

PREDICTING DEPARTURE OF BACCALAUREATE PREPARED GRADUATE
NURSES PARTICIPATING IN A TWELVE MONTH NURSE RESIDENCY PROGRAM

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DEDICATION

To my husband, Steven Pine,
thank you for inspiring me to do better. Your encouragement, unending support, patience and
love made this dissertation possible.

To my two sons, Chris and Matt,
thank you for believing in me.

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ABSTRACT

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PREDICTING THE DEPARTURE AND RETENTION OF BACCALAUREATE PREPARED GRADAUTE NURSES PARTICIPATING IN A TWELVE-MONTH NURSE RESIDENCY PROGRAM

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The pervasive nursing shortage and the rate of job turnover among graduate nurses (GNs) served to guide the research question which examined whether the variables job satisfaction, autonomy, critical thinking, age, ethnicity and unit of employment were predictors of the departure or retention of baccalaureate prepared graduate nurse residency participants. Distinguishing between the GNs, who remains, from those, that depart aids in the understanding of the factors that affect a new nurse graduate's transition into and continued employment within hospitals.

The study used a quantitative non-experimental research design employing secondary data analysis. Retrospective demographic data were collected from graduate nurses who had participated in the study hospital's nurse residency program from 2005-2009. Of 427 eligible participants 379 (88.75%) participated in completion of all four data elements, Mueller McCloskey Job Satisfaction Survey (MMSS), Gerber's Control Over Nursing Practice (CONP), University HealthSystem Consortium's Critical Thinking Exam (UHC NRP) and a demographic data sheet. An adaptation of the Price Mueller Causal Model (PMCM) served as the theoretical underpinning for this study.

The study is one of the first such studies that distinguish among those GNs who remain in nurse residency programs at academic medical centers. The results of the study indicate that

satisfaction, age and autonomy predict those who leave and those who stay with 86.8% accuracy of which a 9% margin of difference between staying and leaving. The strongest influence appears to be job satisfaction. Ethnicity, unit of service, and critical thinking did not contribute to the prediction. This study suggests that nurse administrators should implement multiple tactics to retain GNs that focus on job satisfaction and autonomy, and nurse educators should strengthen experiences that reflect realistic situations that may help soften the shock of the first year of employment.

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CHAPTER I

INTRODUCTION

Since Kramer's (1974) book, *Reality Shock* the problem of departure and retention of baccalaureate prepared graduate nurses (GNs) from hospitals has been the subject of considerable discourse (Gerrish, 2000; Beecroft, Kunzman & Krozek, 2001; Almada, Carafoli, Flatterey, French & McNamara, 2004; Bowles & Candela, 2005; Ackermann, Kenny, & Walker, 2007). Turnover for graduate nurses during the first year of employment is particularly high with median turnover rates ranging from 35% to 61% (Nursing Executive Committee, 2001; Casey, Fink, Krugman, & Propst, 2004). Over 25% of GNs have already worked for two or more institutions six to eight months post graduation (National League for Nursing [NLN], 1999) and half leave their first employer in the first year (NLN, 2006).

Failure to retain nurses is costly. Every percentage point in nurse turnover costs the hospital approximately \$300,000 annually and hospitals that perform poorly in nurse retention spend an average of \$3.6 million more than those hospitals with high retention rates (PwC HRI, 2007). This revolving door of turnover is quite expensive yet there is limited effective information on turnover predictors among GNs. (Contino, 2002; University HealthSystem Consortium, [UHC], 2006). Distinguishing between those GNs who remain from those that depart may aid in the understanding of the factors that affect a new nurse graduate's transition into and continued employment within hospitals. In turn, understanding the specific factors that

predict early departure may help nurse administrators and nurse educators influence job content and context to retain GNs.

Problem of the Study

The current study is designed to examine variables that may predict the departure and retention patterns of baccalaureate prepared graduate nurse residency participants. Factors such as job satisfaction, autonomy, critical thinking, and demographic variables such as age, ethnicity, and unit of employment were used as predictor variables to distinguish baccalaureate prepared GNs who were retained from those who departed the study institution while participating in a prescribed 12-month nurse residency program.

Rationale for the Study

There is no debate about the nursing shortage, or that this shortage is ongoing with scant relief evident (Buerhaus, 2009). The turnover among GNs influences the nursing shortage and promises to have long term effects on patient outcomes. Whether the shortage is caused by diminished supply or high turnover, distinguishing between those GNs who remain from those that depart may aid in the understanding of the factors that affect a new nurse graduate's transition into and continued employment within hospitals. The information gained in this study will serve as a foundation in the formulation of innovative strategies to retain GN s.

Understanding the specific factors that predict early departure may assist nurse administrators and nurse educators to better address factors that will increase retention of newly hired GNs. Given that the risks for the study are negligible and potential benefits great, there is justification for the research.

Conceptual Framework

The Price Mueller Causal Model (PMCM) was adapted to guide the research process in this study and depicts variables that influence nurse departure (See figure 1). The findings in this study may make a case for the existence of a complex relationship between the variables under study and departure of the GN.

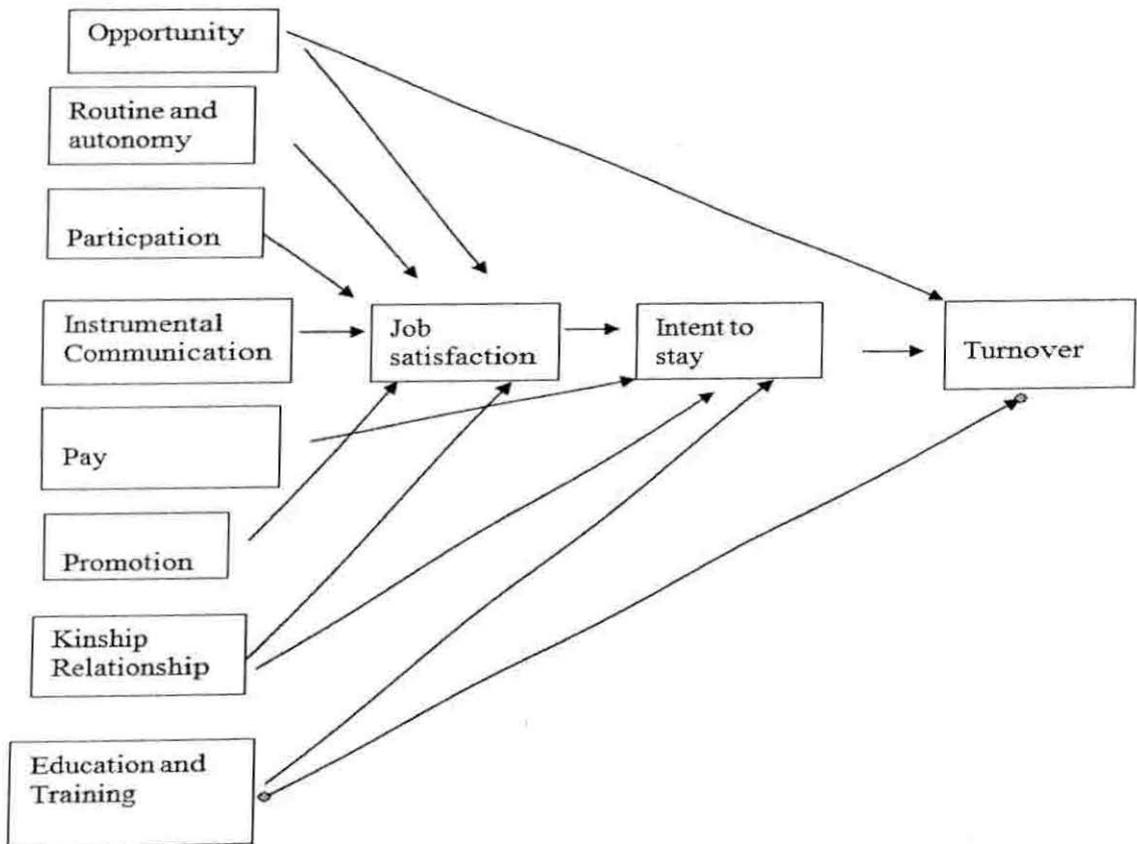


Figure 1. Price Mueller Causal Model (Price & Mueller, 1981a)

Price and Mueller's model was developed as an attempt to standardize and simplify understanding of the concepts of turnover and job satisfaction in various organizations (Price & Mueller, 1981). Price and Mueller's model includes nine variables which influence job satisfaction and turnover. The variables include opportunity, routine and autonomy, participation, instrumental communication, pay, promotion, kinship relationship, intent to leave and education and training. The PMCM conceptualizes departure as a multistage process linking social and experiential orientations, attitudes toward the job, the decision to quit, and the behavior of actually quitting. There are multiple determinants, which combine to determine departure or staying at an organization (Price & Mueller, 1981a). Price and Mueller's model was developed as an attempt to standardize and simplify the concepts of turnover and job satisfaction in various organizations (Price & Mueller, 1981b).

Price and Mueller's model includes nine variables: routinization, centralization, pay, distributive justice, opportunity, role overload, professionalism, integration, and communication. Later, autonomy was added to the variable list (Price, 2002). All of these variables influence job satisfaction and thus, turnover. While Price and Mueller (1981a) argue that demographic variables provide little explanatory power for turnover and job satisfaction, they do reason that demographic variables may have an interaction effect, and to some degree do influence job satisfaction and turnover.

The model suggests that there are specific antecedents to turnover, such as autonomy and job satisfaction. Multiple determinants combine to determine staying or leaving such as satisfaction, autonomy, and variety in the job (Price & Mueller, 1986). The PMCM has been tested and modified over many years to reflect continuing research in the field (Bean, 1979; Wakefield, Curry, Price, Mueller, & McCloskey, 1988; Montague, 2004).

The Price and Mueller Causal Model is derived from expectancy theory. Expectancy theory is a process motivational theory developed by Vroom in 1964. Expectancy theory emphasizes a person's effort and performance, as well as the desirability of outcomes resulting from performance. The theory focuses on the impact of achieving the goal and not the goal itself (Vroom, 1964, /1995). The theory has three distinct components: (a) expectancy, (b) instrumentality, and (c) valence. Expectancy is perceived probability that effort will lead to a specific behavior, or the degree to which people think they can do something (Vroom, 1964/1995); instrumentality is the probability of attaining a goals and valence is either a positive or negative outcome. The premise of the theory is that all three components are equally of importance and must be present to motivate decision-making (Vroom, 1964/1995). To simplify, the GN who takes responsibility for the job will do well and will receive rewards. This in turn will increase job satisfaction.

The current study was undertaken to predict which specific variables influence graduate nurse departure at the study organization. For the purposes of this study, modifications were made to the model (Figure 2). The modified model illustrated in Figure 2 is not complete, but includes significant variables related to nurse turnover. Variables in the modified PMCM model represent factors in the work environment that are regarded as influential prior to making the decision to stay or leave. These variables are autonomy, critical thinking, and job satisfaction, and the demographic variables of age, unit, and race.

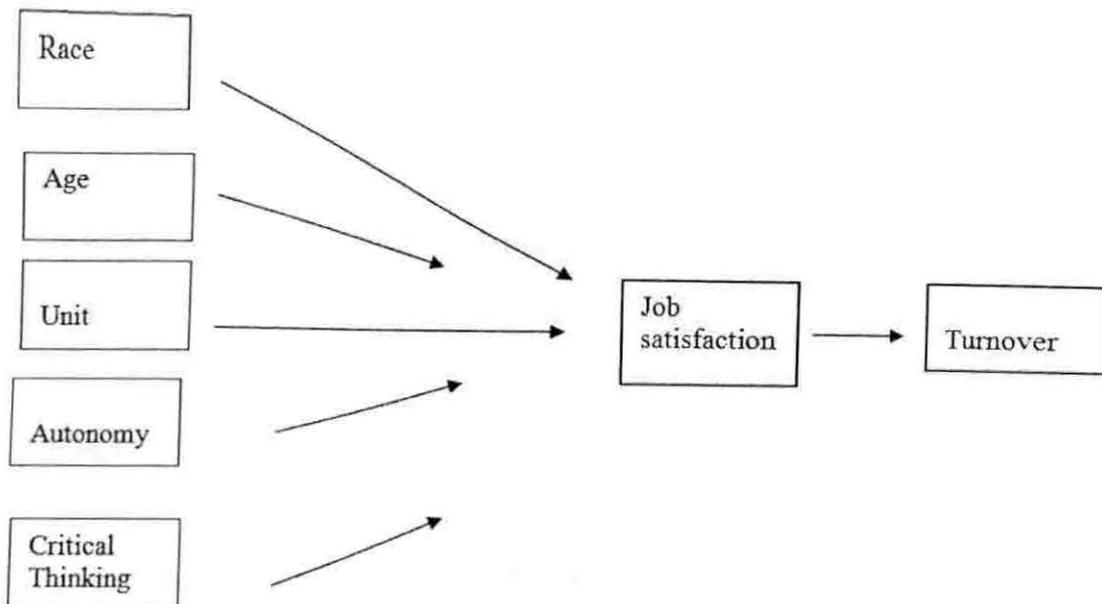


Figure 2. Adapted Price and Mueller Causal Model

The modifications serve as an integrative model of a GN's decision to remain or depart from an employing organization. This study suggests that there are specific antecedents to departure, like job satisfaction, autonomy, and critical thinking. Satisfaction and autonomy are key antecedents in the PMCM model. The third variable, critical thinking is included because the literature suggests that critical thinking may be linked to retention among new nurses (Boychuk-Duchscher, 2001; Del Bueno, 2005, 2001; Ackermann et al., 2007). This study hypothesizes that critical thinking influences the decision to stay or leave an employing institution. Variables such as age, unit, and race are included in this study because studies have shown these variables may influence the decision to depart an organization (Greene, 2005; Halfer & Graf, 2005). It is believed that the modified model may be meaningfully expected to predict departure among GNs.

Assumptions

The following assumptions are made for the purposes of this study:

1. Job satisfaction is static rather than variable.
2. Departure is based upon multiple processes and not a single event.
3. Social and psychological influences influence departure.
4. Baccalaureate prepared GNs bring similar levels of nursing knowledge and skills to the workplace.

Research Question

The research question addressed by this study is: Do the variables, job satisfaction, autonomy, and critical thinking, age, ethnicity, and employing unit predict which baccalaureate prepared GNs complete the nurse residency program and stay employed at the study institution and which nurse residents depart the program early?

Definition of Terms

The following key terms are defined for the purposes of this study:

1. Graduate nurse - completed a baccalaureate degree nursing program within six months of accepting an entry level position at the study hospital (UHC, 2006).
2. Job satisfaction- conceptually defined as “degree of affective orientation toward employment” (Mueller & McCloskey, 1990; p.113). Operationally, job satisfaction is defined as the total score on the Mueller McCloskey Satisfaction Scale (MMSS).
3. Autonomy- conceptually defined as the perceived freedom to exercise authority and to assume inherent accountability for the outcomes of role performance (Lancero & Gerber, 1995). Autonomy is operationally defined as total score on Gerber’s Control over Nursing Practice Scale (CONP) (Lancero & Gerber, 1995).

4. Critical Thinking- conceptually defined as the process of analyzing and understanding how and why a certain conclusion was reached (Morrison, Nibert, & Flick, 2006, p.149).
Operationally, critical thinking is the total score on the University HealthSystem Consortium Nurse Residency Exam (UHC NRP exam).
5. Departure- conceptually defined as the voluntary or involuntary loss of an individual in a job (Price & Mueller, 1981). Departure is calculated to be the total number of graduate nurses in the organization that resigned during the time that the GN participated in the nurse residency program of study.
6. Nurse Residency Program (NRP) - a program designed to transition the baccalaureate prepared nurse from student to professional nurse (Herdrich & Lindsay, 2006).
Operationally, this NRP program follows the University HealthSystem Consortium (UHC) curriculum at the study hospital.
7. Age- actual number of birth years.
8. Race or ethnicity- a social construct based on biological characteristics (Tanner, 1996).
9. Unit of employment- the inpatient units caring for specific patients. Each unit has a defined unit type and for purposes of this study will include critical care units, medical/surgical units, women's health units, Emergency Department and Perioperative Departments (American Nurses Association, 2000; Taunton et al., 2004).

Limitations

The following limitations influence this study:

1. GNs included in this study are employees of a single hospital; therefore findings can be generalized only to this setting.

2. As with any secondary data analysis, the research is limited by the scope of the previous data collection. This means that important concepts may not be captured.
3. The focus of the study is limited to determining the variables that may influence departure among baccalaureate prepared GNs participating in a 12- month nurse residency program.
4. GNs self-selected into the study hospital. Therefore, their specific traits may influence differences in the variable of departure.

Summary

There is a nursing shortage and it is compounded by a high rate of turnover of GNs. This shortage has consequences for educational institutions that supply nurses to the hospital, as well as the hospitals that provide a satisfying work environment for nurses, and that is ultimately safe for patients. The GN needs an optimal work environment to succeed and to be retained, and turnover is influenced by job satisfaction and autonomy and perhaps, critical thinking. Distinguishing between the characteristics of those GNs who remain from those who depart may aid in the understanding of the factors that affect a new nurse graduate's transition into and continued employment within hospitals. A modified PMCM will be used to guide the present approach, illuminating the multifactorial nature of turnover among GNs. Therefore, understanding the specific factors that predict early departure may help nurse administrators and nurse educators manipulate job content and context to retain GNs.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter is organized by the major variables used in the study and pertinent literature relevant to GN transition, turnover and role adjustment. These variables include turnover among new nurses and factors affecting the transition into practice among new nurses – job satisfaction, autonomy, and critical thinking. Age, ethnicity, race, and unit of employment may play a role in departure and were reviewed. Pertinent literature relevant to graduate nurse (GN) transition programs designed to address the issues of role adjustment was reviewed as well as turnover and competency.

Conduct of the Literature Review

A review of the literature was conducted via print, Internet, and database searches. The central focus of the search was transition programs, nursing shortage, turnover, job satisfaction among GNs, role adjustment, competency, and critical thinking in the acute care hospital setting. The investigation used the Cumulative Index of Nursing and Allied Health Literature (CINAHL Plus with Full Text) as its primary source. MEDLINE, ERIC and PsychInfo were used to lend breadth and depth. Keywords employed to search databases were *nurse shortage*, *internships*, *nurse residency programs*, *externships*, *transition programs*, *workplace competency*, *critical thinking*, *age*, *unit*, *race*, *ethnicity*, *role transition*, *critical thinking*, and *role adjustment*. All keywords were combined with the terms GN, new GNs, or new nurse. Other keywords identified were *nursing shortage* and *turnover rates*. A search of local university libraries and an Internet search using Google and Google Scholar as a search engine was conducted. Internet searches

generated resources from nursing and other professional organizations that offered news releases or publications on the nursing shortage situation and the essentials of magnetism. In addition, an ancestry examination was conducted and the reference sections of the original articles were crosschecked for related literature.

Nursing Shortage

Throughout nursing history there have been alternating periods of nursing shortage and surplus (Peterson, 1999). However, it is believed that the present nursing shortage is one of the most serious shortages facing hospitals today. Historically, this is considered one of the longest lived nursing shortages nationwide (Buerhaus, Donlelan, Ulrich, Norman, & Dittus, 2006). Since 1997, the media has been reporting a severe shortage of RNs in the United States (U.S.). Estimates of average RN vacancy rates range from 10.2% to 13%, with one in seven hospitals reporting 20% (Spetz & Given, 2003). In 2000, the American Hospital Association (AHA) surveyed 715 hospitals about the nursing shortage, and found that there were 126,000 unfilled registered nurse (RN) positions (AHA, 2001). The International Honor Society for Nursing, Sigma Theta Tau (2001) confirmed that this shortage is unlike any of those experienced in the past.

Historically, these shortages have coincided with economic downturn or war and have been reported in 1918, 1928, 1941, 1966, 1987, 2000, and 2004 (Brewer, 1996; Sochaiski, 2002; Smeltzer, Vlasses, & Robinson, 2005; Buerhaus et al., 2006). According to the National Council of State Boards of Nursing (2006) 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 10% between 1995 and 2004. In a report published in *Nursing Economic\$*, Dr Peter Buerhaus and colleagues (2006) found that despite the increase in employment of nearly 185,000

hospital RNs since 2001, there is no empirical evidence that the nursing shortage has ended. To the contrary, national surveys of RNs and physicians conducted in 2004 found that a clear majority of RNs (82%) and doctors (81%) perceived shortages in their workplace.

According to the American Hospital Association's June 2001 TrendWatch, 126,000 nurses are needed. Shortages of key medical personnel, most notably registered nurses (RNs), are occurring in health care facilities across the nation. Hospitals in particular, where RNs comprise the largest component of the labor force and deliver most of the patient care, are experiencing acute shortages in some parts of the country (The American Hospital Association & Lewin Group, 2001).

Although national vacancy rates dropped to an estimated 8.5% in late 2005, many hospitals continue to struggle with shortages of RNs (AHA, 2006). In fact, independent national random sample surveys conducted in 2004 and 2005 found that a majority of RNs (82%), physicians (81%), hospital chief executive officers (68%), and chief nursing officers (74%) perceived a nursing shortage in the hospitals where they admitted patients or were employed (Buerhaus et al., 2007). The reasons given for the current nursing shortage crisis are:

1. An aging workforce. The average age of the working nurse has increased from 42 to 46 years of age. More than 60% are older than age 40 and only 9% of nurses today are under age 30. It is predicted that by 2010 40% of nurses will be over 50 (The American Hospital Association & Lewin Group, 2001; Joint Commission, 2003; Puntill, 2005; Buerhaus et al., 2006; PwC HRI, 2007).
2. A largely homogenous, female workforce seeking employment opportunities elsewhere. Women have traditionally comprised the nursing profession and still only 6% of nursing positions are held by men. Women have more career options than in the past. For

example, women graduating from high school in the 1990s were 35 % less likely to enroll in nursing education programs than were women graduating in the 1970s (Buerhaus, Needleman, Mattke, & Stewart, 2002; The Joint Commission, 2005; Buerhaus et al., 2006; Buerhaus, 2009).

3. Lack of qualified faculty. Qualified students are turned away from baccalaureate programs because there is limited faculty to support student nurses' learning (American Association of Colleges of Nursing, 2005; Buerhaus, 2009).
4. Demand for nurses to care for an aging baby boomer population that will require even greater amounts of complex care. Complex care poses special demands. The literature is clear in that low RN staffing in hospitals is directly related to adverse patient outcomes. For example, the difference between an RN caring for four to six patients at the same time results in a 14% increase in likely death for those patients; an RN caring for eight patients simultaneously translates to a 31% increase in likely death for those patients (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Aiken & Clarke, 2003).

Turnover

This section describes first year GN turnover rates, its economic impact, and its impact on patient outcomes and nurse outcomes.

First Year Turnover Rates

During the first year of employment turnover for graduate nurses (GNs) is high. According to a National League for Nursing (NLN) study, half of new graduate nurses leave their first employer by the first year (NLN, 2006). In July 2007, a report released by the PricewaterhouseCoopers' Health Research Institute ([PwC HRI], 2007) found that though the

average nurse turnover rate in hospitals was 8.4%, the average voluntary turnover for first-year nurses was 27.1%. Reported median turnover rates for GNs during their first year of employment range from 35% to 61% (Nursing Executive Committee, 2001; Casey et al., 2004). Compounded by a significant nursing shortage and high turnover of GNs the problem of finding and retaining new nurses is a significant problem.

There are many reasons given for turnover among the GN population. Individual reasons for turnover among GNs range from job dissatisfaction to powerlessness (Kramer, 1969; Santucci, 2004; Goode & Williams, 2005); systemic reasons for GN turnover include preparation, or practice gap, (Kramer, 1974; Beecroft, Kunzman & Krozek, 2001; Ackermann et al., 2006; Berkow, Virkstis, Stewart, & Conway, 2008); and a silo approach to orientation, complex patient needs, and a complex hospital environment (O'Brian-Pallas, et al, 2008). Ranging from job dissatisfaction and powerlessness to lack of critical thinking skills, it is evident the GN needs an optimal work environment to succeed and to be retained (Kramer, 1969; Santucci, 2004; Goode & Williams, 2005).

Acclimation to the setting causes an inordinate amount of emotional pressure on GNs. Santucci (2004) highlighted the pressure the GN feels in order to fit in with members of the health care team. Dealing with resistant staff, feeling uncomfortable with posing new ideas or questioning accepted practice, and negotiating with physicians are role expectations for these advanced beginners; and, the literature supports the notion that this is indeed a difficult task. Boychuk-Duchsher (2001), in a qualitative study of the first two months of practice found that the baccalaureate GN experiences enormous frustration being dependent on others for help with teasing out complex or even simple patient problems; they felt drained from the dichotomy of practice and school and reported that they were searching for more stability in practice. From the

employers' perspective, GNs aren't performing at the highest levels. A survey conducted by the National Council of State Boards of Nursing (NCSBN) asked chief nursing administrators if GNs were prepared to give safe, effective care. Only 41.9% of those employers surveyed (N =1230) reported effectual, safe care (Smith & Crawford, 2003).

Turnover among GNs affects the health care institution. Failure to retain nurses is costly. Every percentage point increase in nurse turnover costs the institution an average of \$300,000 annually, and hospitals that fail to retain their nursing personnel spend an average of \$3.6 million more than those hospitals with high retention rates (PwC HRI, 2007). Replacement costs for average medical-surgical nurses is estimated at \$92,000 (Robert Wood Johnson Foundation, 2006). The economic impact of nurse turnover is costly and is often underestimated because of deficient definitions of cost of replacement (O'Brian-Pallas et al, 2006). Cost is usually estimated due to the idiosyncratic nature of reporting in the literature (Health Care Advisory Board, 2000; Pine & Tart, 2007). The Health Care Advisory Board (2000) estimated that the cost of nurse turnover is four to five times higher than is typically accounted for after the loss of productivity associated with acquiring new hires is considered. The Advisory Board further asserted that usual direct costs are approximately 21% while the hidden costs of lost productivity are 70%. This includes a 4% loss predeparture, 15% loss for the vacancy, and an 81% loss while the new hire achieves a productive level. Aiken & Clarke (2003) concluded that turnover among nurses, and in particular among GNs, is a concern for nursing management for three major reasons: 1) high costs of recruitment, 2) high costs of orientation and training, and 3) loss of new nurse productivity.

However, the negative effect of turnover among GNs does not relate to costs alone. Turnover among nurses is also related to deleterious outcomes for patients. There is a greater

likelihood of patient death with low RN to patient ratios (Aiken et al., 2002; Aiken & Clarke, 2003; Aiken et al., 2003). In April of 2001, the Health Services Research Administration released an impressive study that was subsequently reported in the *New England Journal of Medicine*. The study, "*Nurse Staffing and Patient Outcomes in Hospitals*" was based on 1997 data collected from more than five million *patient* discharges from 799 hospitals in 11 states (Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002). This study found a strong and consistent relationship between *nurse* staffing and five *outcomes* in medical patients: urinary tract infection, pneumonia, shock, upper gastrointestinal bleeding, and length-of-stay. A higher number of registered nurses also were associated with a 3% to 12% reduction in the rates of adverse *outcomes*, while a higher staffing level for all types of nurses was associated with a decrease in adverse *outcomes*, ranging from 2% to 25%.

Canadian nurse researchers, Tourangeau, Giovannetti, Tu, and Wood (2002) found that retaining more experienced nurses on their units appeared to decrease preventable deaths in hospitalized patients, and correlated nurse experience with mortality in Ontario, Canada.

Performing a series of regression analyses they determined that:

1. A 10% increase in the proportion of RNs across all hospital types was associated with five fewer *patient* deaths for every 1,000 discharged patients.
2. In urban community hospitals, each additional hospital mean year of *nurse experience* was associated with six fewer *patient* deaths for every 1,000 discharged patients.
3. In non-urban community hospitals, each additional hospital mean year of *nurse experience* on the clinical unit was associated with four fewer *patient* deaths for every 1,000 discharged patients.

4. The mean risk-adjusted 30-day mortality rate for all sample hospitals was 15% (150/1000 patients discharged).

The National State Board of Nursing survey (Smith & Crawford, 2003) found that although 57% of the chief nursing officers (CNOs) thought graduate nurses were unsafe for practice, 38% of new graduates had six to seven patients assigned to them per shift and 11% had more than seven patients assigned. These findings show that GNs in practice is a problematic issue. Despite this, other recent research documents that nurses prepared at the baccalaureate level provide care with better patient outcomes than nurses prepared at other levels (Aiken et al., 2003). These studies show that turnover is detrimental to patient outcomes, nurse outcomes and has a negative impact economically.

Role Transition and Socialization of the GN

Although transition and socialization of GNs is a challenging concept to explain, there is abundant literature about the status of GN transition and socialization and its influence on turnover. From this, the reader finds that the experiences of newly registered nurses cannot be discounted. An overview of the seminal works of Kramer and Benner set the stage for this role transition and socialization process. Persistent themes from the literature are then shared. These themes reveal that the transition phase is viewed as a rite of passage, a time of powerlessness and a stressful period.

The New Nurse and Transition into Practice during the First Year of Employment

Nearly 40 years ago, Kramer (1974) investigated the experience of reality shock, the difficult process of transitioning from student nurse to competent nurse at the bedside. Reality shock represents a powerful cognitive dissonance that the new baccalaureate GN feels during the

first twelve to eighteen months of practice. This process has been highlighted in Kramer's (1974) seminal work, "*Reality shock: Why nurses leave nursing.*" Defined as "the reactions of new workers when they find themselves in a work situation for which they have spent several years preparing and for which they thought they were going to be prepared, and then suddenly find they are not," reality shock is the collision between the newly prepared baccalaureate GN and the expectations of the bureaucratic structure of the academic medical center environment (Kramer, 1974 p.7). Kramer (1969) found in 1968 that during the first ten to thirteen weeks of the hospital transition, "...the neophyte nurse changes and expresses a feeling of betrayal, blaming their educational facility for their inability to cope and 'fit' into the academic medical center environment" (Kramer, 1969, p. 200; Kramer, 1974, p.6).

Kramer (1974) explained that reality shock leads to high turnover, absenteeism, increased orientation time, and decreased commitment to the organization. Further, the transition to competent nurse at the bedside is even more challenging under less than ideal conditions (Kramer & Schmalenberg, 2002). Kramer's (1969) early findings stem from extensive studies of role conflict, and her findings indicate a profound clash between the professional values held by the graduate on leaving nursing school and the organizational values of the work setting. Kramer's later works describe further conflicts with low job satisfaction, turnover, and organizational climate (Kramer & Schmalenberg, 2002, 2003). An organization that does not support the real work of nursing leads to high turnover among employed nurses. Moreover, the inverse is true—that a supportive organizational climate leads to increased job satisfaction and less turnover among nurses (Kramer & Schmalenberg, 2003, 2002).

Kramer's early work (1974) described three major problems, which relate to new GNs' transition. The first is the change from a student role to a more informal learner role in the hospital setting. Second, the new graduate does not receive concrete feedback on performance and ultimately, the new graduate is unable to incorporate the cultural norms of the organization. In other words, the incorporation of the RN role is complex, and without the proper support, the GN develops reality shock.

The identity of a nurse is formed during this critical period, the first year to eighteen months post graduation. For example, a major challenge faced by the GN is prioritization (Kramer, 1974). It is one thing to prioritize the care of one or two patients as a student nurse under the direction of a faculty member and it is quite another to prioritize the care of four to five ill patients alone. The GN must learn to balance these priorities, and in order to do this must passively accept or conform to the accepted but questionable norms of the hospital unit (Kramer, 1974). These pressures—should I do what I was taught in school; should I look up the answer to my question in the literature or should I do what the other nurses on the unit do—are inordinate. Learning to balance these pressures is the work of reality shock (Gerrish, 2000).

Kramer (1974) identified four phases that all new graduates must attend to as they transition into competent nurse at the bedside:

1. **The Honeymoon Phase:** The first phase post graduation, where the GN is idealistic and enthusiastic about being a nurse.
2. **The Shock Phase:** Nursing is not what is expected. Conflict between what was taught and what is reality occurs. Expectations are not met and the graduate may feel anger, disappointment, and fatigue.

3. The Recovery Phase: The GN gains a new point of view. A renewed enthusiasm for nursing and increased satisfaction with nursing occurs.
4. The Resolution Phase: The fourth and final phase of reality shock is the resolution phase. Adaptation to the current job or worse burn-out may occur.

Kramer (1974) notes that the best outcome of reality shock is bicultural adaptation, the resolution phase. The new graduate integrates the two conflicting value systems of school and work into a successful framework for practice. Kramer's (1974) findings indicate that unless new graduates are assisted to resolve the conflicts they encounter, not only will job satisfaction be difficult for them to achieve, but they will adopt less than ideal work values. And, the outcome is voluntary or involuntary termination from the organization (Kramer, 1974). Reality shock continues to be a problem in the health care setting (Oermann & Moffitt-Wolf, 1997; Casey et al., 2004).

Influence of Patricia Benner's Research on Transition into Practice

The definition of workplace competency and the influence of critical thinking in nursing has long been debated (English, 1993; Astrom, Furker, & Norberg, 1995; Ferrario, 2003). For some, it is a series of validation tools and checklists measuring various skill sets in an objective manner (Orsini, 2005; Owens et al., 2001; Puntill, 2005); for others, it is more than a psychomotor skill. Workplace competency is a holistic phenomenon that involves judgment, intuition, and critical thinking using a multimodal approach (Benner, 1984; Horn, 2002; Redfern, Norman, Colman, Watson, & Murrells, 2002; Loisseau, Kitchen, & Edgar, 2003; Casey et al. 2004; Rosenfeld, Iervolino, & Bowar-Ferres, 2004; Halfer & Graf, 2006). And, still others do not know the best way to be informed about the nurses' workplace competency (Pew Health Commission Report, 1995; The Joint Commission, 2003; Smith & Crawford, 2003; PwC HRI, 2007).

Benner (1984) provided a framework for competency development from novice to expert nurse. In her influential work, Benner (1984) reports on her qualitative phenomenological study to understand differences in clinical performance of beginning and expert nurses. The study uncovered five levels of bedside clinical nursing skill. The first level is the *Novice* who has no experience in the practice of nursing. The *Novice* is unable to apply what has been taught in the classroom to the clinical situation. The next level, the *Advanced Beginner* learns to identify guidelines of nursing actions and elements of nursing practice. However, as Benner indicates, the *Advanced Beginner* regards all patient concerns of equal importance and is often unable to differentiate the priority in actual clinical situations. The *Advanced Beginner* is learning what is most important and how to prioritize patient care. . The *Competent* nurse is the third level and Benner notes that it may take two to three years to feel skill mastery. The *Competent Nurse* will express a feeling of mastery of skills and the ability to cope and manage difficult situations in a clinical setting. The *Proficient Nurse*, the fourth level of skill has the ability to see the big picture and makes significant decisions based on what is best for the patient. The last level is the *Expert Nurse*. This nurse operates on an intuitive level. This nurse has the ability to quickly analyze a situation and hone into a safe, effective solution. Benner (1984) emphasized that the expert is building on previous experience to make logical decisions. In a 1982 article, Benner notes the expert, "...encounters many actual practical situations that adds nuances or shades of differences" (p.407).

Benner, in comparing nursing competencies in relation to the Dreyfus Model of Skill Acquisition, emphasizes that an expert nurse's performance is more holistic and not fractured as in other levels of the nursing practice. Benner (1982; 1984) saw nurses building on previous concrete experiences to make logical and safe decisions in active practice. From her research, the

resultant narratives presented a powerful vision of nursing from the beginner and expert point of view.

Transition as a Rite of Passage

Transition into the professional role of registered nurse has been described as a rite of passage that influences successful role assimilation (Tradewell, 1996; Reising, 2002). Supporting this idea is a quantitative study by Newhouse, Hoffman, Sulflita, and Hairston (2007). These researchers investigated whether an internship can improve new nurse socialization into an acute care setting. The internship, known as Social and Professional Reality Integration Program (SPRING) served as the independent variable. Measures of successful role integration were operationally defined as retention rates, anticipated turnover, and sense of belonging and organizational commitment. A quasi-experimental, posttest only, control group design study was used.

The sample consisted baccalaureate or associate degree prepared GNs who participated in the SPRING program, and a control group of GNs from one unit who did not participate. The Organizational Commitment Questionnaire, Modified Hagerty-Patusky Sense of Belonging Instrument, and Anticipated Turnover Scale were the instruments used. Reliability of the instrumentation was not reported. There was no significant difference in organizational commitment between times. There was a difference between baseline and six-month measures ($p = .009$). There were significant differences in six-month SPRING respondents and baseline ($p = .031$) and 12-month SPRING respondents ($p = .040$), with six-month nurses having a lower sense of belonging overall.

This would seem consistent with the Reality Shock Model by Kramer, which suggests that there is a decline in sense of belonging and satisfaction at month six. Anticipated Turnover

was higher for control nurses than for internship GNs. There were significant differences between 12-month retention between the SPRING group and the comparison group (chi square = 6.032, $p = .014$). Although the retention rate for SPRING graduates was descriptively higher for both 18 (72% vs. 64%) and 24 months (59% vs. 47%), there was not a statistically significant change in the number of participants.

In an expert opinion piece, Tradewell (1996, p.183) defined and described the transition from GN to staff nurse as the "Rites of Passage." There are three phases: separation, transition, and integration. During the transition phase, the GN transforms from his or her formal status as student, but does not really progress into an RN role. Folkways pursued by the GN to fit in were adopting the dress of the unit, completing the formalized orientation, and surviving shift work. The process of socialization in the acute care facility was explicated. Tradewell (1996) suggested that the GN has transitioned into an RN when the GN is included into the gossip and storytelling of the unit; she notes, "... socialization is the passing of a role from one person to another" (p.187-188).

Reising (2002) conducted a grounded theory study to explore the early socialization of new critical care nurses. Interviews and journals of participants (N = 10) during the first four to five months of the socialization experiences were collected. Preceptors were interviewed to triangulate data following conclusion of the data collection with the new nurses. The researcher coined the term "navigating the challenge" when describing the transition from depending on preceptors and becoming independent. Navigating the challenge was the core variable found in this grounded theory study of novice critical care nurses. A five step approach is used by the novice critical care nurses to "navigate the challenge." The steps are the prodrome, welcome to the unit, disengagement, on my own and reconciliation. As new nurses gained experience over

the five months of their orientation expectations of their performance changed. Each day the novice nurse had to determine the expectations being held of them by their preceptor, their management team and the physicians and develop a strategy to meet the expectations. Once the new nurses assimilated the cues they were successful in navigating the challenge.

Delaney (2003) conducted a Husserlian phenomenological study to investigate GNs transition during the orientation process at an acute care facility. Ten GNs agreed to participate over the 12-week orientation period. Transition as a journey or a passage was a major theme identified by the researcher. Delaney's work supported the findings of Godinez, Schweiger, Gruver and Ryan (1999) who found that transition among GNs is a passage. This research also corroborated the findings of a quantitative study by Oermann and Moffitt-Wolf (1997) who found that there is a strong relationship between stress and support and successful transition. Interestingly this study observed the importance of reflecting on practice to promote transition.

In a Canadian, qualitative research study conducted by Ellerton and Gregor (2003) the novice and advanced beginner saw patient care as a predictable, linear, skill-set driven activity. Ten graduate nurses participated in interview sessions and described their expectations, their degree of preparedness and their performance during their first year of practice. The graduate nurses found that the relationship with the preceptor helped in their successful assimilation to the unit.

Transition as Conflict, Loss, and Powerlessness

Boychuk-Duchscher (2001) investigated new nurse socialization in a naturalistic qualitative study, which revealed a profound disconnect among GNs and their employer's expectations, thus supporting the notion of a difficult transition for GNs. The dilemma of giving quality care was in direct conflict with the perceived employee expectations of efficient care.

Other dilemmas were the high expectations of colleagues. New graduates felt caught between practicing the standards that had learned in their undergraduate education and incorporating them into the real world. The most interesting finding was that the GNs felt little control over their practice and their opportunities to affect change in the work environment. The findings of this article led Boychuk-Duchscher and Cowin (2004) to portray the marginalization of GNs in their first year of employment and to suggest that the GNs experience difficulties with socialization and integration because of inadequate preparation from undergraduate education and an oppressive work environment, which does not permit them to develop their full professional role.

Twenty-seven graduate nurses participated in Godínez's et al. (1999) grounded theory study on the transition of GNs and staff during the first three weeks of orientation. Thirteen participants graduated from a baccalaureate program and 14 graduated from a diploma program. The setting was a 250-bed level-one trauma center. A log was maintained by the GNs to facilitate daily communication with the manager and educator. Five themes emerged after content analysis by the team of researchers. These themes were labeled: real nurse work, guidance, transitional processes, institutional context, and interpersonal dynamics. The themes revealed the need for supervision between the manager-educator and the preceptor. It spoke of the necessary and important relationship the GN has with the preceptor. The researchers suggested that without the support of the preceptor and the influence of the nursing leadership, adjustment to the unit would be stressful and difficult. In this study, the conflict between the roles of student nurse to practicing GN was exposed.

In a descriptive, comparative repeated measures designed study, Casey et al. (2004) studied the stresses experienced by cohorts of graduate nurses working in six acute care hospitals in Denver during the first 12 months of employment. There were 240 participants in the survey,

which was distributed at the start, at month six, and at month twelve. Among the surveys administered, open-ended questions on comfort, confidence, and relationships were included. The narratives were analyzed by the researchers, and themes related to powerlessness and frustration with the inability to influence change in the work environment surfaced.

Internationally, Maben, Latter, and Clark (2006) and Mooney (2007) provide support for the discrepancy in socialization among newly qualified nurses in the United Kingdom (UK) and in Ireland. Both speak of the powerlessness of the newly qualified nurse and the lack of support from the hospital to effectively integrate into the hospital environment. Mooney (2007) reported on twelve newly qualified Irish nurses who shared their perceptions of becoming newly qualified nurses. Using a grounded theory approach, the following themes “old habits die hard” and powerlessness emerged. These findings are also consistent with findings of studies by Delaney (2003), Boychuk-Duchsher (2001) and Boychuk-Duchsher and Cowin (2004) who found that the GN felt unable to change accepted practice, experienced ambivalence, and felt marginalized.

Transition as Stress

An encouraging, supportive environment is imperative in easing the challenges of transition among GNs. In a qualitative study of 16 GNs, Thomka (2001) examined GN interactions with professional nursing staff during the first year of professional practice. The relationship and import of the mentor relationship is described. A questionnaire was given to sixteen RNs of which five were BSN GNs. Thematic analysis showed that GNs sought a nurturing mentor who desired to work side by side with the GN, “[h]aving one mentor for two to six weeks would help” (Thomka, 2001, p.16-17). The theme of being stressed and overwhelmed by the unit was evident. Most were not greeted warmly on their units, which led to thoughts of leaving nursing or that particular institution.

In a descriptive study, Oermann and Moffitt-Wolf (1997) reported that GNs experienced a moderate amount of stress during the orientation period. Only 35 GNs participated in this study. Significant correlations were found between support and clinical performance ($r = .57; p < .001$). Stresses in descending order were lack of experience, interactions with physicians, lack of organizational skills, and new situations. There was no correlation between social support and stress. A positive correlation was found between social support and development of confidence. One other recently conducted quantitative study supported this notion. Casey et al (2004), in their study of GNs in six acute care facilities in Denver, CO found that the GN felt that it took 12 months to feel comfortable in the acute care setting.

In summary, a literature review of the socialization of the GN into practice reveals the fundamental problem that it is difficult to transition, and that there is a consistent link between socialization and retention and job satisfaction. As the reviewed studies indicated, socialization of new graduate nurses is convoluted and there are strong links among their sense of belonging, social support, and the assumption of the professional nurse role. The studies elucidate the complexities of transition from the role of GN to professional at the bedside. Clearly, degree of job satisfaction and positive relationships, as well as autonomy is influenced by the quality of the transition into the acute care environment. Nevertheless, there is no agreement on the best approach to ease the difficulties of the transition process for GNs.

Job Satisfaction among Graduate Nurses

Job satisfaction is a complex phenomenon and has many definitions. Mueller and McCloskey (1990, p.130) define job satisfaction as “the degree of affective orientation toward employment.” The concept of job satisfaction has been widely studied among nurses in general. However, there is little research on job satisfaction among a specific group of nurses, the GN.

Although very little is currently known about what satisfies the recent RN graduate, in previous studies, investigators have explored the concepts of job satisfaction and intent to stay. Turnover among GNs has been closely linked to job satisfaction. As a result, job satisfaction has been frequently reported as a significant predictor of turnover (Larrabee, Janney, Ostrow, Withrow, Hobbs, & Burant, 2003). In a study by Halfer and Graf (2006), job satisfaction and intent to stay improved significantly among 80 GNs (N=84) in an academic medical center hospital by month eighteen of employment. These results were consistent with Kramer's (1969) original work on reality shock among baccalaureate prepared GNs where the variables consistent with job satisfaction worsened at month six and month 12 before they improved by month 18. Early studies of GNs showed that increased job satisfaction and intent to stay were associated with less job stress, strong relationships with colleagues, and satisfactory job schedules (Hinshaw, Smeltzer, & Atwood, 1987; Gardner, 1992; Winter-Collins & McDaniel, 2000). Roberts, Jones, and Lynn (2004) examined job satisfaction of recent RN graduates and found that those intending to remain past 12 months were more satisfied with aspects such as schedule, co-workers, interaction, professional opportunities, praise and recognition, control, and responsibility. Greene (2005) claimed that sources of job dissatisfaction for nurses under the age of 32 included poor work/personal life balances, an organization not focused on patient needs, outdated medical equipment, and insufficient development opportunities, which led to increased turnover. New nurses experience a cognitive dissonance between the realities of the practice environment and the inability to uphold the values learned in the classroom environment. This disconnect arises from the differences between the organizational culture of the school and hospital, which lead to decreased job satisfaction and resignations. Kramer (1969) and Kramer and Schmalenberg (2003, 2002) posit that nurses leave the profession based on multifactorial reasons

like job satisfaction, institutional climate, degree of autonomy, support from colleagues and rewards; and this appears to be based on needs theory. The link between job satisfaction and retention remains complex (McCloskey, 1974).

In a more recent study, using the McCloskey-Mueller Satisfaction Scale (MMSS) Roberts, Jones, and Lynn (2004) surveyed 123 baccalaureate prepared GNs who worked in the acute care setting. Few worked in the outpatient setting. The MMSS had a reliability estimate of .45-.85. The researchers examined the relationship between intent to stay and job satisfaction. The most compelling finding was the relationship between satisfaction and intent to stay. Those who indicated they were likely or very likely to stay in their current position had the highest level of job satisfaction in seven out of the eight areas of the MMSS. Those who were likely to leave had wider disagreement between what was important to them and their level of satisfaction, which was statistically significant.

In a descriptive, comparative study of 270 GNs, Casey et al. (2004) queried GNs on job satisfaction. The instrument used was not detailed. Most were not satisfied with salary (34%) and 40% perceived a lack of opportunity for career development. However, there was satisfaction (73%) with feedback from managers and educators. And, those who worked at academic medical centers had higher levels of satisfaction than those at rural locations. Halfer and Graf (2006) conducted a study on perceptions of the work environment and job satisfaction for GNs in the first 18 months of employment at a 265-bed tertiary hospital. The Halfer-Graf Job/Work Environment Nursing Satisfaction Survey was given at three, six, 12, and 18 months of employment. Reliability measures revealed a split/half reliability of .89 and a test-retest reliability of .92 at three months and .88 at 18 months, indicating adequate reliability. The return rate for this mailed survey was 46%. Eighty-four were in the sample. By month 12, the

retention for this cohort was 80%. This study revealed waning satisfaction suggestive of a relationship with Kramer's reality shock model. GN satisfaction declines at month three and month six, which corresponds to the shock phase of the reality shock model.

Altier and Krsek (2006) reported the effects of participating in a one-year nurse residency program (NRP) on degree of job satisfaction and retention of graduate nurses. Using a prospective, longitudinal design, 111 baccalaureate prepared GNs from six academic medical centers completed a job satisfaction questionnaire on two occasions; at hire and at completion of the one-year NRP. The MMSS was used to assess job satisfaction in this population. Contrary to previously described studies, total satisfaction scores remained stable from onset to completion of the program except in two areas, satisfaction with praise and satisfaction with professional opportunities. Interestingly, the average satisfaction with co-workers across ethnic groups was statistically significant ($p=.002$). Black, Hispanic and Asian American nurse residents reported less satisfaction with colleagues than White colleagues.

Winter-Collins and McDaniel (2000) examined the relationship between sense of belonging and job satisfaction in the GN. A mail survey was sent to 250 randomly selected GNs who took the RN licensure exam between January 1996 and January 1997. Only 107 GNs returned the survey. The anonymous survey asked questions pertaining to demographics, work place environment, interpersonal relationships, and job satisfaction. Job satisfaction was measured by the MMSS. Sixty-nine percent of the respondents worked in an acute care setting and 38% were BSN educated. When units were compared, obstetrics had the longest orientation and one of the highest scores for total job satisfaction, 3.3 on a Likert-like scale of one to five. Home health had the strongest total satisfaction, 4.1; however, they had the lowest number of

RNs. There was a positive relationship noted between sense of belonging and total job satisfaction among GNs.

In a study performed by Gardner (1992) in partnership with McCloskey, 166 new graduates were asked to participate in a survey on perceived job conflict at six months and at 12 months of employment. This study had high subject mortality. By month 12 only 34 subjects remained in the study; most left the study because of resignations. The MMSS was used to measure job satisfaction. Internal consistency was reported at .89 for six months and .90 for 12 months indicating adequate internal consistency. The research indicates that job conflict has an inverse relationship with job satisfaction. It was found that those who had more conflict had less job satisfaction ($r = -.53$).

In a recent article, Anderson, Linden, Allen, and Gibbs (2009) measured the job satisfaction and engagement perceptions of new nurses after completing an interactive nurse residency program using a mixed qualitative and quantitative methodology. Beginning with 120 new nurses and ending with 90, the Halfer-Graf Job/Work Environment Nursing Satisfaction survey was administered at the completion of the interactive residency program. The Halfer-Graf Job/Work Environment Nursing Satisfaction Survey was developed by Halfer and Graf to determine RNs' perceptions of their work environment and job satisfaction, including sources of professional fulfillment and perception of the work environment over time. Dissatisfiers identified were lack of team work, scheduling, and physician disrespect. Satisfiers were patient care and outcomes and working on a "good" team. Findings support previous research on job satisfaction and GNs. Statistical analysis was not shared.

In summary, most of the GN job satisfaction research used descriptive, correlational, and phenomenological designs. There were not any reported studies using a randomized control trial

design. All used self-administered survey or open-ended questions and in most cases, the MMSS measured common variables like salary, satisfaction with schedule, autonomy, professional opportunities, and praise and recognition associated with job satisfaction. Agreement exists in the literature that GNs reporting low satisfaction also experienced difficulties or concerns with colleagues. There is some research that questions a linear relationship between satisfaction with salary and intent to leave. One study reported a flat job satisfaction from point of hire to month 12 of employment (Altier & Kresk, 2006).

Autonomy and the Graduate Nurse

Despite scant reported research on the relationship of autonomy to turnover among GNs, there are several studies documenting a consistently strong relationship between autonomy and satisfaction among human service employees and hospital-based nurses. Using meta-analysis, Spector (1986) found that human service employees who perceived a high degree of control over a situation were found to be motivated, committed, and involved. Consistent with this finding, Hinshaw et al., (1987) found that among hospital nurses, autonomy had a positive impact on job satisfaction. Further, in a study performed by Price (2002), results showed that when experienced nurses enjoyed autonomy and social integration, they were more satisfied, and thus, more likely to stay.

Kramer's (1969) hallmark study on baccalaureate prepared nurses informed the reader as to why GNs leave nursing. In that study, Kramer surmised a strong multifactorial relationship among satisfaction, autonomy, and turnover. Significant is autonomy, a variable that strongly influences the decision to stay at academic medical centers. Later, Casey et al. (2004) reported that graduate nurses who participated in a nurse residency program and voiced dissatisfaction

with the work environment and frustration with their perceived lack of autonomy were more likely to leave the organization. Etheridge (2007) conducted a qualitative phenomenological descriptive study (N=6) examining the perceptions of recent nursing graduates about learning to make clinical judgments. Graduates with baccalaureate degrees in nursing were interviewed three times in nine months to determine their perceptions of how they learned to think like nurses. One theme that was uncovered was autonomy and its importance as a condition of success as a new nurse.

In an Australian study, Takase, Maude, and Manias (2005) used two methodologies, a correlational survey design and an exploratory qualitative design to test whether the relationship between nurses' work values and their perception of the environment could explain job performance and intent to leave. A total of 346 surveys were returned, accounting for a response rate of 37%. Paired t tests failed to support the person-environment fit assumption, as a statistically significant difference was found between nurses' work values mean score (mean = 4.89) and the mean score of their perceptions of their work environment (mean = 4.23, $t = 17.18$, $p < 0.001$). Nurses reported that their needs for income and recognition were not met in their current work environments.

Contrary to other studies, the study's work performance and intent to stay results suggested that job performance is not a function of a linear relationship with values and work environment; instead, it should be examined as a curvilinear relationship (Takase et al., 2005). Meanwhile, intent to leave was found to be a function of a linear relationship with values and work environment ($F = 0.07$, $p < 0.05$). One outcome was that autonomy had a positive correlation with intent to stay and salary variables did not influence intent to stay ($t = 22.51$, $p < .001$). Of note, the mean age of participants was 33.6 years.

Cowin and colleagues (2008) conducted a descriptive correlational design study with a longitudinal element to examine a causal model of Australian nurses' self-concept, job satisfaction, and intent to stay. A questionnaire was mailed over two time periods to measure nurses' self concept, intent to stay and job satisfaction. The researchers had a response rate of 26.5% (N =528). The mean age of participants was 46. In this study, self-concept is multidimensional, influenced by autonomy. Nurses' self-concept was found to have a stronger association with nurses' retention plans ($r = .45$). Aspects of pay and job tasks were not significantly related to retention plans, however, professional status ($r = .51$), and to a lesser extent, autonomy ($r = .24$) were significant factors.

In an Italian study, investigators using a descriptive study to assess the first job experiences of GNs, (N =41) found that supervised autonomy was a determining factor in selecting the initial hospital for employment. For this group, autonomy from the first day was a determining factor in making a decision to stay among GNs ($SD = 1.65$; $p = 0.004$). The average age of the participants was 24 (Palese, Tosatto, Borghi, & Maura, 2007).

In summary, autonomy is linked closely with job satisfaction among nurses and may moderate the relationship with intent to stay or depart. Most of the studies were descriptive or comparative in nature and focused on nurses from the general population and not a specific population of nurses like GNs. Similar to the U.S. studies, most of the international studies were descriptive; and the studied populations consisted mainly of experienced nurses. A curvilinear relation was found suggesting a variable, more complex, and more difficult to identify association than a linear relationship.

The relationship between departure and critical thinking has been insufficiently studied. The literature is devoid of studies linking critical thinking to its relationship to retention among GNs. However there are several studies linking competency and critical thinking skills to successful integration in the work environment from the point of view of nurse administrators, educators and GNs. First, assessment of and measurement of critical thinking and competency among nurses in the workplace is discussed. Next, nurse administrators and nurse educators' perceptions of GN critical thinking and competency is shared. Finally, GNs own perceptions of their critical thinking and competency are revealed.

Benner (1984) and Del Bueno (2001, 2005) concur that measuring critical thinking is a complex process. Critical thinking is likened to clinical judgment and workplace competence in its ability to use clinical judgment to perform tasks with desirable outcomes; in addition it is a dynamic interplay of the affective, cognitive, and psychomotor domains. The Pew Report (1995) calls for continuing workplace competence assessments, but did not provide guidelines in the area or propose a competency assessment tool. Determining workplace competence, which is a regulatory requirement, is difficult at best (The Joint Commission, 2003); and, recommendations from this agency call for evaluating competence, but do not make specific suggestions on continuing competency assessment.

Assessment of Competency in the Workplace.

Competency may be an indirect measure of GN critical thinking in the workplace. Competency in the workplace has been determined by a variety of methods including self-assessment, checklists, preceptor and manager narratives, and teacher-made and standardized

tests. There is controversy on what is the best type of instrument to measure competency in the workplace for the GN.

Horn (2002) recommended regular validation of psychomotor skills and further proposed assessment of critical thinking skills through testing either through a standard test or simulation testing. The New York University nurse residency program (NYU NRP) used a checklist strategy to determine competency of their GN hires. Preceptors measured success of competency over a six-week period (Rosenfield et al. 2004). The NYU NRP used six tools to measure competency. Narrative notes and a rating scale of performance were maintained for the entire internship. Again, a preceptor evaluated performance and there was no discussion on the expertise of the preceptor and no discussion of the reliability of these instruments. Authors recommended use of all six instruments to determine GN workplace competency (Rosenfield et al, 2004).

Owens et al. (2001) used a competency-based checklist to meet regulatory requirements. GNs performed self-evaluations while their preceptors simultaneously evaluated the GNs. Findings revealed the new graduate nurses scored themselves much higher in their performance on complex situations. The preceptors scored the GNs consistently lower in all areas requiring decision-making.

Lindsey and Kleiner (2005) measured competency by self-report in their study of the effects of a nurse residency program on competency and retention. The definition of competency was merged with feelings of autonomy and confidence. The GN who participated in their program was able to perform 36 general skills with a high degree of self-reported confidence and competence. Seven tools were used to measure competency of 20 GNs who participated in the program. These included three teacher- made tools and four standardized tools that measured

judgment and critical thinking. In this study, a control and experimental group were compared on all tests. Those that participated in the program met critical thinking and interpersonal communications standards.

Del Bueno (2005, 2001) developed the Performance Based Development System (PBDS) in 1987 and has used this tool used to measure critical thinking, technical and interpersonal skills competence among all nurses, including GNs. Videotaped vignettes of complex but commonly occurring medial surgical scenarios are shared. Del Bueno (2005) likens these scenarios to actual failure to rescue situations. Hospitals develop their own peculiar answer key to the scenarios and compare the new nurse's response to the hospital's standard response set. Del Bueno explained that these scenarios are without cues and therefore best reflect real life situations and are inherently more valid (Del Bueno, 2005, p. 281). In Del Bueno's evaluation of her PBDS program, only 35% of entry levels GNs meet clinical judgment expectations at initial assessment and after reassessment with the PBDS, 70% of the GNs have met the standard established by the individual institution (Del Bueno, 2005).

Despite being difficult to quantify, critical thinking has been merged with feelings of autonomy and confidence (Lindsey & Kleiner, 2005). In fact, a descriptive correlational study by Zurmehly (2008) on factors influencing job satisfaction in nursing was explored among a convenience sample of 140 RNs. The nurses filled out the Watson Glaser Critical Thinking Appraisal (WGCTA) and the Minnesota Satisfaction Questionnaire (MSQ). Results indicated positive correlations between total job satisfaction and autonomy and critical thinking. A one-way analysis of variance was used to analyze mean differences between groups based on total MSQ and WGCTA scores. Analysis demonstrated a significant positive correlation ($r = .442, p$

< .05) between WGCTA total score and the MSQ. There was a statistically significant positive correlation between job satisfaction and perceived autonomy ($r = .538, p < .05$).

Nursing Administrators' Perceptions of GN Critical Thinking Skills

Health care leadership perceived the GN was limited in her/his ability to function proficiently. Nearly ten years ago, the Health Care Advisory Board identified that poor communication with health care providers and inadequate treatment interventions were a constraint in hiring GNs (Health Care Advisory Board, 2000). In agreement with the Health Care Advisory Board, a survey of 142 hospitals systems and hospitals over a 10-year period by Del Bueno (2005) found that at time of hire, only 35% of GNs could meet expectations in the areas of interpersonal relationships, technical skills, and critical thinking.

Goode, Pinkerton, McCausland, Southard, Graham, and Kresk (2001) surveyed chief nursing officers (CNOs) from 44 hospitals. This influential descriptive research study showed that the CNOs perceived BSN nurses to be less task-oriented and to exhibit more professional behaviors than did the associate's degree or diploma graduates. The CNOs in this study preferred to employ BSN nurses. Nonetheless, in their descriptive study, Goode and colleagues (2001) found a plethora of problems in critical thinking among baccalaureate GNs, including delegation, prioritization, and performance of high volume, low risk skills and low use, high-risk skills. The study served as pillar of support for the institution of nurse residency programs for BSN graduates. Further, employers often indicate that GNs are entering the workforce with limited critical thinking skills (Health Care Advisory Board, 2000; Goode & Williams, 2004; National Council of State Boards of Nursing [NCSBON], 2006; Nursing Executive Center, 2007).

Lowry, Timms, and Underwood (2000) surveyed nurses who precepted, managed or educated BSN GNs employed in a 500-bed hospital in South Carolina. The researcher-developed

survey exhibited a Cronbach Alpha of .99 and was administered to 68 respondents. Areas in which baccalaureate prepared GNs were least prepared were basic clinical skills and procedures, organizational and time management skills, and ability to manage groups of patients. Areas in which new BSN graduate were best prepared were professionalism, broad knowledge base, and patient assessment.

A longitudinal study of baccalaureate prepared nursing students conducted by Ryan and Hodson (1992) found that employers rated the GN at or above the expected level of performance. The survey studied nursing students from 1983 to 1987. An author-developed survey was mailed to 140 nurse supervisors of BSN prepared GNs. Survey content was focused on leadership, communication, skills, and professionalism. Validity and reliability were established by content experts and interrater reliability was established by GNs.

Educators and Critical Thinking Skills of BSN Prepared GNs

In 1986, Stull and Katz designed an exploratory descriptive study based on the Benner model to determine if baccalaureate prepared GNs met performance expectations in the acute care setting. The split between nursing service and nursing education, with regard to skill expectations for new baccalaureate graduates, was challenged in this study of 123 nurse administrators and educators. Two questionnaires measured ideal expectations for and real perceptions of entry level competencies of new BSN graduates. The hypothesis that there is a vast difference between educators and administrators on GN skill sets was not supported. Rather, the results of paired t tests indicated that the major problem was the vast difference between the ideal expectations and real functioning for both service and education. It appears that neither service nor education is satisfied with the performance of the new BSN graduate.

Another longitudinal study conducted by Maynard (1996) suggested that critical thinking ability did not significantly change during the educational period; but in its examination of the relationship of critical thinking to professional competence in BSN GNs, findings did support that significant changes occurred after a period of professional nursing practice ($p < .005$). The experiential component of practice emerged as the key influencing factor on the development of competence and critical thinking. A cross-sectional sample of GNs from one nursing program were selected. Two cohorts of responding GNs were formed; they participated in measures of critical thinking as a sophomore and a senior. A sub-sample was given the third critical thinking test. This resulted in a sample size of 121. The instruments used for this study were the Watson Glaser Critical Thinking Appraisal (WGCTA) ($r=.75$) and the Schwerin 6-Dimensions of Nursing Performance Scale (Cronbach Alpha=.978).

Graduate Nurses' Perceptions of Their Critical Thinking Skills

Learning to think critically is a large part of becoming a nurse and the evidence suggests that GN's perceptions of their critical thinking skills are impacted by their perception of their competency (Etheridge, 2007). In the following studies, GNs perceptions of their critical thinking skills was highly influenced by their perceptions of psychomotor skills performance, their ability to perform thorough evaluations of the patient situation and finally by communicating with others about their patients in a supportive milieu.

A hallmark study evaluating the impact of a nurse residency curriculum on perception of competency demonstrates that residents perceive their growth in terms of their ability to organize and prioritize, communicate, and provide clinical leadership with the influence of a structured residency program (Williams, Goode, Krsek, Bednash, & Lynn, 2007). Previous descriptive work has shown that managing the care of multiple patients, making decisions about clinical

priorities, and communicating with others in the care setting were areas in which new baccalaureate graduates express difficulty (Brassler, 1993; Oermann & Moffitt-Wolf, 1997; Lowry, Timms, & Underwood, 2000; Casey et al., 2004). The residency was designed to strengthen the residents' abilities in these areas; thus, these findings provide some confirmation that residents felt they were growing in their competency in providing quality patient care. Data from the residents (N=679) from six different states was obtained. One instrument, the Casey-Fink Graduate Nurse Experience Survey, a quantitative and qualitative instrument with a Cronbach Alpha of .89 showed increases in perceptions of ability to organize and prioritize communication and leadership over a 12-month period (UHC, 2006).

Competent performance was more likely when the GN received support provided by nurse friends and/or had a preceptor with strong clinical and communications skills (Brasler, 1993). For instance, the purpose of a study by Oermann and Moffitt-Wolf (1997) was to assess the stresses, challenges, and threats experienced by new graduates during their initial orientation and to examine the relationship of social support to these stresses, challenges, and threats. Thirty-five new graduates from three Midwestern metropolitan hospitals participated in the research. Graduates were found to have a moderate degree of stress. The predominate stresses in descending order were lack of experience as a nurse, interactions with physicians, lack of organizational skills, and new situations and procedures. Half of the new graduates (n = 18) identified their challenges as new clinical experiences, such as techniques and procedures, learning to set priorities, adapting to the graduate nurse role, and interacting with physicians. New graduates did not feel their initial clinical experience was threatening. The social support scores indicated that most of the new graduates studied had an adequate support system. In this

study, graduates identified consistent, supportive preceptors as facilitating their learning and developing their confidence.

Cantrell and Browne (2006) reported on a survey performed on GNs who participated in an externship program. The statistical data was not shared. The researchers found that there was a significant amount of self-reported stress among the GNs as they reflected on their practice. Mundane things like finding the storage closet to obtain supplies for patient care caused stress and anxiety. Lack of knowledge of the environment meant certain incompetence to the GN. Horsburgh (1988) conducted an ethnography of 10 GNs, and found that the GNs were overwhelmed when asked to conduct themselves as nurses in situations in which they felt they were not competent. Some of these situations were demonstrating IV skills, changing patient condition, or even communicating with the health care team. The new GNs rated themselves as highly incompetent in this area.

Casey et al. (2004) studied the stresses experienced by cohorts of GNs working in six acute care hospitals in Denver during the first 12 months of employment. A key finding was that graduate nurses felt that it took at least 12 months to feel comfortable, competent, and confident practicing in the acute care setting. The most difficult time was between six and 12 months when competence was influenced by support from preceptors and others providing orientation and training. GNs identified their lack of competence in organization, time management, and performance of skills (Oermann & Moffitt-Wolf, 1997). Casey et al. (2004) reported that after participation in a year-long nurse residency program GN self-report on the Casey-Fink Graduate Nurse Experience Scale included statistically significant improvements in self-reports of competency, including the ability to safely care for complex patients, communicate with physicians, and to provide leadership.

In summary, only 35% of GNs meet entry employment requirements in the acute care setting (Del Bueno, 2005). Contradictory evidence exists on whether the GN is able to demonstrate effective problem solving skills, prioritize effectively, and manage time efficiently in the context of the acute care setting. Some studies demonstrate the GN is not prepared to perform problem solving, delegation, or critical thinking skills, whereas other studies show improvement in those skills over time. Jones and Brown (1991) suggest that critical thinking is a requirement for true autonomy. In fact, the GN feels ill-prepared to perform competently at hire. Regardless, autonomy, and critical thinking skills play an important role in nurses' total job satisfaction and appear to influence departure. Critical thinking facilitates the advancement of competency and autonomy which affects job satisfaction and thus departure.

Demographic Influences

Among the predictors of turnover that have been examined, individual nurse characteristics of age, race, and unit have been found to affect retention. Blegen (1993) conducted a meta-analysis of 48 job satisfaction studies (N = 15,048). There was stable lower order associations ($r = .20$) between job satisfaction, age, race, and unit. This subsection will review relevant literature related to age, race, and unit of employment, and its impact on departure job satisfaction, autonomy, and critical thinking. The existing evidence may support the idea that age, race or ethnicity, and unit of employment are important considerations in determining strategies for retention of GNs. Given the current pattern of high turnover rates among GNs it is important to pay heed and work to retain nurses.

Age

Age has been found to have predictive value in several studies that have been conducted to investigate the age-job satisfaction relationship in the health care setting. Over twenty years

ago, Blegen and Mueller, using PCCM (1987) in their longitudinal work of job satisfaction in nurses, found that age and working the day shift were both positively related to job satisfaction. In another example, the results of the study by Kaemar and Ferris (1989) on RNs (N = 81) in one hospital supported both a U-shaped and a linear relationship between age and job satisfaction. The lowest extrinsic job satisfaction occurs during the 30's and 40's, generating a U-shaped relationship; and the highest intrinsic job satisfaction occurs in the 50's, generating a linear relationship. A unique study performed by McNeese-Smith and Van Servellen (2000) looked specifically at age, development, and job stage in relationship to job satisfaction, productivity, and organizational commitment. They discovered that in nurses (N = 412) across three facilities, developmental stage and age combined significantly predict job satisfaction, productivity, and organizational commitment. The study makes important contributions to the study of job satisfaction

Likewise, researchers have studied nurses where the age-job-satisfaction relationship was not supported. Adams and Bond (2000), in a descriptive study, surveyed 1,499 UK nurses with a 54% response rate on job satisfaction, and found no differences between job satisfaction scores according to nurses' age and level of education ($p < .0001$). A study of nurses in Taiwan also found no differences in job satisfaction based on age (Chu, Hsu, Price, & Lee, 2003). It is critical to note that their study sample (N=308) was very age homogenous, with 92.5% of the nurses less than thirty years of age. More recently, Best and Thurston (2004) studied predictors of job satisfaction in nurses using a framework that included organizational, work environment, and personal variables. The instrument used was the Stamps and Piedmonte Index of Work Satisfaction. Interestingly, the researchers compared satisfaction scores by age group. While they did not report data for all groups, the researchers noted that with the exception of professional

status, 35-39 year olds reported the lowest satisfaction scores. The 45-49 year old cohort had the highest satisfaction scores with the exception of autonomy. Other differences were found between age groups on interaction, professional status, and task requirements (Best & Thurston, 2004).

Lu, White, and Barriball (2004) published a literature review of job satisfaction among nurses. They included more than fifty international studies and provided a comprehensive analysis of contributing factors and outcomes of job satisfaction in nurses. Factors that had strong, moderate, or slight relationship with job satisfaction were presented. In five studies, age, years of experience, and educational level were identified as having only a slight positive relationship with job satisfaction.

Race

Research studies on the association between satisfaction, autonomy, critical thinking and departure and the variable of race are limited and conflicting in their findings. Adams and Bond (2000) found a weak association between the general variable of race among 843 UK nurses in an author-developed survey. Differences were found between scale scores according to nurses' age, level of education, or length of ward service ($p < .0001$). Thus, drawing the conclusion that race, age, and unit have far less influence than do quality of working relationships and collegiality.

In a recent publication, Smith, Crow and Hartman (2007), reported on a secondary analysis on 10,000 nurses using data from the National Science Foundation to determine if differences in attrition exist between Black and White nurses. The analysis found that Black nurses were more likely to demonstrate employment stability and be employed full time. The authors suggested that this was due to traditional factors which result in White women leaving the work force to raise families. In a contrasting secondary analysis using data from a 2000

National Sample Survey of RNs, Jones and colleagues (2005) reported on the racial composition of the workforce and the composition of the general population. The objective of this project was to examine nursing employment patterns for White and non-white nurses to serve as a basis for developing effective recruitment and retention strategies and ensuring a highly qualified and diverse nursing workforce to meet changing societal needs. The results indicate that nurses were more likely to leave if they were non-white. There were no other significant differences in employment patterns by race (Jones, Belyea, Gates, Mark, & Pink, 2005).

Type of Unit

There are two studies that hypothesized higher turnover rates based on unit of employment for nurses. In the first, Leveck and Jones (1996) tested a model of care using a cross-sectional structural equation modeling design among three types of nursing units and two measures of job satisfaction. A total of 63 inpatient nursing units among four acute care hospitals in the U.S. were used. All RNs on the units were invited to participate and there was a 59% response rate. Nurses employed on medical-surgical units perceived higher levels of job stress than nurses employed on other types of specialty units. Nurses on medical-surgical units were more likely to resign.

The second research study, a descriptive one conducted in the Midwest among five community or rural acute care hospitals, invited a total of 537 RNs and 115 LVNs to participate. In this study satisfaction and retention were higher on intensive care units and labor and delivery units. Turnover was higher on medicine units than on surgical units ($p < .007$) (Wakefield et al., 1988).

In brief, there is little research on GN departure and general demographic characteristics like age, race, and unit of employment. However, it appears that nurses' social and professional

relationships with nursing and colleagues, their own critical thinking skills, and their autonomy were more salient than general characteristics when considering reasons for departure from an organization.

New GN Transition Programs

The issues surrounding transition of the GN into practice seem insurmountable. The Joint Commission (2003) asserted in their white paper on the nursing shortage, that transition programs designed for the GN were often fragmented, have no systematic structure, no oversight, and no funding. Thus, examining characteristics and outcomes of transition programs during this new era of nursing shortage is appropriate and worthy of review.

There are two main types of new graduate transition programs found in the literature. These are nurse intern and nurse residency programs. Nurse extern programs are discussed in the professional literature as designed primarily for the participation of students during the summer preceding their last year in nursing school (Hughes et al., 1993; Tritak et al., 1997; Rush et al., 2004).

Nurse Intern Programs

Overview. Internship programs reported in this literature review were all designed to close the gap between the student role and the competent nurse at the bedside role, and as a marketing tool for recruitment and retention. Seven programs were examined and all were clinically focused (Hunter & Moore, 1990; Almada et al. 2004; Blanzola, Lindemean & King, 2004; Marcum & West, 2004; Newhouse et al., 2007; Owens et al., 2001; Woods & Craig, 2005). Candidates for the programs were primarily GNs, but a military internship program was open to RNs transitioning to the military. The authors separately reported on the effect of their program

on their GN population (Blanzola et al., 2004). Internship programs accepted GNs from all three basic nursing programs, although one was designed for BSN graduates (Blanzola et al., 2004).

Structure and process. Program length varied from eight weeks to 16 weeks. Two internship programs and an academic partnership did not specify the duration of their program (Newhouse et al., 2007; Woods & Craig, 2005). All interns rotated through a combination of didactic or classroom presentations with guided clinical experiences. Topics varied from commonly occurring medical problems to delegation issues. Determinations of topics for presentation were not explained. Five programs gradually increased clinical contact hours as interns became more acclimated to the environment. In most cases the intern was partnered with a preceptor. While never defined in these articles, it seemed implicit that the preceptor was a qualified experienced nurse who assisted, guided, taught, and encouraged the new nurse. The sixth program had the GN partner in what was called, “a married state” with a preceptor for a minimum of twenty-four hours per week. The GN had the same assignment as the preceptor with no adjustments or increases made in patient load (Almada et al., 2004). The number of GNs participating in the internships varied widely from 18 to 100 participants. Other than licensure eligibility, no other admission requirements were explained. It was not clear from the articles whether time commitments to remain on staff were prerequisites for employment.

A mixture of conceptual models influenced the structure of the curricula. Kramer’s work (1969) on reality shock influenced the earliest internship program (Hunter, Pollman & Moore, 1990). Del Bueno’s and Altano’s competency-based model and principles of adult learning were used in the military internship program (Blanzola et al., 2004). Benner’s Novice to Expert model was used as the theoretical framework for another program (Almada et al., 2004), and Newhouse et al., (2007) used a systems approach to develop her curriculum.

Outcomes. Of the seven reported programs, one used a standardized instrument to measure effectiveness (Newhouse et al., 2007), and all measured turnover rates or retention rates. Retention was not defined operationally in the articles, but it seemed retention was defined as GNs remaining to completion of the program. The range for retention was from 73% to 95%. Newhouse et al. did not share 12-month retention rates but did enjoy a 72% retention rate at 18 months. The program reported by Woods and Craig (2005) enjoyed a 92% retention rate. This program was developed in partnership with a university nursing school. An interesting phenomenon found by Woods and Craig (2005) was that retention was influenced by regular attendance. Almada et al. (2004) reported a 95% retention rate among GNs. Modeled on the Vermont Nurse Intern Project, the internship was a collaborative effort among the Board of Nurse Examiners for Vermont, and Deans and Directors from that state.

Blanzola et al. (2004), Newhouse et al. (2007), and Woods and Craig (2005) utilized control and experimental groups to assess program effectiveness. Retention was compared between groups that had the program and groups that did not have the program. Retention was variable. Almada et al. (2004) surveyed their interns retrospectively three months post-completion of their internship program. The remaining three programs reported their effects with subjective evaluation. Hunter, Pollman, and Moore (1990) used a type of formative evaluation to identify those interns at high risk for resigning. Criteria for identifying the high-risk intern were not defined. Those interns were channeled into informal discussion groups that were classified as support sessions. Conflict management was a discussion item at these meetings.

To sum up, a typical internship assigned GNs to a permanent unit after rotation through a variety of clinical units. Assignment to a preceptor for the duration of the internship occurred. There was progressive introduction of clinical contact time. Didactic content was not detailed, but

more attention was given to development of technical competence. Retention varied and preceptors were a key element for successful integration.

Nurse Residency Program

Overview. The last type of program examined was the nurse residency program (NRP). Five programs are detailed (McHugh, Duprat, & Clifford, 1996; Olson et al., 2001; Rosenfield et al. 2004; Santucci, 2004; UHC, 2006). Each program expressed different goals and outcomes. Admission criteria varied from organization to organization. Length and intensity of program was variable. Ultimately, these programs were designed to ease the transition of the new graduate to the work environment. Yet, goals of the programs were broad based. For example, although Beth Israel Hospital desired a competent nurse at the bedside, the competency was actually expressed as “demonstrate the centrality of nursing” (McHugh et al.1996).

Structure and process. Given that GNs have difficulty adjusting to the demands of their first positions and have a high turnover rate, nurse residency programs (NRP) have been touted as a method to a) improve job satisfaction and prevent turnover (The Advisory Board, 2002; American Association of Colleges of Nurses, 2002; The Joint Commission, 2003; Casey et al. 2004), b) promote competency and satisfaction (Boyer, 2002; Herdrich & Lindsay, 2006), and c) promote satisfaction, autonomy and professionalism (UHC, 2006).

There was variable program length among the five programs. Duration could be as long as two years to as brief as eight weeks (McHugh et al., 1996; Santucci, 2004). Benner’s framework of professional practice and model of skill acquisition provided the framework for four of the five programs (McHugh et al., 1996; Rosenfield et al., 2004; Santucci, 2004; UHC, 2006). The student nurse residency program used Olson’s model of seamless transition (Olson et al. 2001). Three out of the five programs partnered or consulted with a baccalaureate nursing

program. These programs were notable for their utilization of a research design to evaluate effects (Olson et al., 2001; Rosenfield et al., 2004; UHC, 2006). Enrollment varied by program. The UHC program partnered with five different academic medical centers for a total of 847 BSNs. New York University's program averaged 170 residents per year. Otherwise, enrollment information was scant.

The UHC NRP and the program from New York University were planned around a 12-month curriculum. Nurse residents met once per month for four to five hours. Meetings were structured around topics of leadership, safety, and evidence-based practice (Rosenfield et al., 2004; UHC, 2005). Networking among residents from different clinical areas was encouraged. In addition to didactics, the UHC program, also introduced resource management. The UHC NRP was developed in partnership with the American Association of Colleges of Nursing (AACN). A steering committee was formed with membership from AACN members and Deans and Chief Nursing Officers from academic medical centers. Their input provided direction for the curriculum, evaluation modalities, and the research.

Only BSN GNs were eligible for three programs (McHugh et al., 1996; Rosenfield et al., 2004; UHC, 2006). AD and BSN GNs participated in one program, which focused primarily on clinical skills and organization at the bedside (Santucci, 2004).

Outcomes. Three of the five programs used a research design to evaluate the effects of the intervention of an NRP. Olson et al. (2001) found scant change in leadership and little if any change in critical thinking as measured by the California Critical Thinking Disposition Inventory. In their qualitative analysis of residents' journals, the investigators found that the participants' perception of what it means to be a nurse change from one of a textbook definition to that of a professional who individualizes care.

Retention rates were not operationally defined in any study report pertaining to residency programs. It was assumed that retention was defined as those residents remaining after completion of the residency program. Turnover rates were 11%, which was an improvement when compared to a 20% national turnover rate (UHC, 2006). Rosenfield et al. (2004) measured turnover rates and perceptions of support and guidance among a group of 112 former residents. Immediately following the NRP, the retention rate was 76%. Intriguingly, those with greater than 44 months of employment found days off and rewards more valuable than contact with nursing leadership. Nurse residency programs attempted to measure critical thinking, but no evidence of change in critical thinking was reported (Olsen et al., 2001; UHC, 2006).

Program evaluations conducted by the remaining two NRPs revealed a positive experience for the GNs. Santucci (2004) reported that the NRP will remain a vital force in recruitment and retention. McHugh et al. (1996) concurred with Santucci (2004) by indicating the program was valuable and influenced independence among GNs.

In brief, nurse residency programs are characterized as generalist programs preparing new registered nurses for competent practice at the bedside. Most programs were developed in collaboration with academia and had a research component. Curricular topics focused less on technical skill competence and more on communication, safety, and leadership development. All programs emphasized networking. Monthly classes were held and all residents had a preceptor. Relationships with each other, the residency coordinator, and the preceptor were suggested as influences for success (Olson et al., 2001; Rosenfield, et al. 2004; UHC, 2005).

The University HealthSystem Consortium Nurse Residency Program. Given that GNs have difficulty adjusting to the demands of their first positions and have a high turnover rate, nurse residency programs (NRP) have been touted as a method to (a) improve job satisfaction and

prevent turnover (The Advisory Board, 2002; American Association of Colleges of Nurses, 2002; Joint Commission on Accreditation of Hospitals, 2003; Casey et al 2004), (b) promote competency and satisfaction (Boyer, 2002; Herdrich & Lindsay, 2006), and (c) promote satisfaction, autonomy and professionalism (UHC, 2005; 2006).

The University HealthSystem Consortium NRP (UHC NRP) was planned around a 12-month curriculum, meeting four hours every month for planned didactic on topics such as leadership, safety and evidence based practice (UHC, 2005). The UHC NRP was developed in partnership with the American Association of Colleges of Nursing (AACN) The UHC NRP measured nurse autonomy, nurse satisfaction, and GN experiences as well as turnover rates. There were statistically significant improvements in competency, communication and leadership by the end of the twelve month program ($p < .05$). Turnover rates were 11%, an improvement when compared to a 50% national turnover rate (UHC, 2005). Nurse residency programs attempted to measure critical thinking with an ATI exam but no evidence of change in critical thinking was reported (UHC, 2005).

Summary

This chapter addressed eight key topics: the nursing shortage, GN turnover, GN transition, job satisfaction, autonomy, and critical thinking and competency, and specific demographic variables. With over 2.3 million jobs needing to be filled the nursing shortage is projected to reach a crisis state, a 20% deficit by the year 2020. The U.S. nursing shortage is serious and complex, and the diminished staffing situation purports to be a public health crisis (Tanner, 2002; Bowles & Candela, 2005; Human Resources & Services Administration [HRSA], 2005).

Multiple factors contribute to the nursing shortage. These factors include, lack of support, early exits from the employing facility, a workforce that does not choose nursing as a profession, unsafe nurse-to patient ratios, and higher patient acuity requiring experienced nurses. Although there are many published reports of GN experiences, the data are widely variable, ranging from anecdotal narratives to surveys done on a one-time basis, often with a limited sample size, and a few are quasi-experimental studies. Consistent with early research into GN transition is a gap identified between education and practice (Kramer, 1974; Oermann & Moffitt-Wolf, 1997; Benner, 1984; Gerrish, 2000). The transition studies performed were mostly qualitative and reported on the stages of transition. Persistent themes that influence the GN experience included the consistency of role socialization support, the quality of the clinical orientation, and the level of nursing leadership support, including knowledge and sensitivity to GN transition and development. The transition from student nurse to GN has been characterized by stress, job dissatisfaction, conflict, and turnover. Further exploration is needed to determine the relationship between job satisfaction, critical thinking, and turnover among GNs during their first year of practice.

CHAPTER III

METHODOLOGY

This chapter explores the methodology that was employed to determine whether factors such as job satisfaction, autonomy, and critical thinking predict the retention and turnover of baccalaureate prepared graduate nurse residency program participants. In this chapter, the research used to present the major aims of the study is described. The following sections are research design, setting, population and sample, protection of human subjects, instrumentation, data collection procedures, and data analysis.

Research Design

This study used a nonexperimental research design to differentiate GNs who complete the nurse residency program from those who do not. This study conducted a secondary analysis of the selected variables, job satisfaction, autonomy, critical thinking, age, ethnicity and unit of employment. The data is part of a larger data set from a nationwide study designed to determine and evaluate the impact of a national demonstration project, the University HealthSystem Consortium's 12-month nurse residency program on transition of baccalaureate prepared nurses into clinical practice (UHC, 2006).

Setting

The study hospital is a 1,000-bed magnet academic medical center hospital located in the southwestern United States. The hospital has 52 units including five adult intensive care units and one emergency room. The units are classified by patient type in the data set, and include acute care or medical-surgical, critical care, emergency room, operating room, women and infant units, and psychiatry. Data were collected from all baccalaureate prepared graduate nurses who participated in a 12-month nurse residency program at this institution from 2005 to 2009.

Population and Sample

The entire population of GNs who meet the inclusion criteria were included in this study. Inclusion criteria included a) RN licensure or work permit pending licensure, b) graduation from a baccalaureate nursing program within six months of employment, c) graduates from baccalaureate prepared programs including accelerated programs would be eligible, d) full time employee at the study hospital and e) work in a staff nurse role.

Protection of Human Subjects

In compliance with procedures governing protection of human subjects, approval for the study was obtained from the Texas Woman's University Houston Institutional Review Board and The Methodist Hospital Research Institute's Institutional Review Board. Approvals were received in August of 2008 and September of 2008 and an amendment was approved in August of 2009 to extend the research. Measures to protect confidentiality of subjects were instituted and maintained through all aspects of the study. Data were accessed and abstracted from records obtained from profiles stored on secure files located at the University HealthSystem Consortium's site. All subjects were double coded with a unique identifier that was delinked. Demographic data and results from surveys, as well as the UHC NRP exam were reported in aggregate form.

Instrumentation

The researcher-developed demographic data form (Appendix A), McCloskey Mueller Satisfaction Scale Satisfaction Scale (MMSS) (Appendix B), Gerber's Control Over Nursing Practice Scale (CONP) (Appendix C), and the UHC NRP exam were administered to all subjects enrolled in the proposed study. Departure rates were examined with data collected from the study hospital's nurse residency coordinator and verified with the study hospital's Human Resources Department. The demographic data form was designed by the researcher to gather data on the

subjects' gender, age, nursing program, previous degrees, general work experience, work experience as a student nurse, graduation date, start date of employment, and specialty unit assignment.

The Mueller McCloskey Satisfaction Scale

The Mueller McCloskey Satisfaction Scale (MMSS) (1990) measures job satisfaction. It is a valid and reliable, nurse-sensitive, five-point Likert-type, 31-item instrument varying from very satisfied to very dissatisfied. The MMSS, a multidimensional job satisfaction questionnaire, is composed of 31 items representing eight domains of job satisfaction: scheduling, extrinsic rewards, family and work balance, coworkers' interactions, praise and recognition, and control and responsibility, and it reflects many of the variables in the PMCM. The MMSS has possible scores ranging from 31 to 155. The instrument has an overall Cronbach Alpha ranging from .89-.91 indicating high reliability among experienced nurses (Mueller & McCloskey, 1990) and inexperienced nurses (Roberts et al. 2004). Cronbach Alphas for each of the subscales range from .52-.89. Subscales with less than three items had the lowest reliability, indicating to the researcher that careful analysis of the results relevant to these subscales must be performed. For construct validity, moderate positive correlations (.31-.68) of subscale variables were obtained when compared with the Job Characteristics Inventory (Mueller & McCloskey, 1990).

In this study the internal consistency of responses to the Mueller McCloskey Satisfaction Scale was estimated using a coefficient alpha. Alpha reliability for scores on the 31 items for the present sample (N = 411) was found to be .94. This coefficient indicates that scores from the instrument are stable and consistent (Nunnally & Bernstein, 1994). Alphas for each of the subscales of nurse satisfaction were performed, including satisfaction with extrinsic rewards, scheduling, balance of family and work, co-workers, interaction opportunities, professional

opportunities, praise and recognition and control and responsibility. Alphas for each of the subscales ranged from .86 - .58. Nunnally & Bernstein (1994) has indicated 0.7 to be an acceptable reliability coefficient but lower thresholds are sometimes used in the literature. The subscale identified as satisfaction with co-worker relationships reporting below 0.7 had 2 or less items.

Gerber's Control Over Nursing Practice Scale

Autonomy was be measured by the Gerber's Control over Nursing Practice scale (CONP). Weston (2009) indicates that this is the most widely used instrument for measuring CONP in nursing research. The scale, which contains 21-items, on a 7-point likert scale from seven (high) to one (low) measures perceived control over direct professional practice. With this instrument the nurse indicates the degree of freedom she or he has to influence the work environment, make autonomous decisions related to the patient's care, and to evaluate and modify nursing practice. The instrument was developed by Gerber (1990) to measure nurse's freedom to evaluate and modify nursing practices. The CONP scale was constructed for the Differentiated Group Professional Practice in Nursing Project. This scale is scored as a unidimensional (single factor) scale (Lancero & Gerber, 1995). The CONP Cronbach Alpha reliability consistently ranged from .89-.96 with experienced nurses (Gerber, Murdaugh, Verran, & Milton, 1990) and for GNs (UHC, 2005; 2006).

The internal consistency of responses for this study to the Control Over Nursing Practice Scale was estimated by coefficient alpha. Alpha reliability for scores on the 21 items for the present sample (N= 411) was found to be .96. This coefficient indicates that scores from the instrument are stable and consistent (Nunnally & Bernstein, 1994). The reliability of the instrument was established through robust Cronbach alpha levels. The scale has been examined

for predictive validity using multiple regression techniques and for construct validity using confirmatory factor analysis.

The University HealthSystem Consortium Nurse Residency Exam

The University HealthSystem Consortium Nurse Residency Exam (UHC NRP) was developed by Elsevier Evolve (formerly HESI) for the UHC at the behest of the American Association of Colleges of Nurses (AACN) and was used to measure critical thinking. Expert nurse educators and administrators established content validity through a test blueprint developed from the constructs of the curriculum (Appendix D). This 45-question online exam has five pilot items and 40 items that meet the statistical requirements for inclusion into the exam. As of November 2007, each item has been administered 633 times to nurse residents participating in the UHC NRP. The benchmark score established by Elsevier Evolve is 850 with a range of 0-1500. The point biserial correlation (PBCC) is 0.188 indicating an acceptable test score. The KR20 for this exam was .7194 indicating acceptable reliability. To examine reliability for the CONP in this study, a reliability index was run on the scores for all study participants. A Cronbach's alpha coefficient of 0.973 indicated acceptable reliability.

Data Collection

This study employed secondary analysis of selected existing data from a national data base. The demographic data form, MMSS, CONP and UHC NRP exam were administered during month one of employment. The demographic form took approximately five minutes to complete and was administered during week one of hire. The MMSS and CONP were administered in 30 minutes on the same day. The UHC NRP exam was administered during the first month of employment, but on a separate occasion from the MMSS and CONP surveys. The

GNs finished the exam in 60 minutes. All instruments were administered on-line in a computer lab.

Turnover rate was calculated as the rate of departure from employment for all GNs hired between 2005 and 2009. This was collected retrospectively from the records of the NRP coordinator of the study hospital and verified with the Human Resources Department.

Treatment of Data

The data was analyzed using SPSS software (version 17.0). Descriptive statistics such as frequencies, means, ranges, and standard deviations were used to describe the sample. A discriminant function analysis was employed to address the research question. .

Discriminant analysis may be used to predict group membership based on a number of interval variables, or it may be used to discover differences between groups (Stevens, 2002). The predictions are assumed to have a normal distribution. The predictors must be a true dichotomy. The independent variables must be interval level. Participants are randomly sampled and the score on a variable is independent from the score on this variable for all other participants (Green & Salkind, 2003). To perform this analysis a grouping or dependent variable is needed. The grouping variable for this study was the departure or retention of GNs from the study institution. Interval level data are required for the independent variables. The demographic variables are nominal level, categorical variables expressed as dummy variables.

CHAPTER IV

ANALYSIS OF DATA

This study was designed to determine whether the variables of job satisfaction, autonomy, critical thinking, age, ethnicity and employing unit predict departure and retention patterns of baccalaureate prepared graduate nurse. The study used a quantitative non-experimental research design employing secondary data analysis. Retrospective demographic data were collected from graduate nurses who had participated in the study hospital's nurse residency program from 2005-2009. A description of the sample and presentation of study findings are presented in this chapter.

Description of the Sample

Retrospective demographic data were collected from GNs who participated in the study hospital's nurse residency program. Three instruments were used to collect data in this study. The McCloskey Satisfaction Scale (MMSS) measured GN job satisfaction, Gerber's Control Over Nursing Practice Scale (CONP) measured GNs perception of autonomy over practice, and the University HealthSystem Consortium's Nurse Residency Program exam (UHC NRP) measured critical thinking. Of 427 eligible participants, 379 (88.75%) provided demographic data and completed these three surveys and the critical thinking test during the study period ranging from 2006-2009.

Descriptive statistics were used to describe the demographic characteristics of nurses who remained and those who departed (Table 1). The majority of the participants were female and less than 25 years of age. The mean age was 27.8 (SD 6.86). The typical participant in the nurse residency program at the study hospital was a white female under the age of 30 and employed on

an acute care unit. The sample was ethnically diverse with whites comprising slightly less than one half of the sample. Forty-five percent were employed on adult acute care units, and 35.6% were employed in critical care units or in emergency rooms.

When comparing the data of nurses who departed with those who remained, the findings reveal that men and women remained at the study hospital at equal rates. Ethnically diverse minority participants departed at slightly higher rates than non-minority participants. Those who remained at the study hospital at 2.6 times the rate of those aged 30 or older. Both acute care and critical care area nurses remained at the study hospital at higher rates when compared to those study participants located in perioperative, women's health and rehabilitation areas.

Table 1

Demographic Characteristics of the Sample Who Remained or Departed

Variable	Remained		Departed		Total	
	f	%	f	%	f	%
Sex (N = 427)						
Female	308	84.8	53	82.8	361	84.5
Male	55	15.2	11	17.2	66	15.5
Total	363	100	64	100	427	100
Ethnicity (N = 427)						
Black	78	21.5	18	28.1	96	22.5
White	178	49	29	45.3	207	48.5
Asian American	69	19	9	14.1	78	18.3
Hispanic	32	8.8	6	9.4	38	8.9
Other	6	1.7	2	3.1	8	1.9
Total	363	100	64	100	427	100
Age (N = 424)						
≤ 24	189	52.4	27	42.9	216	50.9
25-29	73	20.2	13	20.6	86	20.3
30-34	55	15.2	9	14.3	64	15.1
35-39	19	5.3	9	14.3	28	6.6

40-44	19	5.3	0	0	19	4.5
≥45	6	1.7	5	7.9	11	2.6
Total	361	100	63	100	424	100

Table 2con't.

Unit Type (N = 427)						
Acute care	168	46.3	24	37.5	192	45
ICU/ER	131	36.1	21	32.8	152	35.6
Perioperative	45	12.4	14	21.9	59	13.8
Women's Health	15	4.1	3	4.7	18	4.2
Rehab/SNF	4	1.1	2	3.1	6	1.4
Total	363	100	64	100	427	100

Table 2 compares means, standard deviations and ranges on the variables job satisfaction, autonomy and critical thinking for those GNs who remained with those GNs who departed. All participants displayed moderate levels of job satisfaction and autonomy, and achieved benchmark levels of critical thinking ability. Participants who departed averaged a lower score across all three variables.

Table 3

Means, Standard Deviations and Ranges for Variables Satisfaction, Autonomy and Critical Thinking

Variable	Remained			Departed			Total		
	M	SD	Range	M	SD	Range	M	SD	Range
MMSS (N = 412)	110	15.2	91	101.5	18.4	87	110.5	16.2	99
CONP (N = 412)	112.3	20.8	124	104.3	26.2	79	111.2	21.9	124
UHC NRP (N = 395)	851.4	124.1	691	823.4	121.8	538	847.6	124	691

note. MMSS = The McCloskey Satisfaction Scale, CONP = Gerber's Control Over Nursing Practice Scale, UHC NRP = University HealthSystem Consortium's Nurse Residency Program.

The MMSS contains eight subscales that represent eight domains including scheduling, extrinsic rewards, family and work balance, coworkers' interactions, praise and recognition, social interaction, professional opportunities, and control and responsibility. Table 3 compares means, standard deviations and ranges for the eight MMSS subscales.

Table 3

Means, Standard Deviations and Ranges for MMSS Subscales

Variable	Remained			Departed			Total		
	M	SD	Range	M	SD	Range	M	SD	Range
Extrinsic Rewards	3.9	.67	3.7	3.5	.88	3.7	3.9	.71	3.7
Scheduling	3.5	.75	3.3	3.3	.76	3.5	3.4	.75	3.5
Balance work & family	3.2	.59	3.7	3.0	.51	3.3	3.1	.58	3.7
Co-workers interaction	3.9	.67	3.5	3.6	.84	3.5	3.8	.70	3.5
Professional interaction opportunities	3.7	.67	3.3	3.4	.68	3.0	3.6	.68	3.3
Praise & recognition	3.9	.74	3.3	3.5	.97	3.5	3.8	.78	3.5

Table 3 cont'

Professional opportunities	3.3	.68	4.0	3.0	.63	3.0	3.2	.68	4.0
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Overall, those who remained reported greater satisfaction in all subscales than those who departed. The results of all subscales reveal that those who report greater satisfaction are more likely to stay. The highest reported mean score among the eight MMSS subscales was for professional interaction opportunities and coworker interaction. The participants were least satisfied with family and work balance. This is consistent with single item analysis (N=412, with 15 cases missing on a 1 to 5 scale), which revealed that GNs were most satisfied with interactions with immediate supervisor, peers and benefits. Respondents were least satisfied with compensation for working weekends, childcare facilities and maternity leave.

Appendix E compares means, standard deviations and ranges on the single item responses from the MMSS for those GNs who remained with those GNs who departed. Overall, participants who remained at the hospital were most satisfied with their immediate supervisor, benefits and their nursing peers. They were least satisfied with compensation for weekend work, child care and opportunity to publish. Those who departed were most satisfied with hours worked, nursing peers and health care delivery methods. And like those who stayed, they were least satisfied with compensation for weekend work, child care and opportunity to publish.

Appendix F compares means, standard deviations and ranges on the single item responses from the CONP for those GNs who remained with those GNs who departed. Generally, both groups likened more autonomy with the ability to consult and obtain assistance from others. The groups also did not differ in their perception of least amount of autonomy and both perceived less autonomy in the area of introducing new procedures or protocols. Still, the groups differed in several areas. Those who departed early felt more strongly that they could implement nursing

care in an efficient manner compared to the remainers. Furthermore, the departers scored lower on acting on decisions and coordinating work schedule when compared to remainers. In contrast, the remainers indicated strongly that they were able to provide holistic patient-centered care and practice clinical to the best of ability. In sum, mean scores were higher in all areas of the CONP for remainers except in one area, implementation of nursing care in an efficient manner.

Findings

This study addressed the following research question: Do the variables of job satisfaction, autonomy, critical thinking, age, ethnicity, and employing unit predict which baccalaureate prepared GNs complete the nurse residency program and stay employed at the study institution, and which nurse residents depart the program early? Results were analyzed using a discriminant function analysis. The discriminant function analysis was used to determine what set of independent variables best predicted group membership.

Box's M test of equality was computed to examine homoscedasticity and found a violation of the assumption ($F = 1.544, p = .006$). This indicates significant differences in the covariance matrices for the two groups. This assumption is fairly robust. Violation may not provide for maximum separation of the predicted group membership but can be safely interpreted. The overall Wilk's lambda is $\Lambda = .911, \chi^2(10, N = 378) = 34.711, p = .000$ indicating that the predictor variables did differentiate between nurse residents who remained and those who departed.

The individual dependent variables that contribute significantly to the differentiation between those who stay versus those who depart are job satisfaction ($F = 17.033, p = .000$), autonomy ($F = 5.275, p = .02$) and age ($F = 4.654, p = .03$). Unit, ethnicity and critical thinking did not contribute significantly to the overall model. Those who remained were younger and

perceived themselves as more satisfied and more autonomous. The canonical correlation of .299 indicates that the 8.9% of the variance is accounted for in predicting those who stay and those who leave.

A classification function was used to predict group membership. Overall, 86.8% (328 of the 378) of cases were predicted and grouped correctly. Still, it is important to consider chance agreement. With this in mind, a kappa coefficient was computed and a value of .126 indicated better than chance level agreement. The kappa coefficient is a standard measure of agreement for categorical data. A kappa value of 1 indicates perfect prediction, while a value of 0 indicates chance level prediction (Green & Suskind, 2003).

Summary

This chapter provides a description of the sample and results of statistical testing specific to the research question. The purpose of this study was to examine variables that may predict the departure and retention patterns of baccalaureate prepared graduate nurse residents. Three of the seven independent variables, satisfaction, age and autonomy are found to have a statistically significant influence whether nurse graduates remained or left the institution. The strongest influence appears to be job satisfaction. Ethnicity, unit of service, gender and critical thinking did not significantly influence the decision to remain.

CHAPTER V

SUMMARY OF THE STUDY

This non-experimental study examined six variables, age, autonomy, critical thinking, ethnicity, job satisfaction, and unit of employment, to determine whether they could accurately predict departure and retention patterns of baccalaureate prepared graduate nurses participating in a 12-month nurse residency program. This chapter summarizes the study and includes a discussion of findings, conclusions, implications for nursing practice and recommendations for further study.

Summary

To fulfill the study purpose and to answer the proposed research question (can the variables, job satisfaction, autonomy and critical thinking, age, ethnicity and unit be used to predict those GNs who complete the nurse residency program and are retained at the study institution from those nurse residents who depart the program early), a non-experimental retrospective, secondary analysis was conducted. Descriptive statistics and discriminant analysis were conducted to analyze the study data. New graduates completed four assessment tools during the beginning of their residency including: Mueller McCloskey Satisfaction Scale Satisfaction Scale, (Appendix B), Gerber's Control Over Nursing Practice Scale (Appendix C), and the UHC NRP exam. Scores from these instruments and demographic data were used to determine whether they could accurately predict departure and retention patterns of baccalaureate prepared graduate nurses.

Three hundred and seventy nine new graduates completed all four questionnaires for the study. Six independent variables were entered into the discriminant analysis as potential predictor variables including age, total job satisfaction scores, total autonomy scores, critical thinking exam scores, unit and ethnicity. The study results revealed three statistically significant predictors among the seven independent variables. Job satisfaction, autonomy and age, were found to explain 8.9 % of the variance in GNs who chose to remain at the study hospital. The discussion section is organized into three main areas: the proposed model, sample characteristics, and the variables under study – departure, job satisfaction, autonomy, critical thinking, age, unit and ethnicity. It is clear that the issues surrounding GN retention are complicated and contain more intricacies than can easily be investigated in one study.

Discussion of the Findings

This study, guided by the PMCM model, investigated several important areas related to GN departure. The dependent variable in the PMCM is departure or retention. The model suggests that there are 10 independent variables that intervene in determining turnover among registered nurses. According to PMCM, individuals make decisions about their willingness to stay or leave based on degree of job satisfaction, perception of autonomy, kinship relationships, communication, pay, promotion, education and training, intent to stay and participation. The PMCM model emphasizes the role these variables have in influencing decisions to remain over demographic variables. Still, the PMCM underscores that demographic variables like unit of employment, sex, ethnicity or age have an interaction effect and thus influence departure in a less instrumental manner.

The revised turnover model, based on the work of Price and Mueller (1981a), focused on six independent variables – job satisfaction, autonomy, critical thinking, age, unit and ethnicity,

and received mixed support in the present research. The revised model retained two variables, job satisfaction and autonomy, from the original model that was tested and shown as significant in various studies. Job satisfaction and autonomy were added to the model to modify the demographic variables Price and Mueller (1981a) considered in predicting turnover. The revised model added a predictor proposed in the literature to affect departure among GNs, critical thinking. The current study proposed that the variables critical thinking, age, ethnicity, and unit were directly antecedent to remaining or departing and provided explanatory power for departing. The revised model built on the relationship between job satisfaction and autonomy and proposed more direct antecedence for age, unit, gender and ethnicity. Furthermore, this study introduced a predictive relationship between critical thinking and remaining or departing.

In this study job satisfaction, autonomy and age proved to be statistically significant and were predictive of retention among graduate nurses participating in a 12-month nurse residency program. Ethnicity, unit of employment, and critical thinking were found not to be statistically significant or predictive of retention. Thus, the revised conceptual model did not serve as a useful framework. Age was the only added variable that proved to be a useful predictor. Job satisfaction and autonomy, which were both factors in the original PMCM model, were the other predictive variables.

Both positive and negative findings are summarized below and implications are discussed. The study found that the sample population did not closely parallel the population of GNs based on national statistics for age and gender of new nurses (HRSA, 2005; NCSBON, 2006). A little more than half of the nurses in the study were younger than 26 years old and fewer than 7% of this group was over 40 years old. According to RWJF, the mean age of newly licensed nurses working in hospital settings was 31.5 years (RWJF, 2009).

With this study population, 84.5% were women and 15.5% were men. Nationally, men are 5.4% of the nursing population (HRSA, 2005). GNs in this study were more likely to be working on a medical surgical unit (45%) compared to nurses in a previous national study (22.8%) (NCSBON, 2006). The study population is ethnically diverse with White nurses comprising just under half the sample; whereas the HRSA (2001) reports that among nurses, 84.5% are White.

The problem of GN departure is well documented in the nursing literature. Reported median turnover rates for GNs during their first year of employment range from 35% - 61% (Nursing Executive Committee, 2001; Casey, et al., 2004). For this study, departure rates were 15%, which is significantly lower than the national rate of departure

Job satisfaction and retention among RNs has been addressed extensively in the literature. A previous study found that GNs rank job satisfaction higher than other items (Altier & Krsek, 2006). In direct contrast, scores on satisfaction with professional opportunities were consistent with recent research conducted by Robert, Jones, and Lynn (2004). Job satisfaction was found to have the largest impact on remaining at the institution. Job satisfaction has been frequently reported as a significant predictor of turnover (Price & Mueller, 1981a; Larrabee, Janney, Ostrow, Withrow, Hobbs, & Burant, 2003; Roberts, Jones & Lynn, 2004; Halfer & Graf, 2006). The results of the current study support these studies and indicate that job satisfaction is the most powerful determinant in remaining at the institution. There was a statistically significant difference in job satisfaction scores between retained and departing nurse residents.

Autonomy has not been as extensively studied as an influence on turnover. Still, in a more recent study Casey et al. (2004) discussed the positive and direct influence of autonomy on job satisfaction and intent to leave. In this investigation autonomy did predict remaining or leaving, but not as strongly as job satisfaction. Nonetheless, those who stayed achieved higher autonomy scores than those who departed. Price (2002) concluded that when nurses have more autonomy they have higher job satisfaction.

Contrary to previous studies, where older age was found to have predictive value when associated with job satisfaction rates and intent to stay (Blegen & Mueller, 1987; McNeese-Smith & Van Servellen, 2000), this study found that the younger GNs were more likely to stay and 35-40 year olds more likely to leave. It is worthy to note that as GN age increased GN turnover increased and then stabilized. This supports findings from a previous study by Kaemar and Ferris (1989) suggesting that as job satisfaction decreases intent to stay decreases among 30-39 year olds.

Unit type was not a significant predictor. In the literature nurses employed on medical surgical units were more likely to resign (Leveck & Jones, 1996). The relationship to type of unit and remaining or leaving an institution is complex, and it is likely that the workplace environment and culture hold more influence on the decision to leave rather than the “place” or unit type.

Ethnicity did not contribute to or predict staying or leaving among the study population. GNs remained at the study institution at proportionally similar rates. Previous research on RN intent to stay and ethnicity is scant and inconsistent. The relationship between ethnicity and remaining or leaving an institution may be mediated by job satisfaction and autonomy.

Critical thinking did not statistically predict departure or retention among participants in this study. Critical thinking ability was not significantly different between the two groups though stayers did average a higher score than leavers. Critical thinking is a valued and necessary attribute that should be promoted and encouraged. Benner (1984) imparts the idea that critical thinking develops as the advanced beginner progresses to the expert level. Perhaps, the testing for critical thinking should take place at a later time and not at point of hire.

Conclusions

The variables, job satisfaction, autonomy and age predicted retention-departure rates among GNs participating in a 12-month nurse residency program. The following conclusions are derived from the finding of this study:

1. Job satisfaction, autonomy and age are useful variables in predicting retention-departure among GNs participating in a 12-month nurse residency program.
2. The characteristics of the GNs in the study sample did not mirror national characteristics of GNs.
3. The larger body of literature supports the findings in this study regarding job satisfaction and autonomy and its relationship to retention and departure.
4. Critical thinking, ethnicity and unit type did not predict retention among GNs participating in a 12-month nurse residency program.

The results of this study provide empirical data for the nursing discipline on GN retention. It is one of the first such studies that distinguishes between those GNs who remain and those who leave nurse residency programs at academic medical centers. Thus, the data obtained is pertinent to nursing educators and administrators.

The following are implications for practice:

1. Nurse administrators should implement multiple tactics to retain GNs that focus on job satisfaction and autonomy including strategies that focus on extrinsic rewards like weekend benefits, child care and maternity benefits, internal rewards like maintaining peer relationships, encouraging managerial support and maintaining an organizational structure that provides a framework in which GNs can provide significant contribution to the organizational climate of the hospital.
2. Managerial support is influential in job satisfaction and in retention. Therefore, it is suggested that managers developing positive relationships should be emphasized.
3. Schools of nursing need to focus attention on the critical role that satisfaction and autonomy play on retention. Providing experiences that reflect realistic situations may help soften the shock of the first year of employment.
4. The value of nurse extern programs (programs that prepare student nurses to work in academic medical centers) should not be overlooked. Strong extern programs can promote professional development and commitment of GNs to the extern institution.

Recommendations for Future Research

The following recommendations are made for future research:

1. Study replication that uses a time series design and examines GNs at onset, 1, 6, 12 and 18 months after hire.
2. Further studies on school-work transitions that enhance satisfaction, autonomy, critical thinking and retention.
3. Study replication that uses a critical thinking measure at onset and 18 months.
4. Study replication that examines the sample by generation cohort.
5. Further studies that test all the factors represented in the full original PMCM model to see if the predictive abilities for group membership could be increased.

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Appendix A

MUELLER MCCLOSKEY SATISFACTION SCALE (MMSS)

Mueller McCloskey Satisfaction SCALE (MMSS)

How satisfied are you with the following aspects of your current job?

Please circle the number that applies.

		Very Satisfied	Moderately Satisfied	Neither Satisfied nor Dissatisfied	Moderately Dissatisfied	Very Dissatisfied
1	Salary	5	4	3	2	1
2	Vacation	5	4	3	2	1
3	Benefits package (insurance, retirement)	5	4	3	2	1
4	Hours that you work	5	4	3	2	1
5	Flexibility in scheduling your hours	5	4	3	2	1
6	Opportunity to work straight days	5	4	3	2	1
7	Opportunity for part time work	5	4	3	2	1
8	Weekends off per month	5	4	3	2	1
9	Flexibility in scheduling your weekends off	5	4	3	2	1
10	Compensation for working weekends	5	4	3	2	1
11	Maternity leave time	5	4	3	2	1
12	Child care facilities	5	4	3	2	1
13	Your immediate supervisor	5	4	3	2	1
14	Your nursing peers	5	4	3	2	1
15	The physicians you work with	5	4	3	2	1

16	The delivery of care method (e.g., functional, team, primary)	5	4	3	2	1
17	Opportunities for social contact at work	5	4	3	2	1
18	Opportunities for social contact with your colleagues after work	5	4	3	2	1
19	Opportunities to interact professionally with other disciplines	5	4	3	2	1
20	Opportunities to interact with nursing faculty	5	4	3	2	1
21	Opportunities to belong to departmental and institutional committees	5	4	3	2	1
22	Control over what goes on in your work setting	5	4	3	2	1
23	Opportunities for career advancement	5	4	3	2	1
24	Recognition for your work from superiors	5	4	3	2	1
25	Recognition of your work from peers	5	4	3	2	1
26	Amount of encouragement and positive feedback	5	4	3	2	1
27	Opportunities to participate in nursing research	5	4	3	2	1

28	Opportunities to write and publish	5	4	3	2	1
29	Your amount of responsibility	5	4	3	2	1
30	Your control over work conditions	5	4	3	2	1
31	Your participation in organizational decision making	5	4	3	2	1

Appendix B

GERBER'S CONTROL OVER PRACTICE SCALE

Gerber's Control Over Nursing Practice Scale

Instructions: The following statements represent personal opinions about nursing practice. Please indicate the one number that most closely and most honestly indicates how you feel about each statement.

The lower numbers indicate degrees of disagreement; the higher numbers indicate degrees of agreement. The more strongly you feel about the statement the further from the center you should be.

		Disagree					Agree	
As a nurse I am free to:								
1	Evaluate current nursing practice and procedures	1	2	3	4	5	6	7
2	Evaluate the outcomes of nursing care	1	2	3	4	5	6	7
3	Consult with others when solving complex care problems	1	2	3	4	5	6	7
4	Influence standards of nursing practice	1	2	3	4	5	6	7
5	Modify or adapt patient care procedures and protocols	1	2	3	4	5	6	7
6	Implement nursing care in an efficient manner	1	2	3	4	5	6	7
7	Provide holistic patient-centered care	1	2	3	4	5	6	7

8	Plan strategies to meet my own developmental needs	1	2	3	4	5	6	7
9	Practice clinical skills to the best of my ability	1	2	3	4	5	6	7
10	Analyze problems critically	1	2	3	4	5	6	7
11	Plan care with other members of the health care team such as physicians, dietitians, therapists	1	2	3	4	5	6	7
12	Act on my own decisions related to care giving	1	2	3	4	5	6	7
13	Be creative in the delivery of care	1	2	3	4	5	6	7
14	Introduce new nursing practices and procedures	1	2	3	4	5	6	7
15	Identify problems in the delivery of nursing care	1	2	3	4	5	6	7
16	Coordinate care activities among various health services	1	2	3	4	5	6	7
17	Adjust plans of care to meet patients' changing needs	1	2	3	4	5	6	7
18	Coordinate my time off duty	1	2	3	4	5	6	7
19	Have the authority needed to fulfill patient care responsibilities	1	2	3	4	5	6	7
20	Obtain assistance from	1	2	3	4	5	6	7

**other staff members when
needed**

21	Use research findings to improve my nursing practice	1	2	3	4	5	6	7
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Appendix C

NURSE RESIDENT DEMOGRAPHIC INFORMATION

Nurse Resident Demographic Information

All information will be kept confidential and your name will not be entered into the database at any time.

Name: _____

1. RN ID: _____

2. Age in years (at date of hire): _____

3. Gender: _____

4. Ethnicity

African-American/Black

Caucasian/White

Asian

Hispanic

Other

5. Basic Nursing Education completed at: _____

6. Graduation Date: _____

7. Degree received:

BS

BSN

Accelerated BSN

Other

8. Previous non-nursing degree

- AD; major _____
- Baccalaureate; major _____
- Masters; major _____
- Doctorate; major _____
- None

9. Overall grade point average: _____

10: Unit

- Critical care unit
- Emergency department
- Medical-Surgical Unit
- Labor and Delivery/Nursery/Postpartum
- Perioperative
- Other; specify: _____

Appendix D

UHC NRP TEST MATRIX

UHC NRP Test Matrix

Category	%/exam	Mean Difficulty	Mean PBCC
Nursing Process	100	0.72	0.18
Assessment	22	.73	.19
Analysis			
Planning	4	.72	.19
Implementation	18	.72	.17
Evaluation	49	.72	.18
	7	.71	.16
Client Needs	100	.72	.18
<input type="checkbox"/> Safe effective care environment	62	.72	.18
<input type="checkbox"/> Mgmt of care	38		
<input type="checkbox"/> Safety & infection control	24	.72	.18
		.72	.19
<input type="checkbox"/> Health promotion and Maintenance	4	.71	.18
	9	.72	.13
<input type="checkbox"/> Psychosocial Integrity	24	.72	.18
<input type="checkbox"/> Physiological Integrity			

<input type="checkbox"/> Basic care and comfort	13	.74	.18
<input type="checkbox"/> Pharm & Parenteral TX	7	.7	.16
<input type="checkbox"/> Physio Adaptation	4	.72	.2
Fundamentals	51	.72	.17
<input type="checkbox"/> Med Administration	16	.71	.17
<input type="checkbox"/> Basic Nursing Skills			
Geriatrics	22	.72	.18
Medical-Surgical	4	.71	.18
Professional Issues			
<input type="checkbox"/> Cultural/spiritual	42	.72	.18
<input type="checkbox"/> Documentation	49	.72	.18
<input type="checkbox"/> Leadership	7	.72	.16
<input type="checkbox"/> Legal/Ethical	11	.72	.15
<input type="checkbox"/> Nursing Process	31	.72	.19
<input type="checkbox"/> Teaching	11	.72	.16
	2	.73	.14
	7	.72	.16
Psychiatric Mental Health	11	.72	.15
<input type="checkbox"/> Anxiety/Communication	7	.72	.13
<input type="checkbox"/> Depression/Grief	7	.72	.15
Clinical Concepts	38	.73	.18
<input type="checkbox"/> CV	2	.73	.16

<input type="checkbox"/> Endocrine	4	.72	.2
<input type="checkbox"/> GI	4	.72	.16
<input type="checkbox"/> Skin	11	.74	.18
<input type="checkbox"/> Musculoskeletal	4	.73	.22
<input type="checkbox"/> Neuro	7	.71	.18
<input type="checkbox"/> Oncology	2	.76	.12
<input type="checkbox"/> Operative	4	.71	.19
<input type="checkbox"/> Physical Assessment	4	.74	.18
<input type="checkbox"/> Respiratory	4	.73	.18
Critical Thinking	96	.72	.17
Therapeutic Communication	29	.72	.17
Therapeutic Nursing Interventions	73	.72	.17
Core Categories	100	.72	.18
<input type="checkbox"/> Assessment	33	.72	.18
<input type="checkbox"/> Critical Thinking	98	.72	.18
<input type="checkbox"/> Communication	33	.72	.17
<input type="checkbox"/> Technical Skills	49	.72	.18
Core Knowledge	100	.72	.18
<input type="checkbox"/> Ethics	9	.71	.2
<input type="checkbox"/> Health Promotion/Risk Prevention	51	.72	.18
<input type="checkbox"/> Illness and disease Management	22	.73	.17
<input type="checkbox"/> Information and Health	13	.72	.16

Care teaching			
<input type="checkbox"/> Health Policy	24	.72	.18
<input type="checkbox"/> Human Diversity	9	.72	.18
Role Development	100	.72	.18
<input type="checkbox"/> Manager of care	40	.72	.18
<input type="checkbox"/> Member of Profession	7	.73	.19
<input type="checkbox"/> Provider of care	73	.72	.17

Appendix E

MEANS STANDARD DEVIATIONS AND RANGES FOR MMSS SINGLE ITEMS

Means, Standard Deviations and Ranges for MMSS Single Items

	Variable	Remained			Departed			Total		
		M	SD	Range	M	SD	Range	M	SD	Range
1	Salary	3.9	.84	4	3.5	1.2	4	3.9	.90	4
2	Vacation	3.7	.81	4	3.3	1.0	4	3.7	.86	4
3	Benefits package (insurance, retirement)	4.2	.82	4	3.7	1.0	4	4.1	.87	4
4	Hours that you work	4.0	.86	4	3.9	1.0	4	4.0	.88	4
5	Flexibility in scheduling your hours	3.7	1.0	4	3.2	1.2	4	3.7	1.0	4
6	Opportunity to work straight days	3.8	1.0	4	3.6	1.0	4	3.7	1.0	4
7	Opportunity for part time work	3.3	.79	4	3.1	.77	4	3.3	.79	4
8	Weekends off per month	3.7	1.1	4	3.6	1.2	4	3.6	1.0	4
9	Flexibility in scheduling your weekends off	3.5	.96	4	3.5	1.2	4	3.5	1.0	4
10	Compensation for working weekends	2.8	1.3	4	2.8	1.2	4	2.8	1.3	4
11	Maternity leave time	3.2	.69	4	3.1	.49	4	3.2	.67	4
12	Child care facilities	2.9	2.0	4	2.8	.78	4	2.9	.73	4
13	Your immediate supervisor	4.3	.80	4	3.8	1.0	3	4.2	.85	4
14	Your nursing peers	4.1	.78	4	3.9	.96	3	4.1	.81	4
15	The physicians you work with	3.7	.84	4	3.3	.99	4	3.6	.87	4
16	The delivery of care method (e.g., functional, team, primary)	4.0	.76	3	3.8	.87	3	4.0	.78	3
17	Opportunities for social contact at work	3.8	.83	4	3.4	.88	3	3.7	.85	4
18	Opportunities for social contact with your colleagues after work	3.4	.88	4	3.1	.80	3	3.4	.88	4
19	Opportunities to interact professionally with other	3.7	.81	4	3.3	1.1	4	3.7	.87	4

	disciplines									
20	Opportunities to interact with nursing faculty	3.3	.86	4	2.9	.74	4	3.2	.85	4
21	Opportunities to belong to departmental and institutional committees	3.5	.93	4	3.2	.88	4	3.5	1.0	4
22	Control over what goes on in your work setting	3.3	.87	4	3.1	1.0	4	3.3	.90	4
23	Opportunities for career advancement	3.9	.88	4	3.5	1.0	4	3.8	.91	4
24	Recognition for your work from superiors	3.6	.91	4	3.3	1.1	4	3.6	.94	4
25	Recognition of your work from peers	3.7	.88	4	3.5	1.0	4	3.7	.90	4
26	Amount of encouragement and positive feedback	3.8	1.0	4	3.4	1.2	4	3.8	1.0	4
27	Opportunities to participate in nursing research	3.2	.81	4	3.0	.78	4	3.2	.81	4
28	Opportunities to write and publish	3.1	.73	4	2.9	.68	3	3.1	.73	4
29	Your amount of responsibility	3.4	.91	4	3.1	1.0	4	3.4	.92	4
30	Your control over work conditions	3.7	.81	4	3.6	.96	4	3.7	.83	4
31	Your participation in organizational decision making	3.3	.79	4	3.0	.97	4	3.3	.83	4

Appendix F

MEANS, STANDARD DEVIATIONS AND RANGES FOR CONP SINGLE ITEMS

Table 5

Mean SD and Range Gerber's Control Over Nursing Practice Scale

	Variable	Remained			Departed			Total		
		M	SD	Range	M	SD	Range	M	SD	Range
1	Evaluate current nursing practice and procedures	5.4	1.5	6	5.3	1.4	6	5.4	1.4	6
2	Evaluate the outcomes of nursing care	5.6	1.2	6	5.3	1.6	6	5.6	1.3	6
3	Consult with others when solving complex care problems	6.0	1.1	6	5.7	1.4	6	6	1.1	6
4	Influence standards of nursing practice	4.9	1.4	6	4.8	1.6	6	4.9	1.5	6
5	Modify or adapt patient care procedures and protocols	4.8	1.5	6	4.5	1.8	6	4.7	1.5	6
6	Implement nursing care in an efficient manner	5.6	1.2	6	5.7	1.1	6	5.6	1.2	6
7	Provide holistic patient-centered care	5.8	1.2	6	5.6	1.4	6	5.7	1.2	6
8	Plan strategies to meet my own developmental needs	5.4	1.2	6	4.9	1.8	6	5.3	1.4	6
9	Practice clinical skills to the best of my ability	5.8	1.2	6	5.2	1.8	6	5.7	1.3	6
10	Analyze problems critically	5.6	1.3	6	5.4	1.4	6	5.6	1.3	6
11	Plan care with other members of the health care team such as physicians, dietitians, therapists	5.2	1.5	6	4.7	1.8	6	5.1	1.5	6
12	Act on my own decisions related to care giving	5.2	1.3	6	4.4	1.8	6	5.1	1.4	6
13	Be creative in the delivery of care	5.2	1.3	6	4.6	1.7	6	5.1	1.4	6
14	Introduce new nursing practices and procedures	4.5	1.6	6	4	1.7	6	4.4	1.6	6
15	Identify problems in the delivery of nursing care	5.2	1.4	6	5	1.6	6	5.1	1.5	6
16	Coordinate care activities	5.1	1.4	6	4.8	1.6	6	5	1.5	6

	among various health services									
17	Adjust plans of care to meet patients' changing needs	5.5	1.3	6	4.8	1.7	6	5.3	1.4	6
18	Coordinate my time off duty	5.0	1.7	6	4.5	1.7	6	4.9	1.6	6
19	Have the authority needed to fulfill patient care responsibilities	5.2	1.3	6	4.6	1.6	6	5.1	1.4	6
20	Obtain assistance from other staff members when needed	6.1	1.1	5	5.6	1.5	6	5.9	1.7	6
21	Use research findings to improve my nursing practice	5.2	1.4	6	4.9	1.8	6	5.2	1.6	6

Appendix G
HUMAN SUBJECTS APPROVAL



Office of Research
6700 Fannin Street
Houston, TX 77030-2343
713-794-2480 Fax 713-794-2488

Approved 09/26/2008
October 15, 2009

Ms. Rosemary Pine
College of Nursing - Rae Langford Faculty Advisor
6700 Fannin Street
Houston, TX 77030

Dear Ms. Pine:

Re: *"Predicting Departure of Baccalaureate Prepared Graduate Nurses Participating in a 12 Month Residency Program"*

The above referenced study has been reviewed by the TWU Institutional Review Board (IRB) and was determined to be exempt from further review.

Any changes in the study must receive review and approval prior to implementation unless the change is necessary for the safety of subjects. In addition, you must inform the IRB of adverse events encountered during the study or of any new and significant information that may impact a research participant's safety or willingness to continue in your study.

Sincerely,

Dr. John Radcliffe, Chair
Institutional Review Board - Houston



Institutional Review Board

NOTIFICATION OF AMENDMENT (EXPEDITED) APPROVAL

September 21, 2009

From:

Susan Miller, M.D., M.P.H.
Chair, TMHRI IRB 1

To: Rosemary Pine, R.N.

CC:
Rosemary Pine, R.N.

RE: Ame2_Pro00002178 of MS2_Pro00002178 (IRB0808-0251)
Title: Predicting the retention of new graduate nurses

AMENDMENT APPROVAL DATE: September 21, 2009

The Institutional Review Board has reviewed your amendment submission dated 9/18/2009, to the above numbered protocol and the following changes have been **FULLY APPROVED**.

- Change the number of participants in the study from 200 to 500

Please note that prior to starting any experiments, it is your responsibility to give a copy of this document to all research personnel involved in the project and to discuss the project with each employee. Please ensure that only the most current IRB approved consent may be used during the study.

If you have any questions or comments, please contact the Office of Research Protection at 713-441-5847 or 713-441-5837 or come to MGJ4-010.

Sincerely,

Susan Miller, M.D., M.P.H.

This e-mail is the property of The Methodist Hospital and/or its relevant affiliates and may contain confidential and privileged material for the sole use of the intended recipient(s). Any review, use, distribution or disclosure by others is strictly prohibited. If you are not the intended recipient (or authorized to receive for the recipient), please contact the sender and delete all copies of the message. Thank you.

The Methodist Hospital Research Institute
6565 Fannin Street
Houston, TX 77030
(713-441-1261)

MEMORANDUM

TO: Dr. Rae Langford
Rosemary Pine TWU #0194614

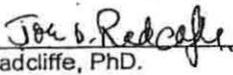
FROM: IRB

DATE: October 6, 2009

SUBJECT: Modification to currently approved proposal

Proposal Title: "Predicting the departure and retention of baccalaureate prepared nurses"

Your modifications, as per your attached memo of September 18, 2009 to the currently IRB approved protocols have been approved.



John Radcliffe, PhD.
Chairperson

Rosemary Pine
1011 Sugardale Court
Sugar Land, TX 77498
September 18, 2009

Dr. John Radcliffe
Chair, IRB - Houston
Texas Woman's University
Office of Research
6700 Fannin
Houston, TX 77030

Re: Amendment to "Predicting the departure and retention of baccalaureate prepared graduate nurses"

Dear Dr. Radcliff:

Please accept this request for an amendment to the above listed study. I am requesting that I be permitted to change the number of participants in the study from 200 to 500.

Type of Amendment	Description of Revision	Rationale for Revision
Add additional subjects (500)	There are approximately 500 additional subjects	Completion of dissertation

I have received TMHRI approval for the extension of the study and have applied for an amendment through TMHRI. Please see enclosure indicating continuing approval from TMHRI.

You can reach me by phone at 713-44-4527 or 281-513-7059 or by e-mail at rpine@tmhs.org or rosiepine1@gmail.com.

Thank you for your time. I look forward to hearing from you.

Sincerely,



Rosemary Pine