. A study by Buerhaus and colleagues (2000a) estimated that the U.S. would experience a 20 percent shortage in the number of nurses needed by the year 2020. This translates into a shortage of 400,000 RNs nationwide. Projections by the U.S. Bureau of Labor Statistics (2001) and others (AACN, 1999, AONE, 2000)

concur, estimating that more than one million new nurses will be needed by the year 2010.

The U.S. Department of Labor projects a 21% increase in the need for nurses nationwide from 1998 to 2008, compared to a 14% increase for all other occupations (U.S. Department of Labor Statistics, 2001). The American Association of Colleges of Nursing (2001) reports that enrollment in entry-level baccalaureate programs in nursing increased by 3.7 percent nationwide in 2000, ending a six-year period of decline. However, this slight increase does little to offset the fact the enrollments are still down 17 percent from 1995.

Impact of the Nursing Shortage

There has been much in the media over the past year concerning the impact of the nursing shortage on the safety of patient care. Many recent studies have observed the impact of the nurse-patient ratio to errors and patient outcomes. Blendon (2002) found that 53% of physicians and 65% of the public cited the shortage of nurses as a leading cause of medical errors. A survey conducted by the Harvard School of Public Health and the Henry J. Kaiser Family Foundation supports the Blendon study and found that 42% of the public and more than a

third of U.S. doctors reported that they or their family members have experienced medical errors in the course of receiving medical care.

According to Aiken (2002), a decrease in the number of RNs at the bedside is directly related to an increase in the mortality rate of patients. Nurse researchers at the University of Pennsylvania determined that patients who have common surgeries in hospitals with high nurse-to-patient ratios have up to a 31% increased risk of dying. Funded by the National Institute for Nursing Research, the study found that every additional patient in a hospital nurse's workload increased the risk of death in surgical patients by 7%. Likewise, the increase in burnout of the bedside nurses was directly related to the increase in the number of patients cared for.

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) released a report in August, 2002 entitled Health Care at the Crossroads: Strategies for Addressing the Evolving Nursing Crisis and stated that a shortage of nurses in America's hospitals is putting patient lives in danger. JCAHO examined 1609 hospital reports of patient deaths and injuries since 1996 and

found that low nursing staff levels were a contributing factor in 24% of the cases.

According to Needleman (2002), a higher proportion of nursing care provided by RNs and a greater number of hours of care by RNs per day are associated with better outcomes for hospitalized patients.

High nurse turnover and vacancy rates also affect access to health care. According to a February 2002 report on health workforce shortages prepared by First Consulting Group for the American Hospital Association and other trade groups, the average nurse vacancy rate in U.S. hospitals was 13%. Over one in seven hospitals reported a severe RN vacancy rate of more than 20%. High vacancy rates were found in all areas of the U.S. in both rural and urban settings. Healthcare facilities nationwide reported that vacant RN positions are contributing to emergency department overcrowding and ambulance diversions to other hospitals.

In 1999, the Institute of Medicine (IOM) released a report to the public on the incidence of medical errors and untoward patient outcomes, detailing that as many as 98,000 deaths annually could be attributed to medical errors (Kohn, Corrigan & Donaldson, 2000). In a

groundbreaking article, Aiken, Clarke, Sloane, Sochalski, and Silber (2002) examined hospital data from 1998 to 1999 on over 200,000 surgical patients and found that inadequate nursing staffing levels significantly impacted patient mortality. Obviously, the nursing shortage is already having an impact on the quality of healthcare provided in the United States and on patient safety. Therefore, it is necessary to address this problem as efficiently as possible.

What is The Answer?

There are several areas that must be addressed in order to curb the nursing shortage: recruitment must be improved; retention must become a priority; education must become more available; and the strain on current nurses must be reduced (Coates, 2001). Solutions must not focus on the short-term but instead on the long-term. The real issues must be identified and reduced or eliminated. Research shows that the top ten reasons nurses quit bedside nursing has more to do with their supervision than with money (Bozell, 1999).

What is currently being done about the problem?

Currently, short-term strategies are being employed, but experts do not feel that these measures will be

enough to sustain the profession in the future (Taft, 2001). The American Association of Colleges of Nursing (AACN) is taking proactive measures to address the nursing shortage. According to the AACN, the enrollment of nursing schools and colleges has been experiencing a six-year decline (Rosseter, 2000). The number of nurses achieving RN status has declined since 1995 (Moses, 1998).

Several organizations, the AACN, American Nurses Association (ANA), American Organization of Nurse Educators (AONE), and the National League for Nursing (NLN) have formed the TriCouncil for Nursing. This organization focuses on leadership for education, practice and research, and issued a joint policy statement in January 2001 on Strategies to Reverse the New Nursing Shortage.

Strategies to Address the Nursing Shortage

Top leaders in the profession of nursing are banding together to address the shortage. The Call to the Profession is a group of such leaders from national nursing organizations who are working together to ensure safe, quality nursing care for consumers and a sufficient supply of registered nurses to deliver that care. The

group released an action plan called Nursing's Agenda for the Future in April 2002. The Nurse Reinvestment Act was signed by the President on August 1, 2002 and has been sent back to Congress for appropriations. Provisions of this new law include scholarship money to attract new students into nursing, a Faculty Loan Cancellation Program to remove financial barriers to faculty careers, funding to promote best practices in nursing care, and public service announcements to champion nursing careers. In April 2001, a coalition of 23 national nursing organizations issued a joint call to Congress to stem the nursing shortage. The group released a comprehensive plan to address the shortage entitled Assuring Quality Health Care for the United States: Supporting Nurse Education and Training that outlined funding priorities and called for new initiatives to recruit and retain nurses (AACN, 2001). Although the call to Congress doesn't directly refer to PNs, it does provide funding that is also available to PNs completing an RN education.

The image of nursing is another area that has been targeted as needing improvement. Two national media campaigns have been launched to help polish the image of nursing. Nurses for A Healthier Tomorrow (NurseSource,

n.d.) is a coalition of 40 nursing and health care organizations working together to raise interest in nursing careers among middle and high school students. The coalition has conducted nationwide focus groups with students, ages 6-15 years; secured over $600,000 in sponsorship; launched a Web site www.nursesource.org; created a televised public service announcement, and designed print ads that can be downloaded for free from the Web. In February 2002, Johnson & Johnson launched the Campaign for Nursing's Future, a multimedia initiative to promote careers in nursing that includes paid television commercials, a recruitment video, a Web site www.discovernursing.com, and brochures mailed to schools across the country. These efforts should give further incentive to PNs to continue their education.

Have these Measures Been Effective?

The American Association of Colleges of Nursing (2001) reports that enrollment in entry-level baccalaureate programs in nursing increased by 3.7 percent nationwide in 2000, ending a six-year period of decline. However, this slight increase does little to offset the fact that the enrollments are still down 17 percent from 1995.

Enrollments in entry-level baccalaureate programs in nursing increased again in fall of 2001. This number reflects enrollment in generic baccalaureate programs. However, programs that enable registered nurses (RN) prepared with a diploma or associate's degree to earn a bachelor's degree continued to decline (Rosseter, 2002). According to Rosseter, (2002) graduate level programs still continue to decline at a steady rate. Rosseter blames the marketing efforts and funding efforts by congress for the overall decrease in enrollment.

According to the National Council of State Boards of Nursing, the number of first-time, U.S. educated nursing school graduates who sat for the NCLEX-RN, the national licensure examination for registered nurses, decreased by 31.3% between 1995 and 2002. A total of 30,152 fewer students in this category of test takers sat for the exam in 2002 as compared with 1995. The statistics are outlined in table 2.1 (NCSBN, 2003).

Table 2.1

Number of Candidates Taking the NCLEX-RN Exam First-Time, U.S. Educated Candidates Only

Program/Year	Diploma	Baccalaureate	Associate	Total
1995	7,335	31,195	57,908	96,438
1996	6,346	32,278	55,554	94,178
1997	5,240	31,828	52,396	89,464
1998	3,978	30,142	49,045	83,165
1999	3,161	28,107	45,255	76,523
2000	2,679	26,048	42,665	71,392
2001	2,310	24,832	41,567	68,759
2002	2,223	24,421	39,642	66,286

From National Council of State Boards of Nursing, 2003.

According to the fall 2002 survey by the American Association of Colleges of Nursing, enrollment in entry-level baccalaureate programs in nursing increased by 8% nationwide since fall 2001. Despite this increase, enrollment is still down by almost 10% or 11,584 students from 1995. On average over the last five years, the number of graduates from entry-level baccalaureate programs in nursing declined by 1,030 each year. The 1998-2002 cohort contains 363 schools that reported data every year for each of the past five years (AACN, 2003).

How Do We Increase the Number of RNs?

One of the reasons for these enrollment shortages is a faculty shortage, according to a report by the AACN (2001). Unfilled faculty positions, faculty resignations, projected retirements, and the shortage of students being prepared for a faculty role pose a threat to the nursing education workforce over the next five years. In addition, the average age of the nurse entering the profession is higher than in the past (AACN, 1998). According to a Government Accounting Office Report (Publication GAO-01-944), by the year 2010, 40 percent of all RNs will be over 50 years of age. Colleges are attempting to increase their number of younger enrollees in order to decrease the number of nurses in the over 50 years of age group (AACN, 1998). An aging generation combined with an aging nursing population will only lead to a greater shortage of nurses in the future (Aurbach, et. al., 2000; Buerhaus, 2001; Buerhaus, et.al., 2000a; and Buerhaus, et. al., 2000c).

A shortage of nursing school faculty is restricting nursing program enrollments. According to a survey by the American Association of Colleges of Nursing, 2000-2001 Enrollment and Graduations in Baccalaureate and Graduate

Programs in Nursing, more than a third (38.8%) of schools that responded pointed to faculty shortages as a reason for not accepting all qualified applicants into entry-level baccalaureate programs (American Association of Colleges of Nursing). According to a study released by the Southern Regional Board of Education (SREB) in February 2002, a serious shortage of nursing faculty was documented in 16 SREB states and the District of Columbia. Survey findings show that the combination of faculty vacancies (432) and newly budgeted positions (350) points to a 12% shortfall in the number of nurse educators needed. Unfilled faculty positions, resignations, projected retirements, and the shortage of students being prepared for the faculty role pose a threat to the nursing education workforce over the next five years (American Association of Colleges of Nursing, 2002).

An important aspect of reversing the nursing shortage is to address the shortage of qualified nursing faculty. The shortage of nurses and nursing faculty are linked, as each contributes to the other. Schools and colleges of nursing are already reporting difficulties finding qualified nursing faculty prepared at the masters

and doctoral levels. A lack of qualified nursing faculty will negatively impact the number of associate and baccalaureate nurses that can be graduated, therefore potentiating the nursing shortage even more. According to Tafts (2001) the "major consequences of the nursing faculty shortage include: limitations on the number of students who can be educated when the shortage of nurses is becoming severe; curtailment of the development of nursing's scientific knowledge base; and reductions in the profession's leadership influence at organizational, local, state, and national levels."

With fewer new nurses entering the profession, the average age of the RN is climbing. According to the National Sample Survey of Registered Nurses released in February 2002 by the Division of Nursing within the Bureau of Health Professions, the average age of the working registered nurse was 43.3 in March 2000, up from 42.3 in 1996. The RN population under the age of 30 dropped from 25.1% of the nursing population in 1980 to 9.1% in 2000 (Bureau of Health Professions, 2002). According to a July 2001 report released by the Government Accounting Office, Nursing Workforce: Emerging

Nurse Shortages Due to Multiple Factors (GAO-01-944), 40% of all RNs will be older than age 50 by the year 2010.

The Traditional Career Path

Nursing education has shifted from hospital-operated instruction to academic institutions over the past several decades (NACNEP, 1996). Between 1975 and 1999 the number of RNs graduating from BSN programs rose from 3,700 a year to over 12,000 annually (Redman and Cassells, 1990). As of 1996, 0.6 percent of employed RNs held a master's or doctoral degree (Department of Nursing, 1996). However, by the year 2000, the demand for master's and doctoral level nurses prepared for advanced practice, clinical specialties, teaching, and research did not keep up with demand.

Registered nurses are prepared either in a four-year BSN program; two-year community college program, in which they receive an Associate Degree in Nursing (ADN); or a three-year hospital training program, which leads to a diploma in nursing. The most typical pathway for entry into professional-level nursing is the four-year Bachelor of Science degree in nursing (BSN).

In all States, including the District of Columbia, students must graduate from an approved nursing program

and pass a national licensing examination to obtain a nursing license. This may only be done after they complete their educational program. Many ADN and hospital diploma educated nurses can later enter BSN programs to prepare for a broader scope of nursing practice and seek career advancement. From there they can enter a master's degree or doctorate program. The diploma or ADN graduate is able to find a staff nurse position, after they obtain their license and then take advantage of tuition reimbursement programs to work toward a higher degree (BLS, 2000).

Motivating Factors for Nurses to Pursue Continuing Education

Mary Dealy and Mandy Bass (2001) identified several factors that either act as barriers or encourage nurses to participate in continuing education classes. These same factors may also either serve as barriers or influence whether PNs are motivated to further their careers as RNs. Adult learning is directly tied to the individual's perceived need to learn, and adult learners prefer information that directly relates to their immediate situation.

O'Connor (1982) studied 1,700 nurses and found six factors that were identified as meaningful in their professional development. These factors were, improved social relations, professional knowledge, compliance with regulatory authority, relief from the normal routine, and professional advancement potential. It may be noted that none of these factors were monetary or material in nature. Professional development is not pursued for higher wages alone. Several studies identified other factors as motivators: peer learning and interaction, personal benefits, job security, and self-interest (Peutz and Peters, 1981; Abruzzee, R., 1988; and Urbano, M., et. al. 1988). A lack of these motivating factors may be perceived as a barrier to continuing education by practicing PNs.

Other studies focused on factors that presented barriers to nurses participating in continuing education. The factors identified included current work pressures, unit transfers, overtime, fatigue, administration and hospital ownership changes, money, time, work conflict, family commitment, illness, transportation, child care, location, weather, death, and attending programs alone (St. Clair, C., 1986 and Parochka, J., 1985).

According to Brown (2001), many educational factors limiting minorities and women from entering highly technical fields, like nursing, could be over come by changing certain aspects of the educational system. Changes cited included; promote technical learning by linking the learning to everyday life; introducing technology in the middle school setting; providing mentors and role models within the educational setting. The changing workforce reflects a need to target recruitment efforts at women and minorities (Doverspike, 2000 and Buerhaus and Auerbach, 1999), however there is a need to recruit men into the profession as well.

The gender issue is two-sided in the nursing profession. Nursing is highly technical in nature and technically oriented careers are traditionally the domain of men. However, men represent a small minority in the nursing profession (Meadus, 2000). Many men who enter nontraditional careers often face societal challenges to their sense of masculinity (Henson, 2001).

Several programs have been initiated to help women achieve support in pursuing their careers. Strategies were discussed at the 1999 Eighth Annual International Conference for Chairs, Deans, and Other Organizational

Leaders (Rodman, 1999). Some of these efforts include support including gender and diversity training for faculty and staff, a support group for women students in nontraditional fields, and other support services such as childcare. It is possible that these strategies would also recruit a select group of men into the profession.

A survey of women, who have taken technical career paths and excelled in their fields showed several common factors among them. They attributed their success to an awareness of and interest in technical fields, encouragement of self-esteem, and encouragement of cognitive growth (Smith, 2000).

Distance Learning and the Nursing shortage

Because the traditional BSN career path takes at least four years to complete it will not produce nurses fast enough to alleviate the current shortage. For this reason, other alternatives are being explored. These other alternatives are not only producing nurses faster, but may also help to solve some of the issues that prevent nurses in a traditional educational system from pursuing higher degrees. One of these alternatives is distance learning (DL). Many colleges and universities are offering traditional degree programs over the

internet, through concentrated residencies, or video conferencing. There is much benefit to having a face to face instructor and these distance learning programs recognize this and often pair students with a tutor or mentor with whom they can communicate directly and ask questions or obtain professional opinions.

Some do not believe that distance learning is the answer to the nursing crisis in fear that it will produce lower quality nurses, which could in turn jeopardize patient safety. However, nurses who choose the distance learning route will still have to attend clinical practice sessions, just like nurses educated in traditional programs. They will still have to obtain their license before they can practice. The only difference is that their classroom experience will be obtained through an alternate methodology.

Distance learning offers many advantages over traditional programs. The first advantage is cost. Distance learning facilities do not have the high costs of maintaining classrooms or as many physical structures as a traditional setting. Because they have lower over head costs they can offer their services at a much lower rate. The second, and perhaps biggest, advantage is the

convenience of distance learning. Many nursing students start families and must begin working as soon as they obtain their license. They often have many job and family responsibilities that would prevent them from having a career and going to school, without sacrificing family or professional life. It is certainly feasible that these factors could be considered as barriers to further education by practicing PNs. Studies have also shown that RNs have cited similar factors as barriers to continuing RN education (Leonard, 2003; Oehlker & Gibson, 2001). Distance learning allows practicing nurses to complete their education, usually at their own pace, and still enjoy the benefits of family and professional life.

In many cases distance learning options are self-paced. It has been argued that students who learn through this type of setting actually absorb and retain more knowledge than in a traditional setting as they cannot move on to the next step before previous concepts are mastered (Jacksonville University, 2001).

In a speech before the Senate Health, Education, Labor and Pensions Committee, Linda Hodges (2001b) stressed the need for encouraging nurses to seek higher education:

> There is an increasing demand for baccalaureate-educated nurses prepared in critical thinking, leadership, case management, and gerontology to care for elders in both inpatient and outpatient settings. And nurses with master's and doctoral preparation are needed to teach in our schools of nursing, conduct research, and fill key clinical specialties such as gerontology, critical care, and the operating room. The National Advisory Council on Nurse Education and Practice has recommended that at least two-thirds of all registered nurses hold baccalaureate or higher degrees by 2010.

According to the American Association of Critical Care Nurses (2003), only 28.8% of nurses in the United States are educated at the baccalaureate level.

Several organizations worldwide have presented distance learning, "e-Nursing," as a viable alternative to traditional classroom learning for nursing students (Carty and Principato, 2002). Several studies have assessed student reactions to conferenced nursing programs with positive results. There are many advantages to these programs (Andrusyszyn, et. al., 1998; Andrusyszyn, et. al., 2001; and Cragg, et. al. 1999).

Previous research found that lack of money, family obligations, and scheduling difficulties were among the main reasons for not continuing professional education. Distance learning solves these problems. The person can work in their own home at their own pace and still have the benefits of one-to-one instructor interaction through chat lines.

However, distance learning is not a perfect solution as several issues may be more difficult to control in an online environment than in a traditional classroom setting. It is difficult to maintain ethics in a distance learning situation (Gearhart, 2001). Fass (1990) discusses the environment in which today's college students have been raised. According to Fass, there has been an era of decline of public morality, involving scandal and corruption by public servants, major corporations, and private citizens. Social events affect a student's attitudes about ethical behavior. Fass conducted a series of polls, which show that as many as three-quarters of all students on college campuses admit to some sort of academic fraud (Fass, p 171). Hallam (1998) discusses Internet ethics and the abuse of information obtained on the Internet. This may prove to

be the one drawback to the use of the Internet in education. If these factors can be mitigated, distance learning could hold the key to assisting with America's nursing crisis.

Summary

Considering the scope of the nursing shortage, this phenomenon will not be remedied quickly or with ease. It is clear from the literature review that the shortage of nurses is a far-reaching problem, spanning from the wealthiest corners of the western world, to the most desolate and impoverished countries on the globe. Research supports the theory that some of the factors that have contributed to the nursing shortage include: a changing demographic mixture of citizens; a decreasing number of persons interested in pursuing nursing as a profession; the negative light that is cast upon the nursing profession; an aging nursing population; and increased stress on the job.

These factors, combined with a lack of foresight in policy, have created the greatest nursing shorting in the history of the profession. It is clear that the shortage will test the profession as a whole, as well as those professionals who work in it. However, this shortage

provides a golden opportunity upon which to build a healthy nursing profession that can withstand the rigors of future healthcare needs. The time is now, to seize the opportunity to better the nursing profession both here in the United States, and across the globe.

CHAPTER THREE: METHODOLOGY

Chapter three describes the study methodology. This chapter is organized by introduction, questionnaire development and pre-testing, data collection, and data analysis.

Introduction

This research was conducted using a cross-sectional survey of the 15,623 PNs who are currently licensed and employed in the state of North Carolina. Various groups were identified, such as low-income versus high income, and men versus women. In addition individuals were grouped according to ethnic group and separated into age categories. Comparison of these categories indicated whether the answers obtained could be applied to the general population of nurses as a whole, or if certain situations only existed among certain categorical groups.

Questionnaire Development and Pre-testing

The survey instrument used was an adapted version of a pre-existing questionnaire: Learning Interests and Experiences of Adult Americans (Cross, 1981). The survey consisted of 24 Likert style questions concerning barriers to education as well as 10 demographic questions. Survey question answers were divided into

three categories. These categories were coded into the margins of the survey tool. The following letter designations were used: I for institutional variables, S for situational variables, and D for dispositional variables. The letter P indicated personal information and corresponded to the demographic indicators.

The survey tool has proven valid and reliable (Powell, 1989) with an overall Cronbach's alpha coefficient ranging from .716 to .865, and includes concepts identified in previous studies as barriers to continuing education (St. Clair, C., 1986 and Patrochka, J., 1985). See Appendix B. Survey questions were worded in a way that allowed for quantitative analysis of the results. The data were analyzed using a coding scheme, developed to reflect the most common answer categories.

A pilot study consisting of 30 PNs was conducted to discover any obvious flaws in the survey instrument and to make adjustments, if necessary, prior to beginning the primary research. The data obtained in the pilot study were not included in the analysis of the data for the primary research study.

During the last week of January, 2003, the survey was administered to a group of 30 PNs in the Winston-

Salem, NC area. The questionnaires were hand delivered and collected upon completion. The initial contact letter accompanied the questionnaires, and no questions were answered and no instructions were given verbally. After completing the survey, the PNs were asked to identify any areas that were unclear or confusing for them. No areas were identified as unclear or confusing. The initial contact letter and survey was considered adequate and the study progressed to the primary data collection phase.

Data Collection

The North Carolina Board of Nursing produced a computer generated random sample of 500 PNs drawn from the total pool of active PNs in the state. During the first week of February, 2003, the initial contact letters and surveys were sent to the 500 PNs via the United States Postal Service: Each survey mailed contained a self-addressed stamped envelope to encourage return of the completed survey. Each survey was coded from 1 to 500 for tracking purposes and to enable a follow-up mailing to all subjects who had not responded within two weeks. An incentive of $100 was awarded to one respondent chosen randomly from the pool that returned

questionnaires within the first two weeks. Sheila J Bryan Potter of Richlands, NC received the incentive money. A follow-up mailing occurred after two weeks to all subjects who had not responded.

Since the study used a cross-sectional survey, subjects were not screened and chosen according to demographic, or other pre-qualifying conditions. This provided a sample that was more representative of the general population of PNs in North Carolina. The data were analyzed according to demographics as a descriptive technique. Differences between various demographic groups would have indicated that the results were only valid for the circumstance that applied and therefore would not translate to the general population. The data were analyzed using a 95 percent confidence level, both within and between various demographic groups.

Data was imprinted on an ongoing basis as surveys were returned and the data collection phase concluded four weeks after the initial mailing. Nine of the surveys were returned by the postal service due to undeliverable addresses. A total of 128 surveys were completed with a return rate of 25.6%.

A random sample of respondents was contacted by phone to verify the accuracy of the information entered on the survey. The information entered on the survey corresponded to the verbal responses received by phone from all contacted subjects. Phone calls were made to a total of 20 (15.6%) of the respondents to the survey.

Experts in the fields of both nursing and education were interviewed during the data collection phase. It was expected that the results of these interviews would confirm the survey results and enhance the validity of the data.

The survey represented one type of data collection. In order to confirm and enhance survey data, interviews with experts in the field were conducted. These individuals were from diverse backgrounds and reflected views from all levels of the work environment. A convenience sample of subjects was selected from two medical centers located in Winston-Salem, NC and the North Carolina Board of Nursing. Interviews were conducted with subjects holding the job titles of Vice President of Nursing Services; Nurse Manager; Charge Nurse; and NCBON Educational Consultant. The results of these interviews helped confirm the survey results. The

comparison of various types of data from different sources helped to triangulate the results. Therefore, more precision of answers was obtained, as the other types of data either confirmed by concurrence, or raised questions as to the validity of the data. Human response is not typically numerical in nature and this type of data collection gave reliability to the test methods.

Data Analysis

The data were analyzed using SPSS Version 11.5. Statistical information is presented in tables and graphical form. Descriptive statistics and cross-tabulations by selected characteristics are presented. Logistic regression was performed independently on each study variable. Logistic regression was repeated on the variables that showed significance to test the covariate effects.

CHAPTER FOUR: RESEARCH FINDINGS

Chapter four describes the analysis of the data and the findings. This chapter is organized by the following topics: characteristics of the sample, hypotheses testing, and summary.

Characteristics of the Sample

One hundred and twenty-eight usable questionnaires were included in the analysis. Of the 128 respondents, 108 did not return to school for RN education, while 20 did return to school for RN education. The age range of respondents that returned to school was 24 to 54 years. The age range of respondents that did not return to school was 24 to 72 years. The average age of PNs in the state of North Carolina is 46 years with 66.5% of PNs being greater than 40 years of age (NCCN, 2003). In the study population, 75.8% of the respondents were greater than 40 years of age. Table 4.1 presents the age distribution of the sample.

Table 4.1

Major demographic characteristics of sample (n=128)

	Percent that Returned to School	Percent that Did Not Return to School	Total Percent by Demographic Variable
Age			
<40 years	4.0	20.2	24.2
40-60 years	12.0	59.1	71.1
> 60 years	0	4.7	4.7
Gender			
Male	0.8	5.4	6.2
Female	14.9	78.9	93.8
Ethnicity			
White Non-Hispanic	11.7	66.4	78.1
African American/Asian	3.9	18.0	21.9
Marital Status			
Married	12.5	68.0	80.5
Not Married	3.1	16.4	19.5
Dependent Children			
None	8.6	45.3	53.9
1	4.7	26.6	31.3
2-4	2.3	12.5	14.8
Annual Income			
<$25,000	0.8	3.9	4.7
$25,000-74,999	12.5	73.5	86.0
$75,000 or more	2.3	7.0	9.3
Hours Worked Per Week			
0	0.8	2.3	3.1
1-39	2.3	25.8	28.1
40 or more	12.5	56.3	68.8

Of the 128 respondents, 120 were female and 8 were male. The NCBON (2003) lists the current breakdown of PNs in the state as 857 males and 14,766 females. This would mean that the number of male PNs in the State of North Carolina is equal to 0.05% of the total PN population. Although only eight male subjects were included in the survey this would equate to 6.3% of the study population. The gender variable is reflected in table 4.1.

Only one respondent identified himself or herself as Asian Pacific Islander. The remaining respondents were either White Non-Hispanic (n=100) or African-American (n=27). The 78.1% White Non-Hispanic make-up of the study population mirrors the statewide make-up of the PN population, which consists of 78% White Non-Hispanic's (NCBON, 2003). This data is represented in table 4.1.

Marital status was recorded for each subject. Greater than 80% of the subjects were married, with 11.7% being divorced, 5.5% being single, 1.6% being separated, and 0.8% being widowed. There was no significant correlation (Pearson = .234) between marital status and the decision to return to school or not to return to school. See table 4.1.

A total of 53.9% of the sample population had no dependent children, 17 years of age or younger, living at home, while 46.1% of the sample population had one or more dependent children, 17 years of age or younger, living at home. None of the subjects had more than four dependent children, 17 years of age or younger, living at home. Table 4.1 depicts the responses to this survey item.

For purposes of income, each respondent was grouped by category of annual income. Only 4.7% of the subjects had an annual income of less than $25,000 per year, while 85.9% of the study population reported an annual income between $25,000 and $74,999. There was no significant correlation between income level and decision to return or not to return to school (Pearson = .996). This data is presented in table 4.1.

Each respondent was asked how many hours they worked per week at a paid job or jobs. Responses ranged from zero for individuals who were retired (n=4), to 80 plus hours for others. Seventy-One percent of the employed PNs in the sample population reported working at least 40 hours per week, while 82% of the PNs statewide are

employed full-time (NCBON, 2003). Table 4.1 depicts this data.

Independent sample t-testing was performed on each demographic variable in relation to whether PNs did or did not return to school. The results revealed p values of greater than .05 with all variables. The conclusion was made that there was no significant difference between the means of the groups (PNs that did return to school and PNs that did not return to school) in relation to the demographic variables. See table 4.2.

Table 4.2

Independent samples t-test results between PNs that returned to school and PNs that did not return to school

Variable	t value	df	Sig. (2-tailed)
Gender	-.250	126	.803
Age	-.851	126	.396
Race	.365	126	.715
Marital Status	1.196	126	.234
Number of Children Living at Home	.324	126	.747
Hours Worked per Week	.496	126	.621
Annual Income	.042	126	.966

Each respondent was asked to respond to the following question: How has your employment status (hourly versus salaried) influenced your decision not to attend school? For purposes of data analysis, each response was categorized as having no influence, having a negative influence, or having a positive influence on the decision to return to school. Of the 128 respondents, 15 did not respond to this demographic item, 36 reported no influence, 6 reported a positive influence, and 71 reported a negative influence. The negative influence related to scheduling conflicts and dates/times worked in all respondents that reported a negative influence. Interestingly, there was no significant correlation between either a negative or positive influence from the employer and the decision to return or not to return to school (Pearson = .143). See table 4.3.

Table 4.3

Frequency distribution of independent variables (n=128)

Independent Variable	Percent that Returned to School	Percent that Did Not Return to School	Total Percent by Independent Variable
Influence of Employment on Decision to Return to School			
Not an Influence	4.4	27.4	31.8
Positive Influence	0	5.3	5.3
Negative Influence	13.3	49.6	62.9
Most Important Reason for not Returning to School			
Finances	N/A	19.6	19.6
Time/Convenience	N/A	49.0	49.0
Family	N/A	19.6	19.6
Age	N/A	2.9	2.9
No Desire	N/A	8.9	8.9
Most Important Reason for Choosing Institution if Returned to School			
Convenience/Scheduling	80.0	N/A	80.0
Credit f/prev learning	15.0	N/A	15.0
Family Responsibility	5.0	N/A	5.0
Comments			
Health is an Issue	3.8	3.8	7.6
Credit f/prev learning	0	26.9	26.9
Completed RN Education	7.7	0	7.7
Inflexible RN Programs	7.7	42.4	50.1
Satisfied	0	7.7	7.7

In response to the question, "What was the most important reason that deterred you from returning to

school?" the subjects narrative responses were categorized based on the most prevalent themes. Categorization resulted in the following themes among the responses: 1)Finances, 2)Time/Convenience, 3)Family Responsibilities, 4)Entry Requirements, 5)Age, 6)No Desire. The predominant factor when deciding not to return to school was time/convenience (49%). Table 4.3 reflects the response rate of each category.

It was recognized that some subjects may have returned to school or be in the process of furthering their education. For this reason, each respondent was asked, "If you have continued your education, what was the most important reason for choosing the institution?" Again, the responses were categorized by theme with the following themes emerging: 1) Convenience and scheduling, 2) Credit for previous learning, and 3) Decreased family responsibilities. The predominant factor when deciding to return to school was convenience/scheduling. The results are presented in table 4.3.

The final area of the survey tool offered room for other comments to be made. Of the 128 respondents, 26 made a comment. The comments were categorized by theme with five themes emerging: 1)Personal health is an issue

and has prevented return to school, 2)Would like credit for previous learning, 3)The subject has returned to school and graduated from a registered nurse educational program, 4)Scheduling of RN educational programs needs to be more flexible, and 5)The respondent was satisfied with their current level of education. Of those respondents making a comment that did not return to school, 42.4% felt that RN education lacks flexibility. The results are presented in table 4.3.

Hypotheses Testing

In order to address hypotheses one, two, and three, which relate to whether the identified variables either were or were not perceived as barriers, the survey tool responses were recoded to either a yes or no response. If the subject identified a variable as not being a concern the response was recoded to a no response, as this variable was not perceived as a barrier to that subject. If the subject identified a variable as being a minor concern, somewhat of a concern, a considerable concern, a major concern, or an overwhelming concern, the response was recoded to a yes response, as this variable was perceived as a barrier to that subject. This data is presented in table 4.4 and reflects the frequency rate of

each variable. It is important to point out that a high or low frequency rate reflects a high or low number of PNs identifying that particular variable as a factor in their decision to return to school or not to return to school: It does not however, reflect the significance of that particular variable in relation to the decision to return to school or not to return to school. It is very possible that many variables are perceived as important to PNs when deciding whether or not to continue their education. It is much more likely that a small number of variables actually serve as the deciding factors in making this decision though.

Table 4.4

Variables perceived as barriers to RN education by PNs in North Carolina ranked by frequency of response

Rank	Percent "Yes"	Percent "No"	Variable	Category
1-Tie	93.0	7.0	Time	Situational
1-Tie	93.0	7.0	Time to Complete	Institutional
2	91.4	8.6	Cost	Situational
3	88.3	11.7	Job Responsibilities	Situational
4	86.7	13.3	Don't Want to Go Full-Time	Dispositional
5	76.6	23.4	Course Scheduling	Institutional
6	75.8	24.2	Home Responsibilities	Situational
7	70.3	29.7	Attendance	Institutional
8	66.4	33.6	Red Tape	Institutional
9	63.3	36.7	Energy and Stamina	Dispositional
10	61.7	38.3	No Way to Get Credit	Institutional
11	60.2	39.8	No Information	Institutional
12	53.1	46.9	Too Old	Dispositional
13	50.8	49.2	Don't Enjoy Studying	Dispositional
14	47.7	52.3	Tired of Classrooms	Dispositional
15	40.6	59.4	Requirements	Institutional
16	39.8	60.2	Courses not Available	Institutional
17	39.8	60.2	Don't Know What to Learn	Dispositional
18	35.9	64.1	Low Past Grades	Dispositional
19	31.3	68.8	No Place to Study	Situational
20	20.3	79.7	Too Ambitious	Dispositional
21	19.5	80.5	Child Care	Situational
22	14.1	85.9	Friends or Family	Situational
23	8.6	91.4	Transportation	Situational

Hypothesis 1: Situational variables are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. Situational variables tested were: time, cost, home responsibilities, job responsibilities, no place to study, no childcare, family doesn't like idea, or no transportation

The dependent variable was whether PNs did or did not return to school to pursue RN education. The dependent variable was coded as 0 if the respondent returned to school to pursue RN education. The dependent variable was coded as 1 if the respondent did not return to school to pursue RN education. Logistic regression analysis was performed to estimate which situational variables influenced the PNs decision of either to return to school or not to return to school. None of the situational variables were significant at the .05 level. Therefore, the null hypothesis 1 is not rejected in regards to the situational variables of time, cost, home responsibilities, no place to study, no childcare, family doesn't like idea, or no transportation. Table 4.5 presents this data.

Table 4.5

Logistic regression analysis of situational variables tested against the dichotomous dependent variable of PNs who did or did not return to school for RN education

Situational Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Cost	.201	.823	.060	1	.807	1.222
Not Enough Time	-.419	1.090	.148	1	.701	.658
Home Responsibilities	-.288	.602	.229	1	.632	.750
Job Responsibilities	-19.666	10377.	.000	1	.998	.000
No Child Care	-.035	.610	.003	1	.954	.966
No Transportation	-.791	.726	1.187	1	.276	.453
No Place to Study	.070	.530	.017	1	.896	1.072
Friends or Family Don't Like the Idea	-.090	.685	.017	1	.896	.914

Hypothesis 2: Dispositional variables are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. The dispositional variables tested were: not enough energy, tired of studying, tired of attending classes, past low grades, feeling too old, don't want to go full time, afraid to appear too ambitious, or don't know what to learn

Logistic regression analysis was performed to estimate which dispositional variables influenced the PNs decision to either return to school or not to return to school. The model is significant at the .029 level according to the model chi-squared statistic. The model

predicts 84.4% of the responses correctly. The variable of not wanting to go to school full-time had a significance level of .022. The odds ratio was 3.779 and the B-coefficient was positive, indicating that for every one unit increase in "not wanting to go to school full-time" there was a 3.779 increase in PNs not returning to school for RN education.

The remaining dispositional variables were not significant at the .05 level. Therefore, the null hypothesis 2 is not rejected in regards to the dispositional variables of not enough energy, tired of studying, tired of attending classes, past low grades, feeling too old, afraid to appear too ambitious, or don't know what to learn. The null hypothesis 2 is rejected in regards to the dispositional variable of not wanting to go to school full-time. Table 4.6 presents this data.

Table 4.6

Logistic regression analysis of dispositional variables tested against the dichotomous dependent variable of PNs who did or did not return to school for RN education

Dispositional Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Too Old	-.331	.495	.447	1	.504	.718
Low Grades in Past/Lack of Confidence	-.936	.494	3.585	1	.058	.392
Not Enough Energy	-.088	.509	.030	1	.862	.915
Don't Enjoy Studying	.037	.487	.006	1	.939	1.038
Tired of Going to School	-.349	.489	.509	1	.475	.705
Don't Know What I Would Like to Learn	-.251	.491	.262	1	.609	.778
Hesitate to Seem too Ambitious	-.323	.571	.320	1	.572	.724
Don't Want to go to School Full-time	1.330	.583	5.209	1	.022	3.779

Hypothesis 3: Institutional variables are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. Institutional variables tested were: time to complete degree, attendance requirements, scheduling problems, courses not available, too much red tape, not enough information, no way to get credit, or don't meet the requirements

Logistic regression analysis was performed to estimate which institutional variables influenced the PNs decision to either return to school or not to return to school. The model is significant at the .003 level

according to the model chi-squared statistic. The model predicts 84.4% of the responses correctly. The variable of strict attendance requirements had a significance level of .028. The odds ratio was .101 with a negative B-coefficient. A negative B-coefficient indicates an inverse relationship between the variable of strict attendance requirements and the outcome variable of PNs that did not return to school. For every one unit increase in strict attendance requirements there was a .101 unit decrease in PNs not returning to school for RN education (or a .101 unit increase in the number of PNs that are returning to school).

The remaining institutional variables were not significant at the .05 level. Therefore, the null hypothesis 3 is not rejected in regards to the institutional variables of time to complete degree, scheduling problems, courses not available, too much red tape, not enough information, no way to get credit, or don't meet the requirements. The null hypothesis 3 is rejected in regards to the institutional variable of strict attendance requirements. Table 4.7 presents this data.

Table 4.7

Logistic regression analysis of institutional variables tested against the dichotomous dependent variable of PNs who did or did not return to school for RN education

Institutional Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Time Required to Complete the Program	.472	.842	.315	1	.575	1.603
Courses Aren't Scheduled When I can Attend	.405	.540	.564	1	.453	1.500
No Information About Places Offering What I Want	-.511	.526	.945	1	.331	.600
Strict Attendance Requirements	-2.293	1.046	4.806	1	.028	.101
Courses I Want Don't Seem to be Available	-.251	.491	.262	1	.609	.778
Too Much Red Tape	-.488	.554	.774	1	.379	.614
Don't Meet Admission Requirements	-.692	.491	1.983	1	.159	.501
No Way to get Credit for a Degree	-.724	.552	1.718	1	.190	.485

The two variables that were significant at the .05 level with logistic regression (strict attendance requirements and not wanting to go to school full-time) were tested as covariates during logistic regression analysis. The overall model is significant at the .001 level according to the model chi-squared statistic. The model predicts 84.4% of the responses correctly. The results indicate a strong interaction between these two variables as estimates of PNs who did not return to

school. When both of these variables exist, there is a 5.865 unit increase in PNs not returning to school for every one unit increase in PNs not wanting to go to school full-time. For every one unit increase in strict attendance requirements there is a .072 decrease in PNs not returning to school for RN education (or a .072 unit increase in the number of PNs that are returning to school). See table 4.8.

Table 4.8

Logistic regression analysis of variables "don't want to go to school full-time" and "strict attendance requirements" tested against the dichotomous dependent variable of PNs who did or did not return to school for RN education

Independent Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Don't want to go to school full-time	1.769	.664	7.099	1	.008	5.865
Strict attendance requirements	-2.635	1.087	5.878	1	.015	.072

Model Chi-Squared = 15.829 with 2 df.

Hypothesis 4: The identified barriers preventing PNs in the state of North Carolina from pursuing RN education are barriers that support the utilization of non-traditional educational methodologies, such as online learning or distance education.

Interviews were conducted with a convenience sample of experts in the field of nursing that consisted of the nurse administrator of a large medical center, a unit nurse manager at a major tertiary care referral center, and a staff RN at a major tertiary care referral center. Interviews were also conducted with experts in the field of nursing education that consisted of the director of a PN nursing program, the director of an ADN program, and the Lead Instructor of a Fundamentals of Nursing course in an ADN program. The experts were asked the question, "Do you feel barriers exist that prevent PNs from returning for RN education?" All experts agreed that barriers did exist. Experts were then asked the question, "What do you feel the major barrier to PNs returning for RN education is?" Four of the experts chose attendance requirements as the major barrier to PNs returning for RN education, one chose PNs not wanting to return to school full-time, while two chose job responsibilities. These findings support the findings of the survey tool completed by 128 PN respondents, which identified strict attendance requirements and full-time attendance as barriers to PN to RN education in North Carolina. The data are presented in table 4.9 below.

Table 4.9

Factors Identified by Experts in the Fields of Nursing and Nursing Education as Expected Barriers to PN to RN Education in the State of North Carolina

	Strict Attendance Requirements	Don't Want to go to School Full-time	Job Responsibilities
Nurse Administrator			*
Nurse Manager			*
Staff Nurse (RN)	*		
Director of PN Program	*		
Director of RN Program	*		
Lead Instructor of RN Program	*		
Instructor in PN Program		*	

An asterisk (*) in a column correlates with the identified expert identifying this factor as an expected barrier to PN to RN education within the state of North Carolina.

The experts interviewed during data collection were asked if they felt the variable they identified as a major barrier to PNs pursuing further education would be positively or negatively affected by a non-traditional approach to PN to RN education. For purposes of the interview, traditional education was defined as education that required regular and consistent face-to-face

participation of students in a physical classroom setting. Non-traditional education was defined as education that utilized alternative delivery methods and included distance education and online learning. All experts agreed that a non-traditional approach to PN to RN education had the potential to positively affect the factors they identified as major barriers to PN to RN education. However, it was pointed out that flexibility in scheduling of any approach, whether traditional or non-traditional, would have the greatest positive impact on the variables cited as barriers. Again, these findings support the findings of the 128 PN respondents that participated in the survey, as the most significant barrier identified was that of strict attendance requirements.

Based on the information obtained from analysis of the survey questions completed by PNs in the state of North Carolina, and which is supported by personal interviews with experts in the field, it is believed that the barrier of strict attendance requirements would be positively affected by a non-traditional educational methodology, such as distance education or online learning. However, the barrier of full-time attendance

might or might not be positively impacted. If the respondent identified this variable as a barrier related to the time involved in travel and face-to-face classroom participation occurring on a pre-set timeframe, then it is possible that altering the schedule to improve the flexibility of study time, class time, and removing or reducing travel time could positively impact this variable. Since the variable of strict attendance requirements was the only other variable chosen with statistically significant frequency, and since the variable of not enough time was also a choice on the survey item and it proved to not be a significant barrier, it is the belief of this researcher that the aforementioned scenario is most likely to be true. Therefore, it is concluded that the barriers of strict attendance requirements and not wanting to attend school full-time would be positively impacted by a nontraditional educational methodology such as online learning or distance education: The null hypothesis 4 is rejected.

Summary

The purpose of this chapter was to present the analysis of the data and findings. The first three

hypotheses were tested using binary logistic regression to determine the mean scores of each barrier within the specific barrier category.

Hypothesis one stated that situational variables are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. The situational variables tested were: time to complete degree, attendance requirements, scheduling problems, courses not available, too much red tape, not enough information, no way to get credit, or don't meet the requirements. The null hypothesis one was not rejected for any of the stated variables.

Hypothesis two stated that dispositional variables are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. The dispositional variables tested were: not enough energy, tired of studying, tired of attending classes, past low grades, feeling too old, don't want to go full time, afraid to appear too ambitious, or don't know what to learn. The null hypothesis two was not rejected for the variables of not enough energy, tired of studying, tired of attending classes, past low grades, feeling too old, afraid to appear too ambitious, or don't know what

to learn. The null hypothesis two was rejected for the variable of not wanting to go to school full-time.

Hypothesis three stated that institutional variables are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. The institutional variables tested were: time to complete degree, strict attendance requirements, scheduling problems, courses not available, too much red tape, not enough information, no way to get credit, or don't meet the requirements. The null hypothesis three was not rejected for the variables of time to complete a degree, scheduling problems, courses not available, too much red tape, not enough information, no way to get credit, or don't meet the requirements. The null hypothesis three was rejected for the variable of strict attendance requirements.

Hypotheses four was evaluated by analyzing the data obtained during testing of the first three hypotheses as well as information from personal interviews with experts in the field of nursing administration and nursing education. Hypothesis four stated that the identified barriers preventing PNs in the state of North Carolina from pursuing RN education are barriers that support the

utilization of non-traditional educational methodologies, such as online learning or distance education. The null hypothesis four was rejected and it is believed that the barriers of strict attendance requirements and not wanting to attend school full-time would be responsive to non-traditional delivery models such as online learning and distance education.

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter five presents the study summary, conclusions, and recommendations. This chapter is organized by the following topics: Summary of the Study, Results, Conclusions Based on the Study's Theoretical Framework, Recommendations for Future Research, Recommendations for PN to RN Educational Programs in the State of North Carolina, and Summary.

Summary of the Study

Need for the Study

The nursing shortage has increased and is only expected to worsen. The review of the literature shows that this is a global crisis. In the United States alone there is expected to be a shortage of 400,000 RNs by the year 2020. Many strategies have been recommended to solve this crisis, however, it is noted that the solution will be multifaceted. One facet of the solution is to increase the number of RNs educated and to educate new RNs as quickly as possible.

RNs are educated throughout the United States, and specifically in the state of North Carolina, through either a two-year associate degree program, 1 three-year diploma program, or a four year baccalaureate degree

program. With the shortage of nurses increasing each year there is a need to determine the most expeditious manner in which to recruit new RNs into the nursing profession. One possible solution is to move PNs into PN to RN educational programs. PNs have already completed one year of nursing education and require only one more year of education to qualify to sit for the NCLEX-RN examination. Programs exist throughout the United States, and specifically the state of North Carolina, to provide PN to RN education. It is necessary to understand why these PNs are not taking advantage of the existing PN to RN educational programs in order to form a strategy that will encourage PNs to become RNs and help fill the increasing number of RN vacancies that exist.

Purpose of the Study

The purpose of this study was to determine if the current traditional PN to RN educational system in the state of North Carolina presents barriers to the working PN. In addition, if barriers were determined to exist, this study was to identify the barriers to traditional PN to RN education in the state of North Carolina as perceived by working PNs.

This study built upon previous research that categorized educational barriers into three major categories:

1. Situational barriers, or barriers that arise in relation to the lifestyle of the student.
2. Institutional barriers, or barriers that arise in relation to the educational system.
3. Dispositional barriers, or barriers that arise in relation to the students feelings concerning continuing education.

Procedures

A cross sectional random sample was chosen from the entire population of PNs in the state of North Carolina. A total of 500 subjects were included in the sample.

The data collection tool was the "Learning Interests and Experiences of Adults" which was originally used by Carp, Peterson, and Roelfs in 1973. The tool has been used extensively since that time and was slightly modified by Powell in 1989. The demographic section of the tool was slightly modified and the construction of the tool was altered in the present study: The verbiage of the items within the three major categories did not change from that used by Powell in 1989. Each of the

three categories contained eight potential barriers, also consistent with the research conducted by Powell in 1989.

Data Analysis

The data obtained in this study was analyzed in a number of ways. First, the percentage of subjects that reported each variable as a barrier was determined and then the variables were ranked in order from the most reported to the least reported. Logistic regression analysis was used to estimate the effect of each variable on the PNs decision to either return to school or not to return to school.

Experts were interviewed from various levels of nursing administration as well as various levels of nursing education. The experts were asked if they felt barriers existed in the current PN to RN educational system in the state of North Carolina and what they felt the most significant barrier was, from the PNs perspective.

Results

The results of this study indicate that PNs, nursing administrators, and nurse educators in the state of North Carolina perceive barriers in the existing PN to RN educational system. The dispositional factor of not

wanting to go to school full-time and the institutional factor of attendance requirements were determined to be specific barriers perceived by PNs in the state of North Carolina to the existing PN to RN educational system.

Conclusions

Conclusion to Hypothesis One

Hypothesis one states: Situational variables are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. Situational variables tested were: such as time, cost, home responsibilities, no place to study, no childcare, family doesn't like idea, or no transportation. The null hypothesis one was not rejected for all stated variables at the 95% confidence interval. This indicates that the eight situational variables listed are not perceived as barriers to the existing PN to RN educational system in the state of North Carolina.

Conclusion to Hypothesis Two

Hypothesis two states: Dispositional variables are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. Dispositional variables tested were: not enough energy, tired of studying, tired of attending classes, past low

grades, feeling too old, don't want to go to school full-time, afraid to appear too ambitious, or don't know what to learn. The null hypothesis two was rejected for only one variable: Not wanting to go to school full-time. This indicates that having to attend PN to RN classes full-time is perceived as a barrier to PNs in the state of North Carolina. Additionally, the variable of having low grades in the past was not statistically significant at the 0.05 significance level, however, the significance level of 0.058 is very close and therefore this variable should not be completely dismissed.

Conclusion to Hypothesis Three

Hypothesis three states: Institutional variables are perceived as significant barriers preventing PNs in the state of North Carolina from pursuing RN education. Institutional variables tested were: time to complete degree, attendance requirements, scheduling problems, courses not available, too much red tape, not enough information, no way to get credit, or don't meet the requirements. The null hypothesis three was rejected for only one variable: Strict attendance requirements. This indicates that traditional attendance requirements are

perceived as a barrier to existing PN to RN education by PNs in the state of North Carolina.

Conclusion to Hypothesis Four

Hypothesis four states: The identified barriers preventing PNs in the state of North Carolina from pursuing RN education are barriers that support the utilization of non-traditional educational methodologies, such as online learning or distance education. The variables identified as barriers in this study were strict attendance requirements and not wanting to attend school full-time.

It is now clear that barriers exist to PN to RN education and strategies to eliminate these barriers must be developed and implemented to encourage more PNs to obtain RN education. It is reasonable to believe that removing the barriers identified by PNs as preventing them from obtaining PN to RN education would motivate them to further their education. However, it is possible that other barriers are co-contributors to the PNs decision to not return to school or that simply removing the barrier will not fully motivate them to continue their education. At the same time, dispositional variables such as not enough energy, tired of studying,

tired of attending classes, past low grades, feeling too old, being afraid to appear too ambitious, or not knowing what they wanted to learn, were not perceived as barriers to PN to RN education by the subjects. If this group of subjects was not motivated to continue their education the dispositional variables mentioned should have been significant: Therefore, a lack of motivation does not appear to be a significant factor. Likewise, of the 128 respondents only 9 (7%) stated they were not interested in pursuing PN to RN education.

The two identified barriers can be reduced or eliminated by altering the delivery model of the PN to RN curriculum and thereby better meeting the needs of working adults. A distance learning approach that utilizes online education for the delivery of theory content would provide the necessary flexibility to overcome the barrier of strict attendance requirements for the classroom/lab portion of nursing courses. The clinical component could be scheduled at non-traditional dates/times to offer the flexibility necessary to accommodate adult students. The null hypothesis four is rejected in relation to the barrier of strict attendance requirements. It is believed by this researcher that a

distance learning approach would eliminate, or at the very least significantly reduce, the barrier of strict attendance requirements in relation to PN to RN education within the state of North Carolina. This option needs to be better explored by educators and administrators.

At the same time, the proposed distance learning approach would not necessarily overcome the barrier of not wanting to go to school full-time. It is necessary to determine what the PNs perceive as a barrier towards going to school full-time. It is possible that going to school full-time is perceived as a barrier because it requires frequent trips to campus, which could be overcome by the distance-learning model. Since it is already possible to complete most, if not all, non-nursing courses prior to entering the nursing courses at all community colleges in the state of North Carolina it is unlikely that the course load is thought of as a barrier. It is possible that this information has not been shared with PNs, but the institutional barrier of not enough information was not considered a barrier. The length of PN to RN programs in the state of North Carolina is two to three semesters. Each semester consists of one nursing course with the exception of an

additional two credit nursing course in the last semester. This information supports the argument that the flexibility of a distance learning approach to PN to RN education within the state of North Carolina would reduce or eliminate the perceived barrier of not wanting to go to school full-time. The null hypothesis four is rejected and it is believed that non-traditional educational delivery methods, such as online learning and distance education would encourage PNs in the state of North Carolina to pursue PN to RN education.

Recommendations for Future Research

This study lays the groundwork for future research to determine perceived barriers to nursing education, as well as strategies to overcome identified barriers. The current study was limited to determining perceived barriers to PN to RN education within the state of North Carolina. The study should be repeated with a larger sample size that includes the southeastern region of the United States. The literature indicates that the nursing shortage is greater in this area of the U.S. than any other and therefore it has the greatest need to increase the number of RNs as quickly as possible.

It is recommended that further study into the development and implementation of distance learning PN to RN options occur. This would require the exploration of alternatives to traditional clinical activities, such as mentoring and precepting by experienced RNs and these and other alternatives should be studied.

The factors this study measured as barriers to PN to RN education is not inclusive and it is possible that unidentified variables exist that are having a major impact on this group of individuals. Although the identified factors have proven reliable in previous studies, it is suggested that future studies should consider identification of other factors as well. Such factors could be access to, and comfort with technology, Internet access capabilities and reliability, or availability of mentors.

Recommendations to PN to RN Educational Programs in the State of North Carolina

Based on the conclusions from this study, the following recommendations are made to PN to RN educational programs in the state of North Carolina:

1. Review existing attendance policies carefully. It is possible that the policies are outdated or too

stringent without cause. Strict attendance requirements are perceived by PNs in the state as a barrier to PN to RN education. Adjusting or modifying existing attendance policies may serve to decrease this barrier.

2. Consider whether the existing attendance policy is in agreement with adult learning theory. Policies that require students to attend classroom activities communicate in an adult to child manner, which is undesirable. Adults are responsible for their learning and adding the flexibility of whether attendance is necessary should rest with the adult student.
3. Consider which is most important, the outcome of learning or the delivery model of teaching. Although adequate delivery methods (teaching) are vital, the most important goal is the outcome (learning). If adult students are able to learn the necessary information then the goal has been met. This may require a shift in faculty thinking and an overhaul of existing methodology. The literature review supports a widespread view of nursing education as being rigid and inflexible.

It is possible to maintain a rigorous curriculum and allow flexibility in implementation of the learning environment. Unless the entire faculty, including administrators practice this philosophy the barriers to nursing education will continue to exist.

4. Review the information that is given to individuals interested in pursuing PN to RN education. Is the information complete and encourages them to take non-nursing courses prior to entering the curriculum? This approach will allow students to complete PN to RN education in a part-time manner, which will decrease the number of courses taken simultaneously. This approach may lessen the barrier identified by PNs in the state of not wanting to go to school full-time.
5. Identify online sources for the non-nursing courses required in PN to RN education. It is likely that at least part, if not all, of the non-nursing courses required in PN to RN education are already offered by many educational facilities. If courses are not offered consider approaching the department and asking that the courses become

available in an online delivery model. This information should be made readily available to PNs interested in pursuing PN to RN education. This approach will serve to decrease both barriers identified in this study: strict attendance requirements and not wanting to attend school full-time in regards to non-nursing courses.

Summary

This study determined the major barriers to PN to RN education in the state of North Carolina as perceived by PNs in the state. It was concluded that the two factors perceived as barriers by a representative sample of PNs in the state were strict attendance requirements and not wanting to go to school full-time.

The results of this study indicate that PN to RN education within the state of North Carolina should consider delivery methods that offer more flexibility in their structure, thereby reducing the barriers of strict attendance and full-time study. One suggested method is distance education, specifically online courses. Changes to the delivery methods will require the support of academic institutions as well as the faculty involved in implementing the alternate delivery methods. Further

research is necessary to determine the effectiveness of these delivery methods in reducing or eliminating the perceived barriers by PNs in the state of North Carolina.

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APPENDIX A

January 24, 2003

Dear Licensed Practical Nurse:

My name is Douglas M. Turner. I am conducting a survey of Practical Nurses in the state of North Carolina and your name and address was obtained through the North Carolina Board of Nursing. This research is exploring Practical Nurses interest in continuing their education. Presently, little is known about this topic, and I am collecting information to identify barriers that may prevent PNs from becoming Registered Nurses. This research is part of my scholarly efforts and is a requirement to obtain a Doctorate of Philosophy in Health Sciences. A summary of the information compiled will be available upon completion of the study. You may receive a copy by checking the box indicating your interest at the end of the enclosed survey.

My study involves analyzing your answers to the enclosed survey. It is important to have a sense of the issues that have shaped, and continue to shape, Practical Nurses' continuing education. By understanding these issues we will be better able to develop educational programs that best suit your needs. The information obtained will be used for statistical purposes only and you will not be identified in anyway. Confidentiality is guaranteed. I will be the only person to see the completed survey and once the information is analyzed the survey tool will be shredded.

I am enclosing the survey, which will assist me in compiling data that might be of assistance in developing RN programs that will fit into the busy lives of PNs. Completion of the survey should take no more than 10 minutes and will be of great assistance in the formulation of my data. **To show my gratitude for your assistance, you will automatically be entered in a drawing for $100 cash if you return this survey no later than February 7, 2003. You have a 1 in 500 or better chance of winning!!**

Thank you in advance for your time and attention.

Sincerely,

Douglas M. Turner, RN, MSN
Ph.D. Candidate

Sally Hutslar, PhD
Faculty Advisor

APPENDIX B

A Nursing Survey

Instructions for Completing the Survey

Please answer every question. Please take the time to read and answer each question carefully. **This example is for your review.** Do not answer this question. The questionnaire begins with the section ***My Opinions*** on the next page.

1. **The following are some problems reported by other adults, which might make participation in formal college study difficult. Please indicate the degree of concern that these are for you. Mark an X under the appropriate level of concern as it applies to you.**

	Not a Concern	A Minor Concern	Somewhat of a Concern	A Considerable Concern	A Major Concern	An Overwhelming Concern
Sunny Days	☒	☐	☐	☐	☐	☐
Rainy Days	☐	☐	☐	☐	☒	☐

Please begin the survey now

The following are some problems reported by other adults, which might make participation in formal college study difficult. Please indicate the degree of concern that these are for you. Mark an X under the appropriate level of concern as it applies to you.	Not a Concern	A Minor Concern	Somewhat of a Concern	A Considerable Concern	A Major Concern	An Overwhelming Concern	Do Not Write In This Column
Cost, including books, learning materials, childcare, transportation, as well as tuition.	☐	☐	☐	☐	☐	☐	S1
Not enough time	☐	☐	☐	☐	☐	☐	S2
Amount of time required to complete the program	☐	☐	☐	☐	☐	☐	I1
No way to get credit for a degree	☐	☐	☐	☐	☐	☐	I8
Strict attendance requirements	☐	☐	☐	☐	☐	☐	I4
Don't know what I'd like to learn or what it would lead to	☐	☐	☐	☐	☐	☐	D6
No place to study or practice	☐	☐	☐	☐	☐	☐	S7
No child care	☐	☐	☐	☐	☐	☐	S5
Courses I want aren't scheduled when I can attend	☐	☐	☐	☐	☐	☐	I2
Don't want to go to school full-time	☐	☐	☐	☐	☐	☐	D8
No information about places or people offering what I want	☐	☐	☐	☐	☐	☐	I3
No transportation	☐	☐	☐	☐	☐	☐	S6
Too much red tape in getting enrolled	☐	☐	☐	☐	☐	☐	I6
Hesitate to seem too ambitious	☐	☐	☐	☐	☐	☐	D7
Friends or family don't like the idea	☐	☐	☐	☐	☐	☐	S8
Home responsibilities	☐	☐	☐	☐	☐	☐	S3
Job responsibilities	☐	☐	☐	☐	☐	☐	S4

Turn page over and continue to answer questions!

The following are some problems reported by other adults, which might make participation in formal college study difficult. Please indicate the degree of concern that these are for you. Mark an X under the appropriate level of concern as it applies to you.	Not a Concern	A Minor Concern	Somewhat of a Concern	A Considerable Concern	A Major Concern	An Overwhelming Concern	Do Not Write In This Column
Not enough energy and stamina	☐	☐	☐	☐	☐	☐	D3
Afraid that I'm too old to begin	☐	☐	☐	☐	☐	☐	D1
Low grades in the past, not confident of my ability	☐	☐	☐	☐	☐	☐	D2
Don't meet requirements to begin program	☐	☐	☐	☐	☐	☐	I7
Courses I want don't seem to be available	☐	☐	☐	☐	☐	☐	I5
Don't enjoy studying	☐	☐	☐	☐	☐	☐	D4
Tired of going to school, tired of classrooms	☐	☐	☐	☐	☐	☐	D5

For use in interpreting your responses, answers to the following questions are necessary.

Your gender: Female ☐ Male ☐ D1

Your age: <20 years ☐ 20-29 years ☐ 30-39 years ☐

40-49 years ☐ 50-60 years ☐ >60 years ☐ D2

Your race: White/Non-Hispanic ☐ African American ☐ Hispanic ☐

Asian Pacific Islander ☐ Native American ☐

Other (please specify) _____ D3

Turn page over and continue to answer questions!

What is your marital status: Single ☐ Married ☐ Divorced ☐

Separated ☐ Widowed ☐ D4

How many dependent children, 17 years or younger, do you have living with you?

0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 or more ☐ D5

Approximately what was the combined income of you and your spouse (if married) last year (before taxes)? Under $15,000 ☐ $15,000 to $24,999 ☐

$25,000 to $34,999 ☐ $35,000 to $44,999 ☐

$45,000 to $54,999 ☐ $55,000 to $74,999 ☐

$75,000 to $99,999 ☐ $100,000 or more ☐ D6

How many hours per week do you work at a paid job or jobs?

_____D7

How has your employment status (hourly vs. salaried) influenced your decision not to attend school?

_____

_____D8

What was the most important reason that deterred you from returning to school?

_____

_____D9

If you have continued your education, what was the most important reason for choosing the institution?

_____

_____D10

Other Comments:

_____

_____D11

THANK YOU! Please return the questionnaire in the self-addressed stamped envelope provided.

If you would like to receive a summary of the study findings, please check this box ☐

Adapted from Learning Interests and Experiences of Adult Americans; Cross, 1981 and Powell, 1989