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# FRONT-LINE REGISTERED NURSE JOB SATISFACTION AND PREDICTORS: A META-ANALYSIS FROM 1980 – 2009

by

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
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## ABSTRACT

Front-line registered nurses (RNs) make up the workforce that directly affect the care of patients in a variety of different healthcare settings. RN job satisfaction is important because it is tied to retention, organizational commitment, workforce safety, patient safety, and cost savings. The strongest predictors have been difficult to determine because workplaces differ, numerous tools to measure satisfaction exist, the workforce is diversified by generations and work positions, and ongoing policy changes directly impact the work of the front-line RN. The strength and stability of the workforce depends on an accurate understanding of the predictors of job satisfaction for the front-line RN. The purpose of this study was to comprehensively, quantitatively examine predictors of front-line RN job satisfaction from 1980-2009 to provide overarching conclusions based on empirical evidence. Of interest was: the (1) estimation of large, moderate, and small predictor summary effect sizes; (2) assessment of predictor differences among decades (i.e., 1980s, 1990s, and 2000s); (3) identification of causes for predictor differences among studies (i.e., moderators); and (4) investigation of predictor differences between generations (i.e., Baby Boomers, Generation X, and Millennials).

A non-a priori meta-analysis approach was guided by inclusion and exclusion criteria to review published and unpublished studies from 1980–2009. The search process identified 48 published and 14 unpublished studies used for analysis. Within the studies that met inclusion criteria, 27 job satisfaction predictors met inclusion for analysis. Studies were coded for Study Characteristics (e.g., Year of Publication, Country of Study) that were needed for moderator analysis. Predictors were coded for data that were necessary to calculate predictor summary effect sizes (i.e., r, n). Coding quality was maximized with a coding reliability scheme that included the primary investigator (PI) and secondary coder. A random-effects model was used

to guide the calculation of summary effect sizes for each job satisfaction predictor. Publication bias was examined using funnel plots and Rosenthal's *Fail-safe* N. An analysis of variance (ANOVA) was used to evaluate predictor differences among decades (i.e., 1980s, 1990s, and 2000s). Heterogeneity among studies was calculated (i.e., Q-statistic, I-squared, and Tau-squared) to guide the need for moderator analysis. Moderator analyses were conducted to evaluate Study Characteristics as sources of predictor differences among studies, and to investigate the influence of Age (i.e., generation) on predictor effect sizes.

The largest effect sizes were found for three predictors: Task Significance (r=.61), Empowerment (r=.55), and Control (r=.52). Moderate effect sizes were found for 10 predictors (e.g., Autonomy: r=.44; Stress: r=-.43), and small effect sizes were found for nine predictors (e.g., Wages: r=.23; Staffing Adequacy: r=.19). Significant heterogeneity between studies was present in all of the 27 predictor analyses. Effect size differences were not found between decades or generations. Moderator analysis found that the sources of the difference between studies remain unexplained indicating that unknown moderators are present.

Findings from this study indicate that the largest predictors of job satisfaction for the front-line RN may be different than previously thought. Heterogeneity between studies and unidentified moderators indicate that there are significant differences among studies and more research is needed to identify the source(s) of these differences. The findings from this study can be used at the organizational, state, and national level to guide leaders to focus efforts of workplace improvements that are based on predictors that are most meaningful to front-line RNs (i.e., Task Requirements, Empowerment, and Control). Future research is needed to determine contemporary predictors of job satisfaction for the front-line RN, and the causes of heterogeneity between studies. The findings from the current study provide the critical synthesis needed to

guide educational and practice recommendations aimed at supporting job satisfaction of front-line RNs, thereby, maintaining this integral component of the healthcare workforce.

I dedicate this dissertation to my sons, Doug and Dave, who grew up and studied beside me as I worked through the PhD program, and learned the importance of perseverance and following your dream.

## ACKNOWLEDGMENTS

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| Term | Definition |
|---|---|
| *Associate's degree (AD) program* | A two-year nursing program provided by a junior college. |
| *Autonomy* | The freedom to make accountable, independent decisions about nursing care that are in the best interest of the patient and free from fear of reprimand (Kramer & Schmalenberg, 2008b). |
| *Baccalaureate degree nursing (BSN) program* | A four-year degreed nursing program. |
| *Comprehensive meta-analysis (CMA)* | A meta-analysis software program. |
| *Conditions for Work Effectiveness Questionnaire II (CWEQ-II)* | A tool that measures nurses' perceptions of their access to the six elements of structural empowerment (i.e., access to opportunity, information, support and resources, and informal and formal power; Laschinger & Finegan, 2005). |
| *Control*<br>*Control over practice*<br>*Control over nursing (CNP)* | The authentic influence that front-line registered nurses (RNs) have in their employment life that is demonstrated through decisions that affect daily work, standards, policies, equipment, patient/staff ratios, and workload (Kramer & Schmalenberg, 2004; Kramer et al., 2008). |
| *Distributive justice* | The perceived fairness of outcomes or resource allocations (Greenberg, 1990). |
| *Effect size* | A calculated number that quantifies the relationship between two variables. |
| *Empowerment* | The self-authority and responsibility over work that comes from access to information, support, resources, and growth opportunities (Kanter, 1977; Laschinger & Finegan, 2005). |
| *Essentials of Magnetism (EOM)* | A tool to measure job satisfaction through dimensions including CNP, autonomy, clinical competence, support for education, nurse-manager support, RN/medical doctor (MD) relationships, cultural values, and adequate staffing (Kramer & Schmalenberg, 2004). |
| *Forest plot* | A graphical and numerical representation of meta-analysis data. |
| *Funnel plot* | A visual representation of assessed publication bias. |
| *Front-line RN* | The direct care or staff RN. |
| *Heterogeneity* | The statistically calculated differences between studies. |

| Term | Definition |
|---|---|
| *Home Healthcare Nurses Job Satisfaction Scale* (*HHNJS*) | A 30-item tool to measure home healthcare nurses' satisfaction (Ellenbecker, Byleckie, & Samia, 2008). |
| *Index of Work Satisfaction (IWS)* | A 44-item, two-part tool to measure job satisfaction through dimensions including attitudes with pay, professional status, autonomy, organizational politics, task requirements, and interactions (Stamps & Piedmont, 1986). |
| *Internal Employment Opportunity* | The opportunity for career advancement in the organization (Gurney, Mueller, & Price, 1997). |
| *Job Description Index (JDI)* | A 72-item tool that measures job satisfaction through dimensions including areas of work, supervision, pay, promotion, and coworkers (Spector, 1997). |
| *Job Diagnostic Survey (JDS)* | A tool that measures job dimensions, psychological states, affective responses to the job, and growth need strength (Hackman & Oldham, 1976). |
| *Job Satisfaction Survey (JSS)* | A 36-item tool that measures satisfaction through dimensions including pay, promotion, supervision, fringe benefits, contingent rewards, operating conditions, coworkers, nature of the work, and communication (Spector, 1997). |
| *Leadership style* | The process of influence whereby others are guided toward goal achievement (Kelly-Heidenthal, 2003). |
| *Leadership Support* | The RN's perception that organizational leaders value and respect their role as clinical experts by providing a workplace that supports ideals that the RN is a clinical expert and valuable asset (e.g., supports autonomy, control, and empowerment; Duffield, Roche, O'Brian-Pallas, Catling-Paull, & King, 2009; Kramer & Schmalenberg, 2004). |
| *Magnet hospital* | The quintessential model for nursing excellence and satisfaction represented by hospitals that are able to successfully recruit and retain nurses (Kramer, Schmalenberg, & Maguire, 2004; Kramer & Schmalenberg, 2004). |
| *McCloskey/Mueller Satisfaction Scale (MMSS)* | A tool to measure nurse job satisfaction through dimensions including attitudes with extrinsic awards, scheduling, family/work balance, co-workers, interaction, professional opportunities, praise/recognition, and control and responsibility (Mrayyan, 2005). |

| Term | Definition |
|---|---|
| *Minnesota Satisfaction Questionnaire (MSQ)* | A tool to measure job satisfaction through dimensions including achievement, advancement, compensation, creativity, independence, recognition, and work conditions (Spector, 1997). |
| *Moderators* | Variables that define the condition under which a relationship between the independent variable and dependent variable is strong, rather than weak or even absent (Polit & Beck, 2004). |
| *National Database of Nursing Quality Indicator-Adapted Index of Work Satisfaction (NDNQI-Adapted Index of Work Satisfaction)* | A 46-item tool adapted from Stamps IWS to measure job satisfaction through dimensions including task requirements, nurse-nurse interaction, nurse-physician interaction, decision-making, autonomy, professional status, and pay (Taunton et al., 2004). |
| *Negative Affectivity* | The tendency to experience unpleasant emotional states, which is descriptive of someone who is frustrated, lonely, angry and bad-tempered (Watson & Tellegan, 1985). |
| *Non-a priori approach* | A term that implies that the research question is answered without preconceived propositions (Sutton, Abrams, Jones, Sheldon, & Song, 2000). |
| *Nurse Job Satisfaction (NJS)* | A 35-item tool that measures job satisfaction through dimensions including job enjoyment, quality of care, care/comfort measures, job interest, time to do the job, and feedback (Norbeck, 1985). |
| *Nurse Work Index (NWI)* | A 65-item tool that measures job satisfaction through dimensions including autonomy, nurse control over practice, and relations with MDs (Laschinger, Shamian, & Thomson, 2001). |
| *Nurse Work Index-Revised (NWI-R)* | A revised version of the NWI that selected 56-items to measure job satisfaction (Li et al., 2007). |
| *Oligopsony* | A market situation in which each of a few buyers exerts a disproportionate influence on the market (Merriam-Webster, n.d., para. 1). |
| *Organizational Commitment* | A broad term that involves the loyalty an employee has with an employer. |
| *Outside Employment Opportunities* | The opportunities for jobs in local geographic areas (Price, 2001). |

| Term | Definition |
|---|---|
| *Positive affectivity* | A dispositional tendency to experience pleasant emotional states, which is descriptive of someone who is attentive, active, inspired, friendly, and forgiving (Watson & Tellegan, 1985). |
| *Primary study* | A study where the authors directly participated and the data originated. |
| *Practice Environment Scale (PES)* | A 31-item tool derived from the NWI to measure hospital nursing practice environment through 5 subscales including nurse participation in hospital affairs, quality of care, nurse manager ability, staffing and resources, and RN/MD relationships (Lake, 2002). |
| *Publication bias* | The unbalanced representation of findings caused when only published studies are included in an analysis because published studies are more likely to report higher effect sizes (or significant results) than unpublished studies (Borenstein, Hedges, Higgins, & Rothenstein, 2009). |
| *RN* | A nurse that graduated from an approved nursing program at a college or university, and passed a national licensing exam. |
| *RN/RN Relationship* | The relationship RNs have with each other in the work environment. |
| *RN/MD* | The relationship between RNs and MDs described from a high quality relationship (i.e., collegial) to the lowest type of relationship (i.e., adversarial; Kramer & Schmalenberg, 2004). |
| *Routinization* | The degree to which jobs are repetitive. |
| *Staffing Adequacy* | A predictor defined as having enough nurses to ensure quality patient care (Kramer & Schmalenberg, 2004). |
| *Stress* | External forces that threaten the internal equilibrium of an individual. RNs experience stress through physical and psychological strain, role conflict, and frustrations created in the work environment (Gray-Toft & Anderson, 1981; Zangaro & Soeken, 2007). |
| *Staff Satisfaction Scale (SSS)* | A 41-item tool that measures job satisfaction through dimensions including task requirements, pay, organizational requirements, interaction, autonomy, and job prestige or status (Hall, VonEndt, & Parker, 1981). |

| Term | Definition |
|---|---|
| *Summary Effect Size* | The overall weighted mean of effect size for each predictor/job satisfaction relationship. A summary effect is calculated for each predictor /job satisfaction relationship (Borenstein et al., 2009). |
| *Task Requirements* | Things that must be done regularly as part of the job (Stamps & Piedmont, 1986). |
| *Task Significance* | The impact a job has on other people or job valuation (Chaboyer, Williams, Corkill, & Creamer, 1999; Spector, 1997). |
| *Time to care* | Having the time to give quality emotional and physical care to patients and family members. |
| *Variety* | A property of the job that reflects the number of task elements within the job. |
| *Workload* | The ratio of unit size to mean number of beds filled or patients seen per day (Blegen & Mueller, 1987; Weisman, Alexander, & Chase, 1980). |

# CHAPTER ONE: FRONT-LINE REGISTERED NURSE JOB SATISFACTION AND PREDICTORS OVER THREE DECADES

## Overview

Nursing is a fast-paced, labor-intensive work environment with a history of cyclical shortages. Nowhere is this more apparent than in the front-line register nurse (RN) workforce (Buerhaus, Staiger, & Auerbach, 2009; Kimball & O'Neil, 2002). These RNs at the bedside care for the most acutely ill patients in a work environment where the workload is physically and emotionally exhausting, the workplace is chaotic and unpredictable, compensation for work is low, respect from administrators and MDs is deficient, and shortages are recurrent (Kimball & O'Neil, 2002).

Workforce instability and the factors associated with work satisfaction have been topics of study for decades as the work environment has evolved in response to changes in policy, technology, and patient population (Aiken, 1982b). A review of the literature yielded empirical data on job satisfaction as early as 1940 (Nahm, 1940), but examination of the predictors of a satisfied workforce and those that contribute to dissatisfaction began in earnest in the 1980s and continues to present. However, to date, there has not been thorough review of this literature, and it is unclear which predictors of satisfaction are the most significant, and what factors are decade specific or transcend decade differences. Such insight could provide data to healthcare organizations to promote changes tailored to meet the satisfaction requirements of a changing, multigenerational nursing workforce.

An examination of literature from the last two decades of the 20th century and first decade of the 21st century revealed the importance of job satisfaction and the negative consequences of dissatisfaction in the ever-changing workforce and work environment.

Synthesis of the predictors of job satisfaction is difficult because of the study population, unique working environment, and vast number of satisfaction measures. This paper will discuss (a) the consequences of job dissatisfaction and importance of satisfaction; (b) decade-specific demographic (e.g., age, gender, educational preparation) and socioeconomic factors (i.e., healthcare payment reform, wages, workplace violence, and changes in patient populations) that influence the work environment; (c) challenges of data synthesis over the decades; and (d) synthesis of predictors of satisfaction through three decades (1980, 1990, and 2000).

## Consequences of Job Dissatisfaction and Importance of Satisfaction

### *Job Dissatisfaction*

The cost of job dissatisfaction can be measured by increased turnover, decreased patient safety, reduced workforce safety, diminished patient satisfaction, and a workforce with ongoing frustration (Clarke, Sloane, & Aiken, 2002; Cowin, 2002; Florida Center for Nursing [FCN], 2009; Halfer & Graf, 2006; Hayhurst, Saylor, & Stuenkel, 2005; Kutney-Lee et al., 2009; Neistadt & Murphy, 2009; Rondeau & Wagar, 2006; Wandelt, Pierce, & Widdowson, 1981). There appears to be a trend of decreased job satisfaction, evidenced by a comparison of findings reported in the past three decades (Blegen & Mueller, 1987; Biviano, Fritz, & Spencer, 2004; Weaver, 1980). In 1987, Blegen and Mueller reported RNs were more satisfied than the average worker. In 2004, Biviano et al. (2004) reported the U.S. nursing workforce represented a 15% lower satisfaction rate than the average worker. Job satisfaction was lowest for RNs who worked in nursing homes and hospitals.

Diminished satisfaction with the job of nursing is not unique to the United States. Similar concerns have been raised in Taiwan, China, Australia, Canada, England, Scotland,

Germany, and Korea (Aiken et al., 2001; Cavanagh, 1992; Chu, Lee, Hsu, & Chen, 2005; Duffield, Roche, O'Brian-Pallas, Catling-Paull, & King, 2009; Hu & Liu, 2004; Seo, Ko, & Price, 2004; Tovey & Adams, 1999). Healthcare settings in which low satisfaction levels have been reported include acute care hospitals, occupational health, home, community health, and extended care facilities, and school nurse settings (Aiken et al., 2001; Conrad, Conrad, & Parker, 1985; Ellenbecker, Samia, Cushman, & Porell, 2007; Foley, Lee, Wilson, Cureton, Canham, 2004; Junious et al., 2004; Rondeau & Wagar, 2006; Tyler et al., 2006). The problem of diminished job satisfaction is widespread.

Voluntary turnover as a consequence of diminished job satisfaction was documented in the 1980s (Weisman, Alexander, & Chase, 1980, 1981). Turnover continues to foment consequences of lost productivity, increased hiring and training costs, and low return on the investment costs accrued through training of nurses (Aiken et al., 2001; Aiken, Clarke, & Sloane, 2002; Jones, 2004, 2005; Kramer, 1974; Rambur, Palumbo, McIntosh, & Mongeon, 2003). In underdeveloped countries, the problem of turnover is marked by nurses immigrating to more developed countries in search of higher wages and better career opportunities (Buchan, 2002). In developed countries, turnover exacerbates the nursing shortage by compounding the stress on an aging workforce challenged to care for an aging, complex patient population with rapidly changing technology.

The turnover rate for new graduate nurses is as high as 60% within the first two years of acute care employment for reasons including staffing shortages, stress, and insufficient managerial support, all of which are linked to job satisfaction (Bowles & Candela, 2005; Kramer, Schmalenberg, & Maguire 2004; Mills & Mullins, 2008). An average one-year

turnover rate as high as 55.4% for RNs has been found in nursing homes (Castle & Engberg, 2005).

Replacement costs for one RN can be as high as $67,100 due to hiring expenses, lost productivity, and advertisement (Jones, 2005). In Florida, spending attributed solely to annual nurse turnover exceeded $1.4 billion for fiscal year 2006-2007 (FCN, 2009). Turnover creates a trickle-down effect. A revolving door, whether instituted by management or staff, threatens job satisfaction of nurses because in addition to being tasked with orienting recent hires, RNs must also care for the sickest of patients while new graduates become clinically proficient and experienced new hires acclimate to the work environment.

An unstable, inexperienced workforce can erode the quality of patient care (Kanai-Pak, Aiken, Sloane, & Poghosyan, 2008). Dissatisfaction in nursing jobs result in poor organizational climates and increased reports of intention to leave, which can create risk factors associated with job-related injuries (Clarke et al., 2002). On-the-job injuries contribute to decreased productivity, diminished satisfaction of healthy staff, and increases in disability claims, workers' compensation costs, and staff stress.

### *Job Satisfaction*

Workforce satisfaction maintains staff stabilization, promotes engaged and fulfilled employees, and is a cost-effective and desirable objective (Cipriano, 2002; Kramer, 1974; Kramer & Schmalenberg, 2005). Increases in nursing satisfaction result in more reports of intent to stay in both acute care and nursing home settings (Beecroft, Dorey, & Wenten, 2008; Hays, All, Mannahan, Cuaderes, & Wallace, 2006; Karch, Booske, & Sainfort, 2005; McCarthy, Tyrrell, & Lehane, 2007; Tourangeau & Cranley, 2006). Satisfaction can enhance the working

experience by minimizing job tension and increasing organizational commitment (H. L. Smith, Hood, Waldman, & Smith, 2005), which can improve enthusiasm, positive affectivity, and personal motivation (Chu et al., 2005; Simpson, 2009). In staff positions, job satisfaction is correlated with the self-perception of effective care, which includes comforting patients, making a difference, educating, and providing patient advocacy, all of which are attractive qualities to potential nurses and the general public (Rheingans, 2008).

## Decade-Specific Factors that Influence Work Environment and Predictors of Satisfaction

Since 1980, the front-line nursing workforce has experienced societal and economic changes associated with predictors of satisfaction. A historical synopsis of changes in demographics, healthcare payment reform, wages, violence in the work setting, and patient population provides a backdrop to situational differences that can be linked to findings about workplace perceptions and satisfaction predictors. The atypical role of social and economic influences over predictors of satisfaction for front-line RNs is presented against this background.

### *Demographic Changes*

Demographic changes in the nursing population over time can be attributed to societal shifts and professional influence. Independent variables associated with nursing job satisfaction include age of worker, gender, and educational preparation (Buerhaus, 2008; Haase, 1990; Kimball & O'Neil, 2002). In 1980, nurses between the ages of 25 and 29 represented the largest population (25%) of RNs in the workforce (Biviano et al., 2004). In 1988, half of the working population of RNs was less than 38 years of age. By 1996, the population of nurses was beginning to show its age, with less than 10% of RNs under the age of 30, and 33% of RNs

between the ages of 40 and 50, and 44.8% under the age of 40 (Health Resources and Services Administration [HRSA], 1996, 2002, 2010a, 2010b). In 2000, only 9.1% of RNs in the workforce were under the age of 30 (HRSA, 2002). By 2004, the largest age group of RNs was 45-49 years of age, and the median age was 46 years. In 2008, the largest age group (16.2%) was 50-54 years of age (HRSA, 2010a, 2010b). Percentages of older RNs have continued to rise because younger nurses have either failed to join or quickly left the workforce. The decline in new RNs joining the nursing workforce has been projected to continue through 2020 (HRSA, 2002).

The three decades investigated relative to job satisfaction of RNs were marked by dramatic changes in the educational preparation of nurses. In 1980, more than 63% of licensed RNs received their initial nursing education in a diploma program, 19% from an associate's degree (AD) program, and 17.6% from a baccalaureate degree program (HRSA, 2010a, 2010b). In the 1990s, numbers of diploma graduates in the workforce declined, but the numbers of baccalaureate degreed nurses increased. By 1996, 27.2% of nurses were diploma degreed, 31.8% had earned an AD, and 31.3% had a baccalaureate nursing degree ([BSN] HRSA, 2010a, 2010b). As of 2008, RNs with an AD continued to make up the majority (45.4%) of employed nurses, followed by RNs with a BSN (34.2%) and diploma (20.4%); (HRSA, 2010a, 2010b).

Shifts in gender over the decades are far less dramatic than those of age and educational preparation. In 1980, less than 3% of the nursing population was male RNs. The population of male RNs rose to 6% by 2000 and in 2008, men made up over 7% of employed RNs. However, the men that remain in front-line staff positions may not be increasing when other RN positions are considered in the calculation of men in the workforce. Of the 7%, men in staff positions almost half of the male RNs employed are nurse anesthetists (HRSA, 2004, 2010a).

### *Healthcare Payment Reform Initiatives*

Payment reform initiatives have been implemented over the decades in response to rising healthcare costs and major changes in state and national health policies. These initiatives have placed increased financial pressures on healthcare organizations, and the effects of these pressures have been felt by the hospital workforce. The impact was particularly keen on front-line RNs, a group that comprises the largest personnel division in hospitals (Byers & Unruh, 2002; Fagin, 2001; Pulcini, Neary, & Mahoney, 2002).

Prior to World War II, most health care in the United States was privately funded. Dramatic changes were put in place after World War II, when the Social Security Act, Medicare, and Medicaid increased public access to health care (Aiken, Blendon, & Rogers, 1981; Pulcini et al., 2002). These governmental policy changes marked the beginning of a healthcare environment that was increasingly complicated by rising acuity, technological advancements, longer life expectancy, and a focus on community-based care, home health care, and health maintenance. Nurses continued to be instrumental providers of patient care (Institute of Medicine [IOM], 2004).

In the mid-1990s, changes in healthcare reimbursements led to the restructuring of hospitals and the merging of services, resulting in less satisfactory working conditions for RNs. Cost-cutting measures produced shortened hospital stays and increased patient/nurse ratios. The effects of changes were experienced in all nursing work environments including acute care, home health, extended care, and long-term care (Fagin, 2001). At that time, the healthcare system was described as decentralized and task-oriented; daily practices such as charting were attached to reimbursement requirements and institution accreditation, a perceived seal of

approval as acknowledgements of loss of life and the cost of healthcare errors were revealed in reports by the IOM (1999, 2001).

A renewed focus on patient safety, which took hold in the first decade of the 21st century, increased the RN's documentation burden when The Joint Commission (2011) established its annually updated National Patient Safety Goals program. Reporting requirements matched performance goals tied to patients' rights, education, infection control, medication management, and medical error prevention, holding healthcare institutions increasingly accountable for patients' healthcare outcomes. The responsibility for compliance is routinely placed on the shoulders of an already stressed front-line nursing workforce. For example, the aim of one goal is to reduce the risk of patient harm resulting from falls, and requires repeated documentation of fall assessments throughout the working shift. The aim of another goal is to accurately and completely reconcile medications as patients are admitted to the healthcare facility, and pass from one area of clinical care to another, particularly when their requirements for care increase or decrease. The process of medication documentation falls mainly on RNs because they initially document the list of home medications and reconcile the list with in-patient prescribed medications across the continuum of care (e.g., from emergency department to intensive care to progressive care). This information-collection/verification process can be time-consuming when chronically ill and noncompliant patients are uncertain of the names and dosages of their numerous medications.

### *Wage Changes*

Just as societal evolution and healthcare policies influence workforce demographics and the workplace, wages can be driven by healthcare economics and labor market adjustments

precipitated by policy changes. Nursing wages can be linked to the ebb and flow of the nursing shortages and are affected by policy and reimbursement changes, as well as labor market influences. Wage injustices are exposed in several ways when RN pay is compared to other paraprofessional positions and inflation is factored into the equation.

First, national policy changes have affected the division of nursing in healthcare institutions. Nurses provide the bulk of the labor-intensive, expert care required for acutely ill patients. The nursing division is particularly vulnerable to economic changes because wages are the most visible component of the budget, and have long been used to control hospital expense (Aiken et al., 1981; American Hospital Association [AHA], 2003). In the late 1980s and 1990s, cutbacks in the nursing division were a common method of cost containment in response to reductions in reimbursement under the Medicare program, a result of passage of the Balanced Budget Amendment (Mason, Leavitt, & Chaffee, 2002). According to Buerhaus et al. (2009), real earnings from 1992 through 2000 stagnated or dipped with the onset of managed care, which suggests that national health spending, affected by policy, depressed nurses' earnings.

Second, nursing wages have not only been affected by policy changes that forced hospitals to implement cost containment strategies, but also by the labor market and the availability of workers. Both payroll limitations and a ready supply of workers can serve as cost containment measures. In freely competitive markets where the supply and demand of employees are balanced, wages typically increase to attract workers and labor shortages do not exist. The job market for RNs is unique because most are RNs are employed by healthcare organizations such as hospitals (HRSA, 2010a, 2010b) and options are limited by the number of hospitals in any geographic area. Organization mergers reduce the number of employers with whom to choose employment. Consequently, the labor market for nursing is affected by

*oligopsony* (n.d.): the limited number of healthcare organizations offering employment for the majority of front-line nurses in a geographical area (Aiken, 1982a; Unruh & Spetz, 2007).

Unlike other industries that compete for workers, hospitals in the same geographic areas experience little competitive pressure to increase nursing salaries to match inflation. Salaries that are not adjusted to match inflation translate into stagnant wages, which can lead to dissatisfaction and RN shortages (Aiken et al., 1981; HRSA, 2010a, 2010b). In the past, healthcare institutions within same demographic areas that have experienced severe, prolonged shortages found that increased wages can lead to growth in RN employment and decreases in vacancy rates (Buerhaus et al., 2009).

Nurses have been aware of depressed earnings over the decades, and have voiced their diminished satisfaction regardless of whether wage containment is the result of policy or labor market economics (Donovan, 1980; Ernst, Franco, Messmer, & Gonzalez, 2004; McNeese-Smith, 1999; Seo et al., 2004; Wandelt et al., 1981). In the late 1970s and 1980, nursing wages were perceived as depressed; pay was on a par with less educated secretaries, and lower than many female-dominated professions including teaching and physical therapy (Aiken et al., 1981; HRSA, 2010a, 2010b). Wages for RNs were reported at $17,000 annually and differed from nurses' aides by only approximately 29% (HRSA, 2010a, 2010b). Increases in nursing wages in the early 1980s were met by a more satisfied workforce and a decline in nurse vacancy rates (Aiken, 1982a; Aiken et al., 1981).

Annual wages for RNs ranged from $37,000 in 1992 to $42,000 in 1996. Over 80% of nurses were employed, with less than half employed part-time. By 2008, earnings had risen 15.9% since 2004 and the average salary was $66, 973. However, when adjusted for inflation, these wages represented only a 1.7% increase from average real inflation based on the 1980

inflation adjustment (HRSA, 2010a, 2010b), and earnings only slightly outpaced inflation. Nurses' wages continue to be relatively low when compared to other professionals. This disparity is important when the cost of living is considered, as well as the value that is placed on the nurses' work because remuneration represents the value that society assigns to an occupation (Johnston, 1991). Low wages may be perceived negatively from an economic and emotional perspective, and these perceptions may affect satisfaction levels.

### *Violence in the Workplace*

Unlike copious findings of consistently depressed wages over a period of three decades, the violence present in the RN's workplace has not been widely discussed in the literature. Violence in the workplace became a popular topic at the turn of the 21st century. In the RN's workplace, violence is characterized by verbal and physical abuse, primarily from patients, family members, visitors, and medical doctors (MDs). Harm to the front-line RN is multifaceted. Physical abuse can cause injury, posttraumatic stress disorder, or transmission of blood-borne pathogens (e.g., HIV/AIDS and hepatitis). Verbal abuse can cause fear, intimidation, or lack of trust. Findings indicate that violence toward healthcare providers in general and RNs in particular is increasing (National Advisory Council on Nurse Education and Practice [NACNEP], 2007; Stokowski, 2010).

In the 1980s and 1990s, studies of workplace violence were limited. Articles discussed violence against RNs by MDs, and patients in the emergency department or psychiatric units (Clunn, 1984; Kurlowicz, 1990; Murphy, 1988; Pisarcik, 1981). The focus of these articles was strategies to recognize, limit, and diffuse violent situations that were considered part of the job of an RN. In the first decade of the 21st century, there has been increased interest in examining the

incidences and consequences of violence against front-line RNs. Reasons attributed to this growing interest are the prevalence of handguns, high numbers of patients presenting with alcohol and drug abuse problems, perceived availability of drugs at hospitals, low staffing levels, trends of releasing acute and chronically mentally ill patients from facilities without adequate follow-up, and the growing number of patients diagnosed with dementia and Alzheimer's disease (Stokowski, 2010).

Nurses are the most assaulted group of workers in the American workforce, with violence taking the form intimidation, harassment, stalking, beatings, stabbing, and shootings (NACNEP, 2007). Nurses working in intensive care units, emergency departments and home health agencies provide examples. In the intensive care environment, 59% of nurses reported having personally experienced verbal abuse within the past year, and 20.2% experienced physical abuse (Ulrich et al., 2009). In the emergency room, RNs are particularly vulnerable to violence because the department is open to all comers, around the clock, every day of the year. Many times, RNs are the first to respond to violent, intoxicated, drug-seeking, and distressed patients and family members. In a national Emergency Nurses Association survey (as cited in Gacki-Smith et al., 2009) administered to 3,465 RNs, 23% percent of the respondents reported having experienced physical violence over 20 times during the past three years, and almost 20% reported over 200 incidences of verbal abuse during the same period of time. The home health care setting is no better. Canton et al. (2009) found that 63% of RNs reported at least one violent experience during their employment. Violence was experienced in the form of verbal abuse (58.9%), physical harm (16.3%), theft (8.9%), and physical assault (3.3%).

Reports of violence and its effect on the workforce may be inaccurate. Most nurses do not report episodes of violence to administrative staff because support is insufficient or may be

viewed as RN incompetence or weakness (Chapman, Styles, Perry, & Combs, 2010; Gacki-Smith et al., 2009; NACNEP, 2007). The increase in incidences and severity of workplace violence is particularly important as a predictor of job satisfaction.

### *Patient Population*

The period from 1980 to 2010 was marked by increasing complexity of the patient population. Factors that increase the complexity of the patient population include technological advances, longer life expectancies, societal changes, and the rapid development of medications treatments and procedures. Technological advancements have led to longer life expectancies, which have compounded the difficulty of the RN's job. Responsibilities were added as new knowledge was required to keep pace with the rapid development of treatments, medications, and procedures that were introduced into the RN's workplace.

In the 1980s, the average life expectancy was approximately 72 years for men and 78 years for women. In the 21st century, life expectancy is 76 years for men and 82 years for women, and the population over 65 years of age represents 12% of the U.S. population. Although people in the United States are living longer than their predecessors, about 80% of all seniors report at least one chronic health condition (comorbidity), and 50% report at least two chronic health conditions. Obesity is considered a comorbidity, with rates of obesity increasing in older people worldwide (HRSA, 2010a; National Institute on Aging [NIA], 2006; World Health Organization [WHO], 2006).

The advances in technology that have allowed people with chronic diseases to live longer have introduced complex care issues for front-line RNs. Care for a patient's comorbid conditions may be unrelated to the primary diagnosis, requiring additional time and effort. The

nursing care associated with comorbid conditions has increased over time (Agency for Healthcare Research and Quality [AHRQ], 2002). For example, in the 1980s, a typical patient admitted to an acute care hospital with pneumonia would typically have an unremarkable medical history (e.g., past minor surgeries, hypertension). Typical medical care would likely have included supportive treatment of the infection to minimize complications. The RN was familiar with the medical routine, medications, and expected outcome.

Today, the patient with pneumonia is likely to be over the age of 65 and have comorbidities that include obesity, atrial fibrillation, hypertension, congestive heart failure, and diabetes (Levit, Wier, Stranges, Ryan, & Elixhauser, 2009; NIA, 2006). Care for the patient with pneumonia is accomplished with consideration given to all comorbidities. The RN must be familiar with antibiotic therapy as well as multiple classes of hypertensive and congestive heart failure medications (e.g., calcium channel blockers, Angiotensin Converting Enzyme [ACE] inhibitors, diuretics, and beta blockers), oral/injectable/pump-delivered insulin, oral anti-diabetic agents, and oral, intravenous, and subcutaneous anticoagulants. Obesity is an added concern in terms of potential pulmonary, nutritional, mobility, and potential skin breakdown issues that must be addressed as part of comprehensive patient care administered by the RN. Complexity of patient care can influence predictors of satisfaction including workload, staffing adequacy, and sufficiency of supplies.

## Challenges of Data Synthesis over the Decades

Synthesis of three decades' worth of research findings regarding RN job satisfaction is problematic because of inconsistencies in both study methodologies and across decades. Inconsistencies in methodology create opportunities for unrecognized moderating variables to

complicate understanding of job satisfaction. *Moderators* are variables that define the condition under which a relationship between the independent variable (IV) of predictor and dependent variable (DV) of satisfaction (Polit & Beck, 2004) is strong, as opposed to weak or even absent. When moderators are not considered, relationships might be missed, making it difficult to discern a pattern across a seemingly inconsistent set of findings.

Inconsistencies in methodologies can be grouped into four areas. First, changes in workforce demographics, the workplace, and wages all contribute to differences in participant and working conditions across settings and time periods. These changes might have an impact on the ability of the researcher to replicate findings across settings or time periods, resulting in conflicting findings. For example, Seo et al. (2004) found that workload contributed to the variance for job satisfaction, while Kovner, Brewer, Wu, Cheng, and Suzuki (2006) found that workload did not contribute to the variance in job satisfaction. The participants in these studies differed greatly with respect to both country and employment setting; those in the study by Seo et al.(2004) included acute care staff RNs in Korea, whereas those in the study by Kovner et al. (2006) included RNs working in metropolitan statistical areas (areas in and around metropolitan areas) in the United States. The RNs in the study by the Kovner et al. (2006) worked in more than one setting (e.g., hospital, nursing home) as well as in various positions (e.g., manager, consultant, instructor, staff). Workforce or workplace demographics may have a moderating effect of promotional opportunity in job satisfaction.

Second, variation in study participants with respect to RNs' roles further contribute to unrecognized differences in participants across studies. Participants may represent staff, educators, leadership, and advanced practice (Blegen & Mueller, 1987; Bucknall & Thomas, 1996; Cavanagh, 1992; Conrad et al., 1985; Ellenbecker, Boylan, & Samia, 2006; Karsh,

Booske, & Sainfort, 2005; Kovner et al., 2006; Sveinsdóttir, Biering, & Ramel, 2006; Zurmehly, 2008). Tovey and Adams (1999) found that satisfaction predictors are perceived differently according to practice position (e.g., management, clinical, educator). However, researchers (e.g., Clarke, 2007; Donovan, 1980; Ingersoll, Olsan, Drew-Cates, DeVinney, & Davies, 2002; Manojlovich, 2005; Taunton et al., 2004; Yaktin, Azoury, & Doumit, 2003) did not examine how their results might vary as a function of practice position in sample subgroups.

Third, inconsistencies in the predictor variables included in the study confound existing population differences across studies. Some studies have tested over 20 predictors of job satisfaction (Kovner, Brewer, Greene, & Fairchild, 2009; Kovner et al., 2006). Others measured few predictor variables because of the job satisfaction measure used in the study (Best & Thurston, 2004; Shaver & Lacey, 2003; Tervo-Heikkinen, Partanen, Aalto, & Vehvilainen-Julkunen, 2008). Because the same predictor variables are not represented in every study, the most important predictors of one study might not be represented in another study. For example, Best and Thurston (2004) found that autonomy and wage were the most important predictors of job satisfaction when professional status, interactions, task requirements, and organizational policies were considered. Shaver and Lacey (2003) found that short-staffing was the most influential predictor of job satisfaction when workload, tenure, setting, and commitment were considered.

Finally, variations in the measurement of job satisfaction and how these measures are scored compound the complexity and potential for inconsistent findings. Some measures calculate satisfaction two ways: dimensions of the satisfaction scale can be calculated as independent scores, and a total score for satisfaction can be calculated. For example, Hoffman and Scott (2003) examined the effect of work shift patterns on work satisfaction; satisfaction of

the independent variable (8-hour, 12-hour shifts) was measured using the Index of Work Satisfaction (IWS). The measure components or dimensions (i.e., autonomy, professional status, organizational requirements, pay, task requirements, job status, and interaction) were independently calculated for significant effect from shift worked. The findings revealed that the 12-hour RNs derived significantly more satisfaction from professional status than the 8-hours RNs. Additionally, an overall job satisfaction value was calculated from summative scores to reflect an overall sense of satisfaction. However, when total scores of 8-and 12-hour shift RNs were analyzed, significant differences were not found. The findings suggest that job satisfaction differences exist between the work shifts, but the total satisfaction scores are not significantly different. These findings make interpretation and synthesis of results challenging.

Differences in job satisfaction measures are also problematic because these measures can differ in terms of the theoretical framework guiding them which in turn can have implications for which predictor variables are measured in a particular study. Some studies used satisfaction measures that are not based on a theoretical framework (Burke, 2003; Shaver & Lacey, 2003). Others used measures with satisfaction predictors rooted in a variety of social and psychological theories such as those of Maslow (1943) and Hertzberg (e.g., McCloskey/Mueller Satisfaction Scale [MMSS], Index of Work Satisfaction [IWS]), and Hackman and Oldham's (1976) Job Characteristics theory (e.g., Job Diagnostic Survey (JDS)). Refer to Appendix B for a table of satisfaction measures and frameworks by theory and Appendix C for discussion of these measures and their theoretical basis.

## Synthesis of Predictors of Satisfaction over Three Decades (1980s, 1990s, 2000s)

Nursing job satisfaction predictors have been grouped in four categories: economic, sociological, individual, and psychological (Irvine & Evans, 1995). Predictors in the sociological category are subgrouped as either job characteristic or structural variables (see Appendix A). These four categories will be used to organize the satisfaction variables used in articles included in the synthesis from 1980 to 2010.

### *Economic Predictors*

Two economic satisfaction predictors (i.e., wages and employment opportunities) are discussed in the literature from 1980 to 2010. Historically, wages are discussed with respect to their impact on workforce satisfaction, turnover, and cyclical shortages (Aiken et al., 1981). Alternate employment opportunities have been postulated to have an impact on satisfaction levels because RNs might compare their current situation with attractive, alternative job opportunities, resulting in decreased satisfaction levels (Price, 2001). Wages might be a consideration for RNs when alternate opportunities are available.

#### *Wages/Pay*

The relationship between nursing satisfaction and wages was reported as early as 1980 by Donovan, and has been well documented with quantitative methods (Best & Thurston, 2004; Cameron, Armstrong-Stassen, Bergeron, & Out, 2004; Ernst et al., 2004; Hegney, Plank, & Parker, 2006; Hoffman & Scott, 2003; Hu & Liu, 2004; Selebi & Minnaar, 2007; Seo et al., 2004; Wandelt et al., 1981; Willem, Buelens, De Jonghe, 2007), and qualitative methods (Hegney et al., 2006; King & McInerney, 2006). Even so, the correlation between nursing satisfaction and wages was not consistently observed in the 1980s. For example, several studies

conducted in acute and long-term care facilities reported that wages had a significant impact on satisfaction levels (Aiken, 1982a; Conrad et al., 1985; Donovan, 1980; Everly & Falcione, 1976; Pfaff, 1987; Wandelt et al., 1981). However, other studies conducted with similar study participants found that wage had little or no relationship with satisfaction (Blegen & Mueller, 1987; Weisman et al., 1980).

There may be a least four reasons for contradictory findings regarding the importance of wages on satisfaction. First, Blegen's (1993) meta-analysis eliminated wages as a predictor variable because there were not enough studies examining wages and satisfaction to include as a predictor. Second, imprecise conceptual definitions of variables might affect study results and make conclusions inaccurate. For example, Blegen and Mueller (1987) measured the importance of wages and distributive justice. Distributive justice was described as the degree to which job rewards, pay, and benefits are dispersed fairly. Wages were defined as yearly pay. Because part of fair compensation is the amount of pay that one receives for the work he or she provides, the two variables relate to one another. However, findings revealed that distributive justice was a principle predictor of satisfaction, and wages were not.

Third, early studies used small sample sizes, creating the possibility that meaningful relationships might be missed due to a lack of power to achieve statistical significance. Fourth, differences in study participant demographic characteristics (e.g., educational backgrounds and working roles that include staff, management, and education) might act as modifiers in the predictor/job satisfaction relationship (Blegen & Mueller, 1987; Conrad et al., 1985; Donovan, 1980; Wandelt et al., 1981). The possibility of modifier influence is supported by Irvine and Evan's (1995) meta-analysis with studies from 1979 to 1993 when the correlation between pay

and job satisfaction ($r$ =.23) was found, and the large 95% credibility interval containing zero (-.13 to .60; Koslowsky & Sagie, 1993).

In contrast to the 1980s, studies conducted during the 1990s consistently found positive relationships between wages and satisfaction in acute care facilitates outpatient settings, long-term care services, and psychiatric facilities (Burnard, Morrison, & Phillips, 1999; Johnston, 1991; Kelly, 1991; Molassiotis & Haberman, 1996; Tovey & Adams, 1999). However, the relationship between wages and satisfaction appeared weaker than other factors such as autonomy, teamwork, RN/MD relationships, and supervision (Aronson, 2005) arguing against the importance of salary to job satisfaction (Cavanagh, 1992; Farrell & Dares, 1999; Stratton, Dunkin, Juhl, & Geller, 1995).

Later, in the first decade of the 21st century, results regarding the effect of pay on satisfaction were again inconsistent, which suggests that job characteristics may serve as moderators of this relationship. For example, depending on the work setting, some studies found the importance of salary was ranked behind variables such as autonomy, interaction, organizational policies, workload, and job opportunity (Best & Thurston, 2004; Seo et al., 2004), while other studies of nurses working in home health and school settings found a stronger link between wages and satisfaction with other aspects of the job. That is, when other aspects of the job are perceived as good, optimal wage satisfaction is not required for job satisfaction (Ellenbecker & Byleckie, 2005a; Junious et al., 2004). Similarly, studies involving acute care settings did not find significant correlations between pay and levels of satisfaction or found that pay and benefits were not principle satisfiers (Chu, Hsu, Price, & Lee, 2003; Chu et al., 2005; Cowin, Johnson, Craven, & Marsh, 2008; Curtis, 2007; Kovner et al., 2006; Morgan & Lynn,

2009). In other words, when many job satisfiers are examined, pay and benefits might not be the most important job characteristics that provide job satisfaction for the staff RNs.

Finally, one study found that satisfaction with pay was significantly higher for RNs who were employed for less than two years when compared to cohorts employed for two to five years, six to 10 years, or more than 10 years (Coshow, Davis, & Wolosin, 2009). Mid-career RNs were found to be the least satisfied with pay (Coshow et al., 2009). Thus, findings from the 2000-2010 decade argue for studying the effect of generation as well as the effect of setting and other predictors on the relationship between pay and job satisfaction.

### *Employment Opportunities*

The second economic predictor of satisfaction is alternative job opportunities, or local job market availability. Researchers have posited a decrease in RNs' satisfaction as opportunities for jobs outside the employing institution increase (Price, 2001). The speculation of improved work-life with less stress, increased autonomy, greater procedural justice, better pay, and elevated social support is considered with new employment prospects (Blegen & Mueller, 1987; Price, 2001). Consistent with this theorized relationship, small to moderate negative relationships between job opportunity and satisfaction have been found in studies throughout all three decades (Blegen & Mueller, 1987; Irvine & Evans, 1995; Kovner et al., 2009; Kovner et al., 2006; Seo et al., 2004). Irvine and Evans's (1995) meta-analysis found that other variables (moderators) might influence the effect magnitude.

## *Sociological Predictors*

### *Job Characteristics*

The relationship between RN satisfaction and 11 sociological job characteristic predictors will be discussed in three groups that reflect the daily work and environmental conditions of the front-line RN. The three groups are: (a) autonomy, control over practice/empowerment, leadership styles/decision-making styles, and work relationships; (b) workload/distributive justice/staffing adequacy/task requirements, violence, stress (physical and psychological), and sufficiency of support supplies and equipment; and (c) scheduling and shift work, routinization/variety, and continued educational support.

#### *Autonomy, Control over Practice/Empowerment, Leadership Styles/Decision-Making Styles, and Work Relationships*

In 1982-1983, the American Nurses Association (ANA) sponsored a study of hospitals that were able to successfully recruit and retain nurses. The hospitals were labeled "Magnet" hospitals, and the ANA identified four predictors as necessary to sustain RN satisfaction, recruitment, and retention: autonomy, control over practice/empowerment, high-quality leadership, and good working relationships (Kramer & Schmalenberg, 2005, 2008a, 2008b). These four predictors are included in the American Nurse Credentialing Center's ([ANCC], 2011) 5 Model Components and the Forces of Magnetism, and the standards for establishing and sustaining healthy work environments set forth by the American Association of Critical-Care Nurses ([AACN], 2005).

*Autonomy*

Autonomy is defined as the freedom to make accountable, independent decisions about nursing care that are in the best interest of the patient and free from fear of reprimand. Safe, effective, and holistic care depends on autonomy, which changes with technology, acuity, and the workforce (Kramer & Schmalenberg, 2004, 2008a, 2008b). A study participant in the study conducted by Kramer and Schmalenberg (2008b) described the fluidity of autonomy: "In the 1980s, refusing to give a patient a contraindicated drug was an act of heroism; in the 1990s, it was an example of autonomy; today, it's standard practice" (p. 60).

In the 1980s, conclusions about the relationship between job satisfaction and autonomy were difficult to reach because the actual definition of "autonomy" was unclear until the middle to late 1980s (Kramer & Schmalenberg, 2008b). Some older studies referred to the importance of patient care decision making, but either did not label this activity as autonomy or combined autonomy and control (Blegen, 1993; Donovan, 1980; Wandelt et al., 1981).

From 1990 to 2010, autonomy has been found to be consistently related to satisfaction in acute care, long-term care facilities, and community health settings around the world (Best & Thurston, 2004; Bucknall & Thomas, 1996; Chaboyer et al., 1999; Chu et al., 2003; Cowin et al., 2008; Ellenbecker et al., 2006; Fung-kam, 1998; Hoffman & Scott, 2003; Irvine & Evans, 1995; Johnston, 1991; Kovner et al., 2009; Kovner et al., 2006; Kramer & Schmalenberg, 2008b; McGilton & Pringle, 1999; Morgan & Lynn, 2009; Mueller & McCloskey, 1990; Stratton et al., 1995; Weisman et al., 1980; Willem et al., 2007; Zangaro & Soeken, 2007). Few studies failed to find a relationship between autonomy and satisfaction (Blegen & Mueller, 1987; Seo et al., 2004), but their findings might be partially explained by cultural practices present at the study institutions, where autonomy is restricted by the power of physicians.

Although autonomy has been consistently reported as related to RN job satisfaction, there are three main reasons why the magnitude of this relationship may be unclear. First, the effect of autonomy on satisfaction might be affected by the type of healthcare settings, such as hospital or community care facility (Conrad et al., 1985; Zurmehly, 2008). For example, community health nursing roles might require extensive autonomy because the responsibilities of these positions are vast and widespread, and work independence is a requirement of the job. This situation differs from that of the medical /surgical acute care staff nurse who is confined to the unit worked and restricted by tight schedules and time-related tasks. Therefore, the setting might be influence the level of autonomy, which affects level of satisfaction.

Second, the effect of autonomy on satisfaction might be affected by nursing roles such as those of management, educators, or staff (Ingersoll et al., 2002; Zurmehly, 2008). Front-line acute-care staff nurses are confined by unit geography, time-sensitive nursing care tasks, and specific patient care assignments. Educators and managers are less confined by the unit walls and a specific patient assignment. The responsibilities inherent in specific nursing roles might influence the effect of autonomy on satisfaction.

Third, front-line RNs nurses who work in Magnet hospitals reported significantly more autonomy than those nurses who worked in non-Magnet hospitals (Brady-Schwartz, 2005; Kramer & Schmalenberg, 2008b; Upenieks, 2003). Magnet status represents the quintessential model for nursing excellence and satisfaction. Employment in a Magnet hospital might affect the level of autonomy and consequential level of satisfaction.

*Control Over Practice/Empowerment*

*Control over practice* is the authentic influence that front-line RNs have in their employment life, and is demonstrated through decisions that affect daily work, standards, policies, equipment, patient/staff ratios, and workload (Kramer & Schmalenberg, 2004; Kramer et al., 2008). Control over nursing (CNP) through staff RN decision-making is one of the processes identified by Magnet hospital staff nurses as essential to a satisfactory work environment.

Like autonomy, studies conducted in all three decades found that control is consistently positively correlated with satisfaction (Campbell, Fowles, & Weber, 2004; Cowin et al., 2008; Ingersoll et al., 2002; Laschinger and Finegan 2005; McGilton & Pringle, 1999; Mueller & McCloskey, 1990; Zangaro & Soeken, 2007). To achieve control over practice, RNs must be given the authority and responsibility over their work, which is termed as *empowerment*.

Empowerment is experienced when work situations and relationships facilitate opportunities for employees to accomplish their work meaningfully (Kanter, 1977). Organizations are instrumental in providing the structure, support, and professional status needed to empower nurses. Empowerment provides RNs the opportunity, information, support, and resources needed to effectively govern their work environment (Kramer & Schmalenberg, 2003; Kramer et al., 2008; Taunton et al., 2004). Since January 2000, a strong link has been made between empowerment and job satisfaction (Larrabee et al., 2003; Laschinger, 2008a; Laschinger, Almost, & Tuer-Hodes, 2003; Laschinger & Finegan, 2005; Laschinger, Finegan, Shamian, & Wilk, 2001; Laschinger, Leiter, Day, & Gilin, 2009; Lautizi, Laschinger, & Ravazzolo, 2009).

*Leadership Styles/Decision-Making Styles*

*Leadership style* is the process of influencing others to accomplish goals (e.g., laissez-faire, transactional, transformational), and it guides the decision-making styles or processes used by managers and leaders (Kelly-Heidenthal, 2003). Leadership and decision-making styles have been considered important factors in RN job satisfaction since the 1980s (Blegen, 1993; Chu et al., 2003; Cummings et al., 2008; Decker, 1997; Duffield et al., 2009; Irvine & Evans, 1995; Kangas, Kee, & McKee-Waddle, 1999; Lacey, Teasley, & Cox, 2009; Lucas, 1991; Medley & Larochelle, 1995; Morrison, Jones, & Fuller, 1997; Moss & Rowles, 1997; Mueller & McCloskey, 1990; Taunton et al., 2004; Weisman et al., 1980). Transformational leadership is characterized by managerial idealized influence, inspiration, intellectual stimulation, and individualized consideration. Findings support a positive relationship between transformational leadership and empowerment, and the resulting job satisfaction that occurs when transformational leadership is present (Kimball & O'Neil, 2002; Medley & Larochelle, 1995; Morrison et al., 1997).

Decision-making processes are guided by leadership style. Participative decision making, like transformational leadership, is most desired among staff. This type of decision making has been found to produce the greatest staff satisfaction when compared to authoritarian and consultative decision-making processes (Lucas, 1991; Moss & Rowles, 1997).

*Work Relationships*

Since 1980, study findings have confirmed that front-line RNs value healthcare team relationships, which include management, colleagues, and MDs. Studies conducted in the 1980s consistently found that relationships with colleagues and management are important predictor of

satisfaction (Blegen, 1993; Blegen & Mueller, 1987; Conrad et al., 1985; Donovan, 1980; Everly & Falcione, 1976; Irvine & Evans, 1995; Kovner et al., 2009; Taunton et al., 2004). Few studies conducted during the 1980s explored the relationships between job satisfaction and RN/MD relationships.

From 1990 to 2010, tools were developed to measure RN job satisfaction. These tools included subscales to measure the impact of RN/RN and RN/MD relationships on job satisfaction of front-line nurses (Cummings et al., 2006; Ellenbecker & Byleckie, 2005b; Kramer & Schmalenberg, 2004; Mueller & McCloskey, 1990; Taunton et al., 2004). Findings of studies conducted with these tools support the positive relationship between job satisfaction and high-quality interaction with fellow RNs and MDs (Kovner et al., 2009; Manojlovich, 2005; Manojlovich & Antonakos, 2008; Rosenstein, 2002; Taunton et al., 2004; Zangaro & Soeken, 2007). Despite these findings, Rosenstein's (2002) regional study conducted with 84 VHA West Coast (a regional network of community-owned hospitals and health systems) facilities reported that over 92% of the study respondents witnessed disruptive behaviors by physicians that included yelling, raising the voice, disrespect, or condescension. This suggests that the MDs minimize or do not realize their effect on the satisfaction of RNs.

### *Workload/Distributive Justice/Staffing Adequacy/Task Requirements, Violence, Stress, and Sufficiency of Support Supplies and Equipment*

Workload/distributive justice/staffing adequacy/task requirements, violence, stress, and sufficiency of support supplies and equipment are predictors of satisfaction associated with the work environment that might be affected by societal and economic changes. Economic factors play a part in dictating staffing workload and sufficiency of supplies and equipment.

Sociological changes can affect the violence levels in the work environment. Multiple factors can influence stress levels of front-line RNs in the work environment.

*Workload/ Distributive Justice/Staffing Adequacy/Task Requirements*

Over the decades, budgetary pressures and increased acuity of the patient population has shifted the issue of front-line nurses' workload from a limited predictor of job satisfaction measured at a concrete level to a broader predictor measured at a more abstract level. For example, studies conducted during the 1980s defined *workload* as the ratio of unit size to mean number of beds filled or patients seen per day (Blegen & Mueller, 1987; Weisman et al., 1980), and satisfaction measures did not have subscales evaluating workload (Burnard et al., 1999; Mueller & McCloskey, 1990; Tumulty, Jernigan, & Kohut, 1994). Low correlations were observed between satisfaction and workload (Irvine & Evans, 1995; Weisman et al., 1981), and there was little discussion of workload with respect to RN satisfaction (Blegen, 1993; Donovan, 1980; Wandelt et al., 1981).

From the late 1990s through 2010, workload was measured more abstractly using subscales from the EOM, NWI-R, NDNQI-Adapted Index of Work Satisfaction, and the Home Healthcare Nurses Job Satisfaction Scale (HHNJSS). Workload described all labor associated with front-line patient care and included direct patient care, work added as other roles were adopted (e.g., secretarial, transportation, environmental services), paperwork, additional work resulting from technology (e.g., medications, computerized tomography [CT], magnetic resonance imaging [MRI]), and meeting family needs (Stuart, Jarvis, & Daniel, 2008).

Studies investigating the connection between workload and satisfaction yielded mixed findings when staff nurse populations were compared to diverse study populations (e.g., staff,

education, management). Qualitative and quantitative studies conducted in the United States, Canada, Taiwan, South Africa, and Korea, where the study populations were primarily staff RNs, reported findings that workload can negatively affect job satisfaction levels (Burke, 2003; Chu et al., 2005; King & McInerney, 2006; Li & Lambert, 2008; McNeese-Smith, 1999; Morgan & Lynn, 2009; Seo et al., 2004; Shaver & Lacey, 2003; Stuart et al., 2008; Tovey & Adams, 1999). Diminished quality of patient care that results from work overload can make nurses feel devalued and leave them with diminished levels of job satisfaction (Stuart et al., 2008). Other studies that included nurses in positions other than staff or front-line did not find a relationship between workload and satisfaction (Kovner et al., 2006), or found that workload did not contributed to a predictive model of satisfaction that included intrinsic and extrinsic work factors (Chu et al., 2005). Kovner et al. (2006) found that the satisfaction levels of RNs with high workloads were no different than those with low workloads. These various findings uphold the premise that workload fairness is a predictor of job satisfaction.

Workload fairness is a form of *distributive justice* (the perceived fairness of outcomes or resource allocations); (Greenberg, 1990), but this aspect of workload is not commonly studied. Some studies support the role of distributive justice and predictive models suggest that distributive justice is a determinant of staff satisfaction (Chu et al., 2003; Kovner et al., 2006). Other studies such as the one conducted by Seo et al. (2003) do not support the relationship between distributive justices and satisfaction.

Another predictor closely related to workload is *staffing adequacy*, which is defined as having enough nurses to ensure quality patient care, provide support services (e.g., respiratory treatments, and phlebotomy requirements), and allow for discussion of patient care problems with colleagues. In contrast with workload fairness, staffing adequacy is consistently positively

related to satisfaction (Cummings et al., 2008; Kramer & Schmalenberg, 2004; Scott, Engelke, & Swanson, 2008; Shaver & Lacey, 2003; Tervo-Heikkinen et al., 2008). When staffing is adequate, RNs experience job satisfaction because there is time to meet the needs of patients and provide good quality care (Aiken, Clark, & Sloane, 2002; Ellenbecker et al., 2006; Flynn, 2005; Hall & Doran, 2007; Morgan & Lynn, 2009; Perry, 2008). For example, a large cross-sectional analysis of 10,184 staff nurses in 168 hospitals found that, after adjusting for nurse and hospital characteristics, each additional patient per nurse was associated with a 23% increase in the odds of burnout and a 15% increase in the odds of job dissatisfaction (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002).

Staffing adequacy is becoming a worldwide concern. Nolan, Lundh, and Brown (1999) reported that the then-current workload was not realistic and that less than 33% of Swedish nurses and 25% of English nurses perceived staffing as adequate. Aiken et al. (2001) supported these findings when only approximately 30-40% of nurses in the United States, England, Canada, Scotland, and Germany reported believing there were enough nurses to get work done and provide high-quality care. In that study (Aiken et al., 2001), found that 83% of U.S. nurses reported an increase in the number of patients assigned to them between 1998 and 1999.

Task requirements can affect both workload and staffing adequacy, and is defined by Stamps and Piedmont (1986) as things that are done as part of a job. The IWS measurement of task requirements includes items that involve having sufficient time to deliver adequate patient care, which can be interpreted as measurement of workload. Studies report mixed findings about the importance of task requirements on job satisfaction. Some findings rank the importance of task requirements with other predictors, while others present correlational statistics. Throughout the decades, some studies report that when task requirements, autonomy, RN/MD interaction,

policies, and professional status are considered, task requirements is not a predictor of job satisfaction or is one of the least important predictors of satisfaction (Curtis, 2007; Foley et al., 2004; Fung-kam, 1998; Jansen, Kerkstra, Abu-Saad, & Van Der Zee, 1996; Tovey & Adams, 1999; Willem et al., 2007). Other more recent studies found large correlations between task significance and job satisfaction (Cowin et al., 2008; Ernst et al., 2004; Ingersoll et al., 2002).

*Violence*

In the 1980s and 1990s, few studies investigated the impact of violence on RN satisfaction (Blegen, 1993, Irvine & Evans, 1995; Tovey & Adams, 1999; Weisman et al., 1981; Zangaro & Soeken, 2007). Literature from the first decade of the 21st century indicates that violence from patients, families, physicians, managers, and fellow nurses is considered an environmental factor that has a negative impact on nurses in acute care, home care, and long-term care facilities (Ito, Eisen, Sederer, Yamada, & Tachrimori, 2001; Joint Commission on Accreditation of Healthcare Organizations [JCAHO], 2002; Karch et al., 2005; Rosenstein, 2002; Stokowski, 2010; Ulrich et al., 2006). The increasing number of studies investigating the impact of violence on satisfaction documents the extent to which violence and abuse have a negative impact on job satisfaction (Canton et al., 2009; NACNEP, 2007).

*Stress (Physical and Psychological)*

Over the past three decades, stress in the RNs' working environment has been found to be a predictor that is consistently negatively and strongly associated with job satisfaction (Aiken et al., 2002; JCAHO, 2002). For three decades, studies have found that stress is among the strongest negative predicators of satisfaction (Blegen, 1993; Irvine & Evans, 1995; Zangaro & Soeken, 2007). Stress can be caused by patient-specific aspects (e.g., patient acuity, patient age),

physical factors (e.g., dangerous workloads, short staffing, environmental pathogens, dangerous patients), and working within a deficient system (Aiken, Clarke, Sloane, Sochalski et al., 2002; Burke, 2003; JCAHO, 2002; Kimball & O'Neil, 2002; Sheward, Hunt, Hagen, Macleod, & Ball, 2005). Thus, stress might result from predictors that are linked to satisfaction and include workload pressures, staffing inadequacy, insufficient communication, and violence.

Factors nurses have identified as stressful have varied over the decades. In the 1980s, stress was characterized as being pulled in to work in unfamiliar units, shift rotation, infrequent weekends off, and mental and physical strain (Heiskanen, 1988; Wandelt et al., 1981). The most stressful factors that nurses reported in 1990 were unavailable MDs or impaired communication, shortages of resources, too little time, and time pressures (Anderson, 1996; Bartholomeyczik et al., 1992; Ehrenfeld, 1990; Webb & Pontin, 1996). Workload stressors identified in the first decade of the 21st century include excessive administrative paperwork, workload burden due to patient acuity, and work overload due to inadequate staff (Aiken, Clarke, Sloane, Sochalski et al., 2002; PricewaterhouseCoopers Health Research Institute, 2007). The IOM (2001) reported that nurses do not have time to care for patients because only 19.3% of their time was spent on patient care, while 35.3% of their time was spent on documentation, and 20.6% on coordinating care. When front-line nurses cannot spend time caring for patients the way they want to, lack of control and psychological stress can be experienced, accompanied by burnout and diminished satisfaction (Maslach, 2003). Ernst et al. (2004) supported the conclusions reached by Maslach (2003) when stress items were measured.

Stress is especially concerning for the newly graduated RN. Inexperience creates stress, which in turn results in job dissatisfaction (Ernst et al., 2004; Hoffman & Scott, 2003; Kanai-Pak et al., 2008). Reinforcing this consensus of conclusions, Bowles and Candela (2005) found that

new graduate RNs experienced stress caused by caring for acutely ill patients, unacceptable ratios of patient care assignments, and a feeling of unsafe patient care led to dissatisfaction. Dissatisfaction led to a 30% voluntary termination rate of new graduates in the first year, and 57% by the second year (Bowles & Candela, 2005).

*Sufficiency of Support Supplies and Equipment*

Studies conducted as early as 1958 describe a working environment in which equipment was not adequate and supplies were missing or not conveniently located (Hegney et al., 2006; IOM, 2004; Kimball & O'Neil, 2002; Sutherland, 1958; Tovey & Adams, 1999). Unfortunately, the studies focus on the impact of equipment and supply insufficiency on satisfaction levels were scarce during the 1980s and 1990s (Blegen, 1993; Irvine & Evans, 1995; Zangaro & Soeken, 2007). In the late 1990s and first few years of the 2000s, supply shortage was described as lack of beds, equipment, services from other departments, and delays in replies by MDs (McNeese-Smith, 1999). It is tempting to infer a connection exists, but the impact on job satisfaction is not conclusive because only two studies to date have explored the correlation between resource/equipment inadequacy and satisfaction. These two study samples differed in setting, culture, and age, making it difficult to interpret the inconsistency in findings. For example Seo et al. (2004) found that having enough resources at work did not have an impact on satisfaction in their study of southeastern Korean acute care hospitals which involved populations mean of 35 years. Penz, Stewart, D'Arcy, & Morgan's (2008) more recent study of a Canadian rural healthcare facility found that sufficient supplies explained 17% of the variance in a model of staff satisfaction, but almost 60% of the study population was over the age of 40.

### *Scheduling and Shift Work, Routinization/Variety, and Continued Educational Support*

Scheduling and shift work, routinization/variety, and continued educational support are predictors relating to the mechanics of working as an RN. Although not necessarily related to one another, these predictors help structure the role of the front line nurse.

#### *Scheduling and Shift Work*

The work schedule of RNs is unique because of the various available shifts (e.g., days, evenings, nights, and rotation), shift hours (i.e., 4-, 8-, 10-, and 12-hour options), as well as overtime, weekend, and holiday work requirements. Working erratic schedules can affect energy levels, circadian rhythms, health (hydration and diet), family life (Josten, Ng-A-Tham, & Thierry, 2003; Ruggiero & Pezzino, 2006). The effect of scheduling on satisfaction has been documented since the 1980s (Bartholomeyczik et al., 1992; Donovan, 1980; McNeese-Smith, 1999; Penz et al., 2008; Ruggiero & Pezzino, 2006; Wandelt et al., 1981). However, the specific scheduling concerns that predict dissatisfaction have not yet identified because many measures (e.g., EOM, NDNQI-Adapted Index for Work Satisfaction, and IWS) do not include items that calculate nursing satisfaction/dissatisfaction for scheduling or shift work (Cummings et al., 2006; Curtis, 2008; Kramer & Schmalenberg, 2004; Taunton et al., 2004).

Studies that have investigated the impact of schedule on satisfaction find stronger support in univariate as compared to multivariate designs. For example, studies that focused on sleep and schedules in acute care settings found that when RNs have weekends, and selected days off, job satisfaction improved (Ruggiero, 2005), which is consistent with other work regarding the negative effect of constantly changing schedules on job satisfaction (Verhaeghe, Vlerick, Gemmel, Van Maele, & De Backer, 2006). However, when multiple variables or exploratory

qualitative methods are used in studies of acute and home health RNs, findings indicate that shift time worked (i.e., 8 and 12 hours) and rotational schedules have either little or no significant effect on job satisfaction in acute and home care RNs (Ellenbecker et al., 2007; Kovner et al., 2009; Kovner et al., 2006; McNeese-Smith, 1999). This pattern of findings argues for further analysis of the link between work schedule and satisfaction in a multivariate context like meta-analysis.

*Routinization/Variety*

*Routinization* or the degree to which jobs are repetitive was one of the variables initially identified by Price and Mueller (1981, 1986) for their causal model of satisfaction as it relates to hospital nurse turnover. Their concern was that repetitive tasks can become monotonous and unrewarding to professional workers. Over the course of three decades, studies that examined the relationship between routinization and satisfaction found mixed results. Several studies including two meta-analyses found that routinization was a prominent negative predictor of satisfaction (Blegen, 1993; Blegen & Mueller, 1987; Freeman & O'Brian-Pallas, 1998; Irvine & Evans, 1995; Zangaro & Johantgen, 2009). Contrary results were found in Cavanagh's, (1992) study that concentrated on RN turnover. The sample excluded critical care units, and included only RNs with a history of turnover and worked full time. The differing findings suggest that the specific study population contributed to the positive correlation between routinization and satisfaction.

*Variety* is another predictor variable that is used to study of RN work routine. *Variety* is a property of the job and reflects the number of task elements within the job. Support was not found for an effect of variety on satisfaction during the 1980s, but research was limited to

community health settings (Conrad et al., 1985). In contemporary studies involving acute care facilities, positive correlations were found between satisfaction and job variety (Chaboyer, Williams, Corkill, & Creamer, 1999; Chu et al., 2003; Kovner et al., 2009; Seo et al., 2004). This may indicate that younger generations of nurses desire more variety in their work.

*Continued Education (CE) Support*

The nursing work environment is one of continual change; new technology is installed, new pharmaceuticals are introduced, and treatments for diseases advance. Professional development can be provided by orientation, in-service offerings, continuing and formal education, and competency-based clinical advancement. Support for continuing education is an important element of the Magnet hospital program that began through the ANCC in the early 1980s (Kramer & Schmalenberg, 2005).

In the 1980s, qualitative studies found that RNs valued opportunity for continuing education (Wandelt et al., 1981). No quantitative support for this relationship exists until the 1990s because early studies did not measure institutional/administrative support for continued education as a potential predictor of job satisfaction (Blegen, 1993; Irvine & Evans, 1995). Support for continuing education was not part of the theoretical models used to guide job satisfaction research during the 1980s until the 1990s. Since the 1990's, several studies have found a significant relationship between job satisfaction, continuing education offerings, and reimbursement for CE (McNeese-Smith, 1999; Robertson, Higgins, Rozmus, & Robinson, 1999; Stratton et al., 1995; Tervo-Heikkinen et al., 2008). However, generational expectations may moderate this relationship: Yaktin et al. (2003) conducted a multi-site study of acute care, front

line nurses in Beirut, Lebanon. Results found that younger (21-30 years) nurses reported less satisfaction with support for continuing education than did older (30+ years) nurses.

### *Structural Characteristics*

#### *Facility Type (Community, Teaching/Academic, and Long-Term), Magnet/Non-Magnet Status, and Unit Types (Intensive Care Unit [ICU], Post Anesthesia Care Unit [PACU], Oncology, and Neonatal/Pediatric Intensive Care Unit [NICU/PICU])*

Structural characteristics have been found to be predictive of job satisfaction (Hall, Doran, Sidani, & Pink, 2006; Ingersoll et al., 2002), but these characteristics may serve, at least in part, as proxy variables for environmental characteristics (e.g., stress, work-group generation, variety, violence) inherent in the organization or unit. As previously discussed, many of these environmental characteristics have been demonstrated to have an impact on satisfaction (Ernst et al., 2004; King & McInerney, 2006; Kovner et al., 2006). Structural characteristics include facility type (e.g., community, teaching), Magnet status, and unit type (intensive care, post-anesthesia care, oncology, neonatal intensive care, and pediatric intensive care). These structural characteristics are also important to consider because they correspond to differences in sample characteristics present in the job satisfaction literature, and may also serve as a proxy for differences in organizational or unit level culture.

##### *Facility Type (Community, Teaching/Academic, and Long-term)*

Front-line RNs work in settings that include acute (e.g., teaching, community, and academic) and long-term facilities, home care, and office work environments. Comparative studies are limited to the first decade of the 21st century and indicate that (a) RNs working in acute-care teaching hospitals are more satisfied than those working in community hospitals (Hall et al., 2006); (b) RNs working in offices and home health care are more satisfied than those

working in hospitals and nursing homes (Ingersoll et al., 2002); and (c) RNs in small, rural acute-care facilities are more satisfied than those working in urban facilities (Penz & Stewart, 2008).

*Magnet/Non-Magnet Status*

Magnet hospitals are designed to enable RNs to work in a positive work environment (Kramer & Schmalenberg, 2005). Evidence of the link between satisfaction and Magnet status seems to vary over the three decades from 1980 to 2009. For example, early research supports a positive link between Magnet status and RN satisfaction in acute-care facilities and nursing homes, where the organizational structure, professional practice, leadership, and style of management were perceived as superior in Magnet facilities (Aiken & Patrician, 2000; Kramer & Schmalenberg, 1991, 2005).

Research conducted since 2000 find that the effect of Magnet Status on satisfaction varies. Findings support a positive relationship between Magnet status and RN satisfaction (Lacey et al., 2009; Laschinger et al., 2003; Rondeau & Wagar, 2006; Ulrich et al., 2007). However, other findings indicate that RNs who work in Magnet hospitals do not exhibit high levels of satisfaction relative to RNs who work at non-Magnet hospitals (Brady-Schwartz, 2005; Trinkoff et al., 2010). Moreover, relationships with coworkers (RNs and MDs), scheduling, psychological demands, and support from supervisors were not found to be significantly different between Magnet and non-Magnet hospitals.

Work characteristics may vary from unit to unit in Magnet hospitals, suggesting that effects attributable to Magnet status could be confounded by unit level differences in how Magnet Hospital principles are operationalized. For example, Schmalenberg and Kramer (2008)

study of RNs ($n$ = 2,990) from eight Magnet facilities found significant differences in job satisfaction across facilities. Outpatient clinical clinics and oncology units scored significantly higher for global satisfaction than did obstetrics, operating room, and PACUs. This pattern of inconsistent results underscores the need for using meta-analysis to determine which workplace qualities contribute to high job satisfaction by RNs.

*Unit Types (ICU, PACUs, Oncology, and NICU/PICU)*

Predictors of satisfaction/dissatisfaction such as relationships between RN/MD and RN/RN, unit climate, control over nursing practice, staffing adequacy, and patient-centered values appear driven by or closely related to the type of patient care unit (Archibald, 2006; Schmalenberg & Kramer, 2007, 2009). In the 1980s and 1990s studies investigating the satisfaction of RNs between units were limited.

Studies investigating the impact of unit type on satisfaction increased in the 2000s, when unit types and hospital settings were found to contribute to RN satisfaction levels (Boyle, Miller, Gajewski, Hart, & Dunton, 2006; Ingersoll et al., 2002; Schmalenberg & Kramer, 2008). Nurses in specialty units (i.e., pediatric, NICU/PICU, and out-patient clinics) report higher satisfaction levels than those in non-specialty units (e.g., medical/surgical general unit); (Boyle et al., 2006; Cox, Teasley, Lacey, Carroll, & Sexton, 2007; Ingersoll et al., 2002; Schmalenberg & Kramer, 2007).

Furthermore, when ICUs were examined (e.g., medical/coronary intensive care [MICU], medical/surgical [MSICU], surgical [SICU], and pediatric/neonatal), findings reveal the highest satisfaction for RNs in NICU/PICU. When only adult ICUs are examined, RNs in MICUs report the highest satisfaction, followed by those in MSICUs and SICUs. Conversely, units or patient

care areas in which RNs report the lowest satisfaction include surgical services, general PACU, and emergency departments (Boyle et al., 2006; Schmalenberg & Kramer, 2008). These findings might indicate that specialization, age of the patient, and breadth of comorbidities may influence RN job satisfaction levels (Boyle et al., 2006; Schmalenberg & Kramer, 2008).

### *Individual Predictors*

#### *Age, Gender, Educational Level, and Experience*

Through the decades from 1980 to 2010, demographic data has been routinely gathered on study participants. However, only two studies were found that devoted the aims of the research to the relationship between demographics and job satisfaction (Curtis, 2008; Yaktin et al., 2003). Most studies included one or more demographic characteristics in a regression model with workplace characteristics such as sufficiency of supplies and workload (Kovner et al., 2006; Li & Lambert, 2008; Lu, While, & Barriball, 2007; Penz et al., 2008), or examined job satisfaction using multiple variables in addition to demographic characteristics (Ingersoll et al., 2002; Ning, Zhong, Libo, & Qiujie, 2009). By excluding some demographic variables and choosing others, the impact that each demographic variable has on satisfaction may be distorted or misrepresented, making the findings discussed next tentative at best and highly likely to be inconsistent.

##### *Age*

Over the decades, studies have reported mixed results about the influence of age on job satisfaction. In the 1980s and early 1990s, studies found that age was a positive predictor of satisfaction (Blegen, 1993; Irvine & Evans, 1995; Weisman et al., 1980) with Weisman et al. (1981) finding that age was highly intercorrelated with both length of employment and position

level. Little or no relationship between age and satisfaction was supported in the 1990s (Cavanagh & Coffin, 1992; Gottlieb, Kelloway, & Martin-Matthews, 1996; Jansen et al., 1996), and more recent studies have found mixed results.

Recent studies have explored whether age is related to satisfaction in newly licensed and experienced RNs, but this research has produced mixed findings. Studies with multiple predictor variables did not find that age was related to satisfaction (Cummings et al., 2008; Kovner et al., 2009; Scott et al., 2008). A small number of studies with fewer predictors found that as a nurse ages, he or she is more likely to experience job dissatisfaction (Curtis, 2008; Halm et al., 2005).

Most recent U.S. and international studies found that both younger and inexperienced nurses report lower job satisfaction than experienced older nurses (Al-Enezi, Chowdhury, Shah, & Al-Otabi, 2009; Bjørk, Samdal, Hansen, Tørstad, & Hamilton, 2007; Kanai-Pak et al., 2008; Mrayyan, 2005; Norman et al., 2005; Yaktin et al., 2003). Furthermore, studies that examined satisfaction between generations (i.e., Baby Boomers, Generation Xers, and Millennials) found that the youngest generations (i.e., Generation Xers and Millennials) were the least satisfied age groups in the workforce (Blythe et al., 2008; Widger et al., 2007; Wilson, Squires, Widger, Cranley, Tourangeau, 2008). The youngest generations also experienced the most stress, which is a strong negative predictor of satisfaction (Blegen, 1993; Irvine & Evans, 1995; Leiter, Price, & Laschinger, 2010; Widger et al., 2007). These findings suggest that there may be generational differences that influence RN satisfaction.

*Gender*

In the 1980s, studies did not extensively examine gender differences in satisfaction because of the low percentage of male RNs (Blegen, 1993; Weisman et al., 1980, 1981). Studies

that examined satisfaction with regard to gender did not meet inclusion criteria for the meta-analysis conducted by Irvine and Evans (1995). Other studies (Tovey & Adams, 1999; Tumulty et al., 1994) did not include gender data in their demographic information. Of those studies that did include gender as a component of analysis, satisfaction differences were not found (Jansen et al., 1996).

The number of men in the nursing workforce remains low, and there are generally a low number of male study participants. Still, contemporary studies occasionally find support for gender differences in job satisfaction. For example, Penz et al. (2008) found that female nurses practicing in acute-care settings in rural areas experience greater job satisfaction than their male counterparts in those same settings. However, a majority of studies found no significant relationship between gender and satisfaction (Al-Enezi et al., 2009; Bjørk et al., 2007; Cummings et al., 2008; Curtis, 2008; Kovner et al., 2006).

*Educational Level*

As with the other demographic variables, support for a relationship between educational level and job satisfaction appears mixed. In 1974, Kramer found that types of initial nursing education had a negative impact on satisfaction levels because BSN-prepared RNs held higher idealist professional expectations than did nurses with lesser educational levels (i.e., diploma, AD). Despite Kramer's findings, few studies during the 1980s supported the negative relationship between satisfaction and educational level (Blegen, 1993; Pfaff, 1987; Weisman et al., 1981), and the higher number of BSN-prepared nurses rather than the educational level itself seemed to be related to higher satisfaction levels (Weisman et al., 1981).

Studies in the 1990s either did not support a relationship between educational level and satisfaction in acute-care hospitals (Cumbey & Alexander, 1998; Decker, 1997; Tumulty et al., 1994; Weisman et al., 1981) or found a small negative correlation ($r$ = -0.18); (Cavanagh, 1992). These studies are difficult to interpret because the number of BSN nurse participants was typically small. Studies conducted during the first decade of the 21st century concentrated on satisfaction differences in AD, BSN, and postgraduate-prepared RNs. Specifically, BSN nurses were found to be significantly more satisfied than were AD nurses when positions including acute-care staff, home health staff, management, education, and advanced practice are considered (Ingersoll et al., 2002; Rambur, McIntosh, Palumbo, & Reinier, 2005; Zurmehly, 2008). Bjørk et al. (2007) found support for these findings in their study of Norwegian participants who were employed in a staff role at least 50% of the time. Taken together these studies suggest that when study samples are not exclusively front-line or staff RNs, BSNs are more satisfied than less-educated RNs. However, other studies conducted with acute-care RNs found that level of education had no effect on job satisfaction when predictors including stress, commitment, conflict, ambiguity, variety, and autonomy were included in the analysis (Kovner et al., 2006; K. Lu et al., 2007).

*Experience*

Meta-analyses of studies conducted between 1979 and 1992 found a low correlation between experience and satisfaction, which the authors (Blegen, 1993; Irvine & Evans, 1995) attributed to modifier influences. Consistent with this modifier argument, studies conducted during the first decade of the 21st century found that the role of experience seemed to vary with generation of RN. The most experienced RNs (> 30 years' experience) and the least experienced

(< 3 years) both reported greater satisfaction than nurses with 10-15 years' experience (Schmalenberg & Kramer, 2008). Some recent studies support these results, identifying years of experience as a strong predictor of satisfaction in front-line staff in acute-care settings (Halm et al., 2005; Li & Lambert, 2008; Mrayyan, 2005). However, other studies that include work settings and roles, or fail to include multiple generations of workers (i.e., those over the age of 30) in their samples, find that experience does not contribute to RN job satisfaction levels (Chu et al., 2003; Curtis, 2008; Kovner et al., 2006; Shaver & Lacey, 2003).

### *Psychological Predictors*

#### *Positive/Negative Affectivity, Task Significance, and Organizational Commitment*

During the first decade of the 21st century, three psychological predictors (affectivity predisposition, task significance, and organizational commitment) were found to be related to job satisfaction (Chu et al., 2003; Ingersoll et al., 2002; Seo et al., 2004; Shaver & Lacey, 2003). Unfortunately, job satisfaction studies during the 1980s and 1990s that included commitment/affectivity and organizational commitment were limited.

##### *Positive/Negative Affectivity*

*Positive affectivity* is defined as a dispositional tendency to experience pleasant emotional states: attentive, active, inspired, friendly, and forgiving. In contrast, *negative affectivity* is the tendency to experience unpleasant emotional states: frustrated, lonely, angry, and bad-tempered (Watson & Tellegan, 1985). Research conducted since the 1990s has found a positive relationship between positive affectivity and satisfaction, and negative relationship between negative affectivity and job satisfaction (Chu et al., 2003; Gurney, Mueller, & Price, 1997; Seo et al., 2004). However, the ability for nursing staff to cope with situations and positively reframe

them has not been consistently found to be related to satisfaction (Kovner et al., 2009; Li & Lambert, 2008), and neither of these issues were studied prior to the 1990s.

### *Task Significance*

*Task Significance* is a term that describes the overall importance felt about a position, and can be influenced by the work environment, organization, and community. Over three decades, inconsistent findings are reported. Monroe (1983) found a low correlation between job satisfaction and task significance in recent graduates (r = .17), and Cowin et al. (2008) found a high correlation in a random sample of RNs (r = . 72). The range of correlations indicates that there may be influences from moderators.

### *Organizational commitment (OC)*

*Organizational commitment* is a broad term that involves the commitment an employee has to remain with an employer with loyalty. Although not studied in the 1980s, work satisfaction has been found to be significantly related to OC since the 1990s (Chu et al., 2005; Ho, Chang, Shih, & Liang, 2009; Holtom & O' Neill, 2004; Ingersoll et al., 2002; H. Lu et al., 2007; McNeese-Smith, 2001; H. L. Smith et al., 2005; Tourangeau & Cranley, 2006). The satisfaction that leads to OC is theorized to provide RNs with the opportunity for continuing job satisfaction through increased work engagement, involvement in their job in the form of effort, membership, and belief in the organizational goals to provide fulfillment (K. Lu et al., 2007).

## Conclusion

Nursing has always been a fast-paced, labor-intensive work environment plagued by cyclical shortages. Changes over the decades have included work requirements and settings,

populations served, and RN demographics. Maintaining workforce satisfaction is critical for retention of RNs at a time when the shortage is predicted to continue and the acuity of patients escalates with increasing age, comorbidities, and technological needs.

Study findings from the 1980s are not abundant, findings from contemporary studies regarding many potential predictors of job satisfaction are mixed, and research methods are inconsistent. Hence, conclusions regarding the biggest contributor to satisfaction levels of the front-line RN are difficult to determine by merely summarizing the literature and attempting to discern methodological factors associated with differences in findings across sets of studies over three decades. Additionally, moderator influences are a likely explanation of inconsistencies in findings, particularly when examining the effects of autonomy, control, facility type, Magnet status, and unit type on front-line nurse job satisfaction.

The overall impression gained from the literature review is that job satisfaction is complex and that multiple predictors affect work perception. Given the changing workforce and rapidly evolving work environment, there is a need for assessment of all possible predictors, using a statistical procedure such as meta-analysis which will allow investigating the role for effect moderators. Insight into the stability and changes in predictors of job satisfaction over time can only be achieved by investigating data from over three decades of research on job satisfaction. Such work is essential for anticipating predictors of job satisfaction in this and future decades.

A comprehensive meta-analysis of nursing job satisfaction and its predictors, with consideration to the decade of employment and nurse characteristics, can provide the critical synthesis needed to guide public policy and organizational initiatives intended to sustain a satisfied, stable workforce. Some predictor variables including distributive justice, sufficiency of

supplies, and scheduling are not as widely studied as predictors such as routinization, autonomy. However, a non-a priori research approach including unpublished studies and dissertations from 1980 to 2009 may provide additional predictor data needed to meet inclusion criteria considered for analysis. The findings may assist healthcare organization in improving workforce satisfaction and stabilization.

# CHAPTER TWO: GENERATIONAL DIFFERENCES IN THE FRONT-LINE NURSING WORKFORCE IN RELATION TO JOB SATISFACTION

## Overview

There are currently over 3 million registered nurses (RNs) in the United States ranging in age from 21 years to over 65 years. Four distinct generational cohorts, that is, people born in the same general time span to share key life experiences and values (Zemke, Raines, & Filipczak, 2000) are represented in the workforce: Veterans, Baby Boomers (Boomers), Generation Xers (Xers), and Millennials. Registered nurses from each cohort are in front-line RN positions where workforce shortages exist, and these positions are filled by 66.3% of RNs (Buerhaus et al., 2009; HRSA, 2010a). Millennials are the newest generation in the field, Gen Xers have been in the field for a while, Boomers are starting to retire, but intend to work into their 60s, and the older Veterans are likely to be working part-time (HRSA, 2010a; Palumbo, McIntosh, Rambur, & Naud, 2009).

Each generation has brought unique perspectives on work, the work environment, and the role of leaders and managers. Generational cohorts share similar experiences based on the landscape of the time, and these experiences influence work behavior, values, and expectations, and predict their job satisfaction (AHA, 2010; Wilson et al., 2008; Zemke et al., 2000). Their perspectives are further shaped as cohort groups mature, move through the stages of life and reorganize priorities (McNeese-Smith, 2000; Smola & Sutton, 2002). In other words, cohort work perspectives are influenced through generationally specific experiences that are deep rooted and embedded, as well as the stages of life that are common to each cohort yet change over time (new graduate, newlywed, childrearing years, return to school, empty nest). Job satisfaction has been shown to be a consistent predictor of turnover (Cowen et al., 2008; Irvine &

Evans, 1995; Shader, Broome, Broome, West, Nash, 2001). However, determining predictors of job satisfaction in the nursing workforce is complex because each generation has unique values, and there are many predictors in the healthcare environment. Moreover, this healthcare environment is demanding, labor intensive, and continually changing (Blegen, 1993; Kimball & O'Neil, 2002; Zemke et al., 2000).

This paper examines how the job satisfiers of a graduate nurse (GN) differ from those of an experienced staff RN, and looks at the complexities of job satisfaction in a generationally diverse workforce. Specifically, the paper discusses 1) the landscape for Veterans, Boomers, Gen Xers, and Millennials; 2) the price of each generational cohort's diminished satisfaction in terms of economic cost, knowledge loss, and the value of generational renewal; 3) satisfiers of new graduate (GN) Boomers, Xers, and Millennial RNs; 4) satisfiers of experienced Boomer, Xers, and Millennial RNs; and 5) maturation and values.

### *The Landscape and Distinctions of Veteran, Boomers, Gen Xers, and Millennials*

Generations are identifiable cohort groups that share similar birth year periods and similar life events (Kupperschmidt, 2000). Same generations of workers also share common tastes and attitudes based on demographic, economic, social, and sociological similarities. In particular, each generational cohort experiences common events that occur at formative life stages and are termed defining events (Zemke et al., 2000). These defining events shape expectations of the work environment and what is needed for job satisfaction.

#### *Veterans*

Veterans are nurses born between 1922 and 1943. As of 2008, the youngest nurses in this generational cohort were almost 70 years old. However, healthcare institutions realize the

benefit of retaining these seasoned nurses and work to delay their retirement. RN Veterans are often employed part-time (HRSA, 2010a).

As children, Veterans grew up in hard times. They lived through the Stock Market crash, the Dust Bowl which destroyed many of the Great Plains crops and ruined the life of thousands of farmers, the invasion of Hitler, and World War II. Defining events included the Great Depression, the Japanese bombing of Pearl Harbor, D-Day in Normandy, the bombing of Hiroshima and Nagasaki, Victory over Europe day, and Victory over Japan day. As adults, few of these women went to college; their primary role was to provide a happy home environment and raise children (Zemke et al., 2000).

As a result of life events, they learned about working hard, saving money, being patriotic, and working together for the greater good (Zemke et al., 2000). Consequently, Veterans tend to be conformists. They are hardworking, loyal to companies, and dependable, and they have a strong respect for company hierarchies and seniority in working environments. Their memories of the Great Depression make them grateful for employment. Veterans experience difficulty with ambiguity, change, and challenges to employers or company rules. In the field of nursing, Veteran cohorts are committed to their healthcare institution. They have worked long hours and valued personal sacrifice (Duchscher & Cowin, 2004; Wieck, 2007; Zemke et al., 2000).

### *Baby Boomers*

Seventy-six million Baby Boomers were born between 1944 and 1960, and they are divided into two groups. The first-half being born in the 1940s and the second half being born between 1950 and 1960. In the United States, the youngest Boomers make up the lion's share of the nursing workforce: over 16% of RNs are 50 to 54 years old (HRSA, 2010a). It is expected

that this generation will continue to be a dominating force in the workforce until 2015 (Weston, 2001). Although Boomer RNs are beginning to retire, many may continue in the workforce because efforts are being made to prolong their working time (Cyr, 2005; Mion et al., 2006).

The Boomers were born in joyful post-World War II times when medicine enabled higher birth survival rates (Zemke et al., 2000). Their generation experienced economic growth and social change, and experienced the birth of nuclear power plants, the introduction of birth control pills, and television. Defining events included the Vietnam War, Woodstock, passage of the Civil Rights Act, the Cuban Missile Crisis, the Kent State University shootings, and the assassinations of President John Kennedy, Robert F. Kennedy and Martin Luther King (Zemke et al., 2000).

Economic stability brought optimism, positive times, and growth in hospitals, schools and industry. This generation of workers was idealistic and strong-willed, and they believed that the world was theirs to shape. They were also somewhat self-absorbed. Even as team members, Boomers desire rewards for individual achievements and are continually spotlight conscious (Weston, 2001; Zemke et al., 2000). Although the Boomers share underlying beliefs based on their experiences the first and second half boomers differ: the first-half Boomers are more influenced by growth, change, and capitalism, and tend to be positive, affluent workaholics. These boomers want to build successful careers rather than enjoy family life. These are the Boomers who have been labeled "Yuppies" and workaholics who drive BMWs and wear Rolex watches. The second-half Boomers started their careers during the Regan era and experienced corporate downsizing, which increased their cynicism about corporate America, and their devotion to family life (Zemke et al., 2000).

Both first and second stage Boomers value work performance, titles, and promotions. Although Boomers were starting to redefine gender roles to promote equality, the majority of female Baby Boomer college graduates chose traditionally female professions, i.e., teaching and nursing (Buerhaus et al., 2009; Hill, 2004; Zemke et al., 2000). In the nursing workforce, Boomers respond positively when the work climate emphasizes goal setting (Lavoie-Tremblay, Paquet et al., 2010). Boomer nurses value loyalty, professionalism and autonomy (Apostolidis & Polifroni, 2006; Mion et al., 2006; Zemke et al., 2000). Like the Veterans, they value hard work and are committed to their work organizations. However, Veterans view work as a duty, whereas Boomers view work as a challenge and opportunity for advancement (Apostolidis & Polifroni, 2006; Greene, 2005; Kupperschmidt, 2000).

### *Generation X'ers*

Forty million Generation X'ers were born between 1961 and 1980, but the birth rate was lower than in the previous generation. As a result, there were fewer workers from this generation available to enter the nursing workforce. In 2008, Gen Xers ages ranged from 25-47 years, and only 29.5% of all RNs were under the age of 40 (HRSA, 2010a).

Generation X inherited the social debris of their Boomer parents, which included divorce, swinging single trends, a soaring national debt, and an educational system that emphasized social skills and self-esteem rather than educational achievement (Kupperschmidt, 1998). Music Television (MTV) brought sexual themes to television, and Cable News Network (CNN) brought tragedies, including the Tylenol tampering and the space shuttle Challenger explosion into view by every family (Kupperschmidt, 1998). The childhood of Gen X'ers fostered independence because since single parent households and dual career parents left children alone during the day

and after school. They learned that parental support was limited because their parents were focused on self-development and work tendencies. Generation Xers also learned acceptance and tolerance of different beliefs because of the frequency of divorce, remarriage, and alternate lifestyles (Zemke et al., 2000).

Defining moments included the Arab terrorist attacks at the Munich Olympics, the Watergate scandal, President Nixon's resignation, the Three Mile Island nuclear reactor meltdown, John Lennon's murder, the Challenger disaster, the Exxon Valdez oil tanker spill, the Rodney King beating, the 1987 stock market crash, and the introduction of information technology and computers. These defining moments and the changes in family-life previously discussed came at a time when the passage of Title IX legislation promoted sexual fairness in athletics by mandating equal opportunities for male and females wishing to join an athletic program. Title IX led to a push for equality between males and females, including the educational system, and women began to pursue non-traditional fields of study (Kuznick & Ryan, 2008; Messner, 1988). The Gen X women who became nurses grew up challenging the stereotypical female nursing role and did not share earlier generations of women's beliefs in social, athletic, and academic male dominance. Female career choices expanded and women who chose nursing as a career did so because of desire, not limited options. In a multigenerational study, Norman et al. (2005) asked participants to choose the main reason for the nursing shortage. Boomers reported that the increase in career options was the main reason for the shortage, while Xers believed that salary and benefits were the dominant reason.

Although there was progress in gender equality, Xers experienced bleak political and financial times, with a lack of parental support. They lacked a sense of family, found the world discouraging, and encouraged development of close friendship groups inside and outside of

work. They became survivalists. Both sexes developed self-reliance, independence, and self-discipline in their work and leisure life. Xers have learned the negative consequences of stress from working and over-commitment. They believe in the importance of life balance, and are willing to work hard for just rewards which they view as pay and expected leisure time (Kupperschmidt, 2000; Zemke et al., 2000). In contrast to the process-oriented Boomers, Xers focus on outcomes (Carver & Candela, 2008). Because Xers are self-directed problem solvers, they desire independence in determining the process of producing a product. Most importantly, Xers work to live rather than live to work as their parents did, and they will change employment if their employment expectations are not met (Pellico, Brewer, & Kovner, 2009; Zemke et al., 2000). This generation is no less motivated to succeed than previous generations; but will define the conditions that facilitate success.

### *Millennials*

Over 72 million Millennials were born from 1981 to 2000, considerably more than in the Generation X cohort, and they now represent 12% of the U.S. workforce (Glass, 2007). Although new graduates comprise 23% of the workforce, Millennials do not represent the majority of graduate nurses (GN) because the average age of recent graduates is over the age of 30 (HRSA, 2010a; Kovner et al., 2007).

Many Baby Boomers planned the birth of their Millennial off spring, and they spent time hovering over and orchestrating their child's lives. Although managed by their parents, Millennials learned life realities while growing up in single parent homes, not strong nuclear families. Consequently, Millennials believe it is an individual mandate to build relationships in an uncertain world (Zemke et al., 2000). For this cohort, dangers of life were realized through

defining national moments that included the Oklahoma City bombing, Columbine High School massacre, the Clinton/Lewinsky scandal, the Bombing of the Twin Towers on 9/11, the Enron and WorldCom scandals, the 2004 tsunami in the Asian Ocean, and Hurricane Katrina (Murphy, 2007; Zemke et al., 2000).

As a result of parental influence, Millennials are continuously looking for ongoing challenges and professional growth (Lavoie-Tremblay, Leclerc, Marchionni, & Drevniok, 2010; Lavoie-Tremblay, Paquet, et al., 2010). An emphasis on teamwork, interdependence and networking though sports, leisure time and academic work has shaped the Millennial collective action approach to work, and they find it more important than Gen Xers to merge work life and social life (Crowther & Kemp, 2009). They value participation, collaboration and support rather than competition (Zemke et al., 2000). Growing up with advancing technology produced a generation of workers who have high technological ability and can multitask with ease (Howe & Strauss, 2000; Zemke et al., 2000). Further, the lessons learned from their parents about the uncertainty of life and careers brought about by organizational change leave this generation believing in the importance of work-life harmony (Lavoie-Tremblay, Leclerc et al., 2010).

Like Veterans, the Millennials are optimistic, productive and heroic in spite of adversity. They will sacrifice and work diligently for the good of the group. However, this generation is motivated by recognition, feedback, and sufficient compensation for work (Lavoie-Tremblay, Leclerc et al., 2010). The changes that came with the enactment of Title IX blurred traditional male and female roles for Millennials, and jobs that were traditionally female or male continue to have what previous generations accept as defining characteristics challenged by this youngest workforce cohort.

### *The Price of Generational Cohorts Diminished Satisfaction and the Value of Generational Renewal*

Diminished satisfaction among the nursing workforce has been linked to voluntary turnover (Cavanagh & Coffin, 1992; Kimball & O'Neil, 2002; Shader et al., 2001), and turnover of workers can have significant implications because new generations (i.e., Xers, and Millennials) are always needed to replenish the aging workforce. Moreover, these new generations add contemporary views to a continuously changing work environment (Hatcher et al., 2006; Kimball & O'Neil, 2002). The cost of diminished satisfaction can be measured in terms of 1) replacement costs, 2) the knowledge lost, and 3) the value of generational renewal. In this text section, these costs will be defined and related to the characteristics of the Veterans, Boomers, Xers, and Millennials.

#### *Replacement Costs*

Replacement of RNs is expensive for all workplace environments, and it is especially expensive in acute care, where replacement costs can be as high as $67,100 per RN (Jones, 2005; Kanai-Pak et al., 2008). Replacement of retiring workers is expected as a natural cycle of employment. However, turnover among the youngest generations (i.e., Gen Xers and Millennials) has been recorded as high as 70% within the first year of employment (Lavoie-Tremblay, O'Brien-Pallas, Gelinas, Desforges, & Marchionni, 2008; Squires, 2002). High turnover is problematic because it: (a) is costly to healthcare organizations; (b) adds stress to staff who act as continuous teachers and resources to newer nurses; (c) exacerbates the RN shortages; and (d) has adverse effects on the field of nursing (Kimball & O'Neil, 2002; Levoie-Tremblay, O'Brien-Pallas et al., 2008).

Given that 62.2% of RNs work in acute care facilities (1,905,287), with an annual RN turnover of 266,740 (i.e., approximately 14%), the annual cost to acute care facilities may be as high as $17.9 billion. The shortage of RNs is compounded by an estimated 2.3% predicted growth demand due to overall population growth, medical advances, and an increase in the elderly population (American Association of Colleges of Nursing [AACN], 2011; Hatcher et al., 2006).

### *Knowledge Loss*

RNs over the age of 50 comprised 44.7% of the total RN population in 2008 (HRSA, 2010a). These Veterans and Boomers lend expertise and knowledge to the workforce. Seasoned professionals provide loyalty and reliability to the organization, life and clinically experienced care to families, and mentoring, teaching, coaching and role modeling to novice nurses (Mion et al., 2006; Zinsmeister & Schafer, 2009). Their experiential knowledge of complex patient care positively affects patient care quality, patient satisfaction, safety, productivity, and organizational performance (Hatcher et al., 2006; Mion et al., 2006). These nurses train new RNs and bring knowledge that younger RNs rely on, and they provide the maturity, knowledge and expertise that can only come from extensive experience (Hatcher et al., 2006; Zinsmeister & Schafer, 2009). Premature turnover of seasoned RNs can result in lost work-knowledge, resources, support, and recruitment efforts for the youngest generation of workers.

### *Value of Generational Renewal*

Generation X'ers and Millennials are needed to renew and revitalize the workforce by adding to the ever changing, technologically advanced care of acute care settings where 62% of younger nurses work (Norman et al., 2005). Veterans are retiring, Boomers are beginning to

retire, and many report intentions to leave their current positions (Norman et al., 2005). Their retirement could provide opportunities for positive change in the workplace when Millennials who have high commitment and a positive attitude become replacements (Blythe et al., 2008).

As younger generations fill the workplace, older standards are replaced by new norms that can facilitate change to improve the profession of nursing. For example, RNs from the Gen X and Millennial generation are less inclined to gender stereotype (Zemke et al., 2000). There are more men entering the field of nursing in the U.S. than in past decades (almost 10% in 2008 compared with 6.2% before 2000), and applications by men for nursing programs were reported as high as 28% in 2001 (HRSA, 2010a; Whittock & Leonard, 2003; Zemke et al., 2000). As more men enter the field, recruitment strategies may change to accommodate factors found to be important such as career opportunities and salary (Meadus & Twomey, 2007). In addition, Millennials are team-oriented workers and their psychological distress is negatively correlated with social support from colleagues and superiors (Lavoie-Tremblay, Wright, et al., 2008; Zemke et al., 2000). As Millennials become the dominant generation in the workplace, an increase in teamwork and support could change the negative, unsupportive clinical environments that have been reported in the past (Casey, Fink, Krugman, & Propst, 2004; Duchscher, 2001; Olson, 2009).

### *Satisfiers of New Graduate (GN) Boomers, Xers, and Millennial RNs*

Nurses during approximately 18 months of their first job in the workforce are termed graduate nurses (GN); (Halfer & Graf, 2006; Kovner et al., 2007; Kramer, 1974). Job satisfaction for GNs reflects their newness to the job and generationally derived predictors (Keepnews, Brewer, Kovner, & Shin, 2010). Although new graduates may include Boomers,

most are Gen Xers and Millennials, with an average age of approximately 32 years (HRSA, 2010a; Kovner et al., 2007). Low job satisfaction and high turnover for staff GNs are common: Kovner et al. (2007) found that 41.5% of GNs would want another type of job if given a choice. Estimated turnover can be as high as 57% after two years of employment (Bowles & Candela, 2005).

Throughout the decades, people with altruistic qualities and a desire to help others have been drawn to the field of nursing (De Cooman et al., 2008; Whittock & Leonard, 2003). Price (2008), who conducted a meta-study of career choice and socialization of nurses, analyzed ten qualitative studies from 1993-2006 and found that the same profile of people entered the field of nursing throughout this period. Distress occurs when students' transition to practicing clinicians and coped with the unanticipated realities of the work environment (Duchscher, 2001; Kramer, 1974). Upon graduation, the GN joins the nursing force, but is both psychologically and clinically unprepared for a workplace that is frequently unpredictable, chaotic, unsupportive, and even abusive (Kovner et al., 2007; Kramer, 1974; Olson, 2009; Pellico et al., 2009). The phenomenon is known as "Reality Shock", and it has been documented since the 1970s (Kramer, 1974).

New graduates from all generations struggle with clinical competence, stress management, priority-setting, conflict resolution, and cultural uncertainty in a workplace where there are heavy workloads, time constraints, complex patients, environmental hazards (e.g., blood-borne infections, H1N1, violence, and chemical toxins), and national standards of care (e.g., patient safety goals, core measures of quality and nurse-sensitive indicators), that can be overwhelming (Anderson, Linden, Allen, & Gibbs, 2009; Bratt, 2009; Casey et al., 2004; Duchscher, 2001; Hodges, Keeley, & Troyan, 2008; Jackson, 2005; Linder, 2009; Pellico et al.,

2009). Predictors of satisfaction vary by generation because needs and expectations vary in different generations (Widger et al., 2007; Zemke et al., 2000).

Limited studies have examined generational differences among GNs. In one of the few studies, Keepnews et al. (2010) compared generations using 2364 GNs, including 10.5% Boomers, 68.8% Gen Xers, and 19.4% Millennials. Boomers tended to work in jobs other than staff nurses and in situations other than the high acute, fast paced environments such as ICU which Gen Xers and Millennials prefer. There were no generational differences in attitudes toward workload, relations with MDs, job variety, and autonomy, which suggests that the GNs of each generation perceive the same work in nursing. However, Xers rated work/family conflict higher than Boomers, and distributive justice (i.e., reward for work) lower than both Boomers and Millennials, pointing to the Xers' generational value in work/life balance and fair compensation (Greene, 2005; Kovner et al., 2007).

Keepnews et al. (2010) also found that Millennials rated their ability to be involved in decision making higher than Gen Xers and Boomers, and Millennials rated work group cohesion as well as supervisory and mentor support highest of all the generations. These findings point to the value that Millennials place on involvement, teamwork, and feedback (Lavoie-Tremblay, Leclerc et al., 2010; Olson, 2009). Yet while Millennials in the Keepnews et al. (2010) study rated the adequacy of mentor support, organizational commitment, decision-making and work group cohesion significantly higher than Boomers and Gen. Xers, they expressed the highest level of negative affectivity. There is high stress (e.g., heavy workloads, time constraints and high patient complexity) for this latest generation of new graduates, and this high stress is associated with an imbalance between efforts expended and rewards received (Lavoie-Tremblay, Leclerc et al., 2010; Lavoie-Tremblay, Wright et al., 2008). RNs that experience high stress

expect the stress to be offset by rewards such as monetary remuneration, esteem and improved career opportunities. Both Generation Xers and Millennials GNs expect to be compensated fairly, and are not satisfied with their pay (Kovner et al., 2007; Murrells, Robinson, & Griffiths, 2009). This is particularly problematic because, as their generational cohort profile suggests, GN Gen Xers and Millennials will not stay in jobs that are dissatisfying (Kovner et al., 2007; Kupperschmidt, 2000; Zemke et al., 2000).

While younger GNs have specific needs, so do older Boomer GNs. Many GN Boomers report having a college degree and a previous career prior to entering nursing school, making nursing a second career (Keepnews et al., 2010; Kohn & Truglio-Londrigan, 2007). Because of their age, Boomers complain of physical demands, long shifts, decreasing physical abilities, and heavy workloads (Hatcher et al., 2006; Mion et al., 2006). Older GNs may be aware of limitations and less dependent on income. Therefore, predictors of satisfaction may include the physical workload rather than compensation or work-family conflicts, as seen with Xers and Millennials (Keepnews et al., 2010).

GNs' work needs are based on their novice status in the work environment (Duchscher, 2001). New graduate orientation programs help them work through the transition from student to practicing clinician. All generations find satisfaction through GN orientation programs that include leadership and mentor support, manageable workloads, work group cohesion, distributive justice and professional development opportunities (Beecroft, Kunzman, & Krozek, 2001; Halfer, 2008; Halfer, Graf, & Sullivan, 2008; Keepnews et al., 2010; Zinsmeister & Schafer, 2009).

### *Satisfiers of Experienced Boomer, Xer, and Millennial RNs*

Among experienced RNs in the workforce, satisfaction is related to staffing levels and resource adequacy constituents, and workplace relationships (Kanai-Pak et al., 2008). Generational cohorts have common life experiences that give them a shared work ethic and shared workplace expectations. These expectations can differ between generations (Zemke et al., 2000). Workload, job characteristics (e.g., routine), and relationships are important to all generational cohorts, despite differing expectations, attitudes, and experiences (Keepnews et al., 2010).

Studies that have included a variety of workplaces (e.g., acute care, long-term care, ambulatory care), different positions (e.g., front-line or staff, manager, instructor) indicate that age does not explain job satisfaction or it is only a weak predictor of satisfaction (Blegen, 1993; Irvine & Evan, 1995; Kovner et al., 2006). However, studies that focus on generational differences among front-line RN have found that Boomers experience more job satisfaction than Xers and Millennials (Blythe et al., 2008; Widger et al., 2007; Wilson et al., 2008). In particular, there are generational differences in perceptions of job satisfaction as a function of job stress, the work environment and pay.

Although overall satisfaction levels of Boomers are higher than for Xers and Millennials, all the generations experience stress, which has historically been found to be a strong predictor of job satisfaction (Blegen, 1993; Irvine & Evans, 1995; Widger et al., 2007; Zangaro & Soeken, 2007). Stress can be caused by patient-specific aspects (e.g., patient acuity, patient age), physical factors (e.g., dangerous workloads, short staffing, environmental pathogens, dangerous patients), and working in a deficient system (Aiken, Clarke, Sloane, Sochalski et al., 2002; Burke, 2003; JCAHO, 2005; Kimball & O'Neil, 2002; Sheward et al., 2005). The symptoms of

stress may include emotional exhaustion, depersonalization and cynicism, and reduced personal accomplishment (Maslach, 2003).

Studies have found that all three generational cohorts experience moderate to high levels of emotional and physical exhaustion (Blythe et al., 2008; Widger et al., 2007). Boomers who are aged 50 – 67 find that stress is caused by heavy workload and inadequate staffing and exacerbated by the increasing complexity and obesity of patients as well as increased paperwork (Reineck & Furino, 2005).

Heavy workloads and inadequate staffing clearly cause stress. However, stress symptoms seem to be higher for Xers and Millennials. Studies have found that Gen Xers and Millennials reported higher levels of depersonalization than Boomers (Widger et al., 2008; Wieck, Dols, & Northam, 2009). Leiter et al. (2010) compared Boomers and Gen Xers, finding that Gen Xers experienced higher levels of exhaustion and physical symptoms of stress from the workplace, co-workers, and supervisors. This suggests that a conflict of generational values in the workplace involving RNs of the Boomer generation is contributing to Gen Xers' work stress. This conflict makes sense given the findings that Gen Xers are independent, self-directed, outcome oriented workers who demand a work-life balance, while Boomers are loyal, process-oriented workers who will sacrifice themselves for the good of the workplace. In other words, Boomers believe that they should work overtime or for extra hours to ensure that the staffing levels are adequate when there are not enough nurses to care for patients on a shift. However, Xers believe they should work because they want to work, not because they are loyal to the company or nursing unit (i.e., not to ensure adequate staffing levels).

In addition to stress, work, and work opportunities impact job satisfaction, but different generations value different aspects of these phenomena. Studies find that Boomers are more

satisfied with promotional opportunities, rules, scheduling, professional opportunities, and control and responsibility than Gen Xers and Millennials (Blythe et al., 2008; Wilson et al., 2008), and they focus on pension and retirement benefits (Palumbo et al., 2009; Wieck et al., 2009). Boomers value autonomy, professionalism and interaction, and they report significantly more satisfaction with scheduling, work/family balance, opportunities, praise and control than Xers and Millennials (Apostolidis & Polifroni, 2006; Blythe et al., 2008; Widger et al., 2007; Wilson et al., 2008). Their satisfaction predictors are aligned with the values of loyalty and responsibility.

Gen Xers rate professional growth as the most important satisfier, followed by interaction with colleagues (Apostolidis & Polifroni, 2006). Work/life balance is also highly linked to satisfaction (Halfer & Graf, 2006). Gen Xers find satisfaction when work and personal life is balanced, they have development opportunities, and there are there ongoing changes in technology, variety, and new approaches to work procedures. They are willing to change jobs to meet strong personal needs (Greene, 2005; Stuenkel, Cohen, & Cuesta, 2005). When 394 acute care Boomer and Gen X RNs' responses on nurse manager leadership styles and unit climate dimensions were compared, no significant differences were reported in response to transformational and transactional leadership styles. However, responses to unit climate dimensions that included warmth, belonging and structure and support significantly differed between the cohorts, with Gen Xers reporting lower levels (Farag, Tullai-McGuinness, & Anthony, 2009). Findings support the generationally driven desire for Xers to enjoy a workplace, and for their satisfaction to be is dependent on friendly work relationships.

For Millennials, praise and recognition, clinical competence, accomplishment, and work technology are important for satisfaction (Jackson, 2005; Roberts, Jones, & Lynn, 2004).

Relationships formed at work are more important to Millennials than to Gen Xers and Boomers (Wieck et al., 2009). Like Gen Xers, the work environment is important for Millennials, and work/life balance is a predictor of satisfaction. As their generational values suggest, Millennials are team players at home and work, and they want balance in their life. Nevertheless, compensation in terms of pay, paid time off and premium pay (e.g., time and a half or double-time pay for working weekends or holidays) are viewed as the highest types of work incentives (Wieck et al., 2009).

Pay is an important predictor of satisfaction for Boomers, Gen Xers and Millennials (Apostolidis & Polifroni, 2006; Reineck & Furino, 2005). However, Boomers report more satisfaction with pay than Gen Xers or Millennials (Blythe et al., 2008; Widger et al., 2007), which may be a result of longevity or less value placed on pay. Boomers indicate that the work environment may be as important, or more important than pay (Hatcher et al., 2006). Contemporary research findings about how Boomers perceive the importance of pay is consistent with the correlation between pay and satisfaction in the 1980 and 90s, when pay was not highly correlated with satisfaction (Blegen & Mueller, 1987; Freeman & O'Brien-Pallas, 1998; Weisman et al., 1980).

Although Boomers report that pay is important for satisfaction, it ranks below retirement benefits, shift choice, and decision-making, (Palumbo et al., 2009; Wieck et al., 2009). Gen Xers and Millennials consistently report that pay is a high-ranking satisfier (McNeese-Smith & Crook, 2003; Norman, 2005; Wieck et al., 2009). Findings regarding Gen Xers and Millennials are in line with the value they place on fair compensation for work.

### *Maturation and Values*

Stage of life also plays a part in job satisfaction. Veterans are the oldest workers and are retiring, Boomers are experiencing the physical effects of aging and are beginning to retire, Gen Xers are in the middle of raising families, and Millennials are beginning their careers. Although people grow and change with maturation, values that determine satisfaction do not necessarily change (Smola & Sutton, 2002). These findings are supported by Kacmar and Ferris (1989), who examined Boomer nurses, and found the relationship between RN work satisfaction and age remained stable over time. This indicates that the work values remain constant.

Work values define what the individuals believes is right and wrong with the work environment and what s/he expect from the workplace. Values can be tied to generational beliefs because each generation is informed by value systems that are based on shared life events. Smola and Sutton (2002), compared sampled respondents working in manufacturing industries from 1974 and 1999 using items such as "I would quit my job if I inherited a lot of money"(p. 375), and "a worker should do a decent job whether or not his supervisor is around" (p. 374). Findings revealed that while values change with maturity, they are more strongly shaped by generational experiences. Value conflicts occur when employment expectations are not aligned with experience (i.e., misfits), and negatively affect levels of satisfaction as well as exhaustion and negative affect (Leiter, Jackson, & Shaughnessy, 2009).

To examine the value differences between generations, Leiter et al. (2009) examined Boomers and Generation X nurses, and found significant differences between the two cohorts. The work-life of Gen X nurses was less consistent with their personal professional values, and this was clearly attributable to differences in generational values than differences in tenure. Furthermore, McNeese-Smith and Crook (2003), compared RN values among Veterans,

Boomers and Generation Xers, and found that variety of work and economic returns were significantly more valued by Gen Xers than by the other cohorts. These findings may be compounded by the long-term influence of the Boomer generation on work values and the work environment that are not congruent with newer generations (Leiter et al., 2009).

## Conclusion

Nursing job satisfaction is an important and expensive problem to address because of the close relationship between job satisfaction and turnover in the nursing workforce. Each generation in the nursing workforce (i.e., Veterans, Boomers, Xers, and Millennials) bring similar altruistic values to help medically vulnerable people within a changing, challenging work environment. Furthermore, each cohort has work values that are derived from experiences that are unique to their generation: Veterans value loyalty, consistency, and self-sacrifice, Boomers value hard work and challenges, both Xers and Millennials value life-work balance and fair compensation, and Millennials value team-work. These values have all been linked to predictors of satisfaction in the workplace without accounting for any potential generational cohort effect. There continues to be questions regarding the main predictors of satisfaction for each cohort and if the predictors change over time with stages of life. For example, did young Boomer RNs value compensation (i.e., pay) as the Millennials do today?

The literature on generational differences and resulting values offers clear implications for research on job satisfaction in nursing. In particular, this research argues that the complexities of job satisfaction in a generationally diverse workforce cannot be understood without making generational cohort a key variable for understanding patterns of consistency and change in predictors of job satisfaction from 1980 to 2009. A quantitative meta-analysis of the

literature is critical if we are to uncover the main predictors of satisfaction for each generational cohort and determine whether predictors for the oldest cohorts (i.e., Veterans and Boomers) have changed over time. This information is essential for healthcare institutions to be able to create retention plans that maintain a generationally diverse workforce. Maintaining a generationally diverse workforce has the potential to not only capitalize on the strengths each generation brings to patient care, but to also use these strengths to transform the nursing workforce and patient health care environments for the better.

The purpose of this dissertation is to conduct a meta-analysis of satisfaction predictors for the front-line registered staff nurse using data from the past three decades (1980-2009). The data from articles that meet inclusion criteria will be examined for the effect of predictors on job satisfaction within individual decades and across decades with consideration to generational cohort effects and the influence of moderators on the predictor/satisfaction relationship. Results will allow us to quantitatively disentangle the effect of predictors on satisfaction by finding changes over time, effects of generational cohorts, and moderating influences of nurse characteristics and the work environment. Findings will guide workplace interventions aimed at making critical policy decisions to increase the satisfaction of a generationally diverse workforce, thereby increasing retention and reducing costs at institutional, state, and federal levels.

## CHAPTER THREE: RESEARCH METHODS AND STUDY HYPOTHESES

Meta-analysis is a systematic quantitative statistical synthesis of data from primary studies. Mathematical formulas are used to assign weights to each study in a meta-analysis, which removes subjectivity from the analysis. The conclusions can objectively provide answers to questions based on quantitative evidence using the data from studies included in the meta-analysis. This type of analysis provides overarching conclusions that are valuable when considering the emphasis on empirical evidence that affects today's practice of nursing and medicine.

The current study applied a non-a priori approach to published and unpublished studies from 1980 – 2009 in order to obtain impartial estimates of predictor summary effect sizes, moderating variables, and decade and generational differences. The term non-a priori implies that the research question is answered without preconceived propositions (Sutton, Abrams, Jones, Sheldon, & Song, 2000). At the start of this study, all possible predictors were considered for analysis.

The process of conducting the current meta-analysis began with a review of the published and unpublished literature. Studies were selected for inclusion on the basis of inclusion and exclusion criteria. Then, these studies were coded for analysis by two different coders. Once coding was complete, analysis was conducted to obtain descriptive statistics and summary effect sizes for each predictor of satisfaction and moderator influences.

## Literature Search and Study Selection

### *Literature Search*

A comprehensive search for studies proceeded five ways. First, a comprehensive computer search of nursing, allied health, management, and social science journals using database searches in Medline, CINAHL, PSYC Info., and Academic Search Premier was conducted to include studies published from 1980 to 2009. Keyword searches combined nurse, nurses, staff nurses or nursing with satisfaction, and job satisfaction. Second, searches for unpublished data included list serves, letters to nursing leaders, and leads from any correspondence that was received. Third, unpublished dissertations were searched using Proquest Dissertation Thesis (PQDT), and Proquest Dissertation and Thesis (A&I) using the same keyword searches as with published studies (i.e., combined nurse, nurses, staff nurses or nursing with satisfaction). Forth, as articles or dissertations were reviewed, a search of each document's reference section was conducted to provide additional studies (i.e., a "backward search" was conducted). As backward searched articles were reviewed, all their respective reference sections were reviewed to ensure a comprehensive literature search. Articles and studies that were published and not electronically accessible were obtained through the library Document Delivery System. Fifth, this author worked extensively to obtain data that were not provided in articles by email correspondence with study authors.

The initial study search process for published studies resulted in over 19,000 articles related to nurses and satisfaction. The search for published studies was appreciably narrowed by replacing the search words "nurse satisfaction" with "staff nurse satisfaction". The search process for identifying dissertations using the search words "staff nurse" and "satisfaction" resulted in 246 dissertations.

## Inclusion and Exclusion Criteria

All abstracts were reviewed using inclusion and exclusion criteria to narrow the selection of studies considered for the meta-analysis. These criteria were considered in four categories: study population, setting, data criteria, and satisfaction measure (see also Table 1). For example, studies were excluded if the sample was described as "nurses", rather than registered nurses (Cavanagh, 1992; Jansen et al., 1996; Lu et al., 2007); incorporated certificate nurses or LPNs (Morrison et al., 1997); included a sample that primarily consisted of RNs in management and/or educator positions (Gardulf et al., 2008; Rondeau & Wagar, 2006; Sharpe, 2007); or did not specifically state that the sample of RNs were staff or front-line nursing positions (Pfaff, 1987). Studies were also excluded if the data were used in another study that was already considered for inclusion, the sample size was not presented, the study was not written in English, or the statistics reported were not usable. Similarly, studies that examined life satisfaction were excluded (e.g., Lee, Hwang, Kim, & Daly, 2004). A final count of 62 studies met inclusion criteria for the meta-analysis. The following table 1 lists inclusion and exclusion criteria, and the figure 1 illustrates the search process.

Table 1: Inclusion and Exclusion Criteria

| Inclusion Criteria | Exclusion Criteria |
|---|---|
| Nursing Population | |
| | RNs in management/education positions (over 50%) |
| Study population consisted of all RNs | |
| Settings | |
| Acute care, home health, extended care, hospice, | |
| Data Criteria | |
| One data set per study | Information about sample size and subgroups is omitted |
| English text | |
| | Satisfaction and study predictor correlations are not present and there is insufficient data presented to compute correlation |
| Measure for Satisfaction | |
| The tool to measure satisfaction is discussed in article text and psychometrics are included | |
| | Not measuring job satisfaction or questionable measurement of job satisfaction as a construct |

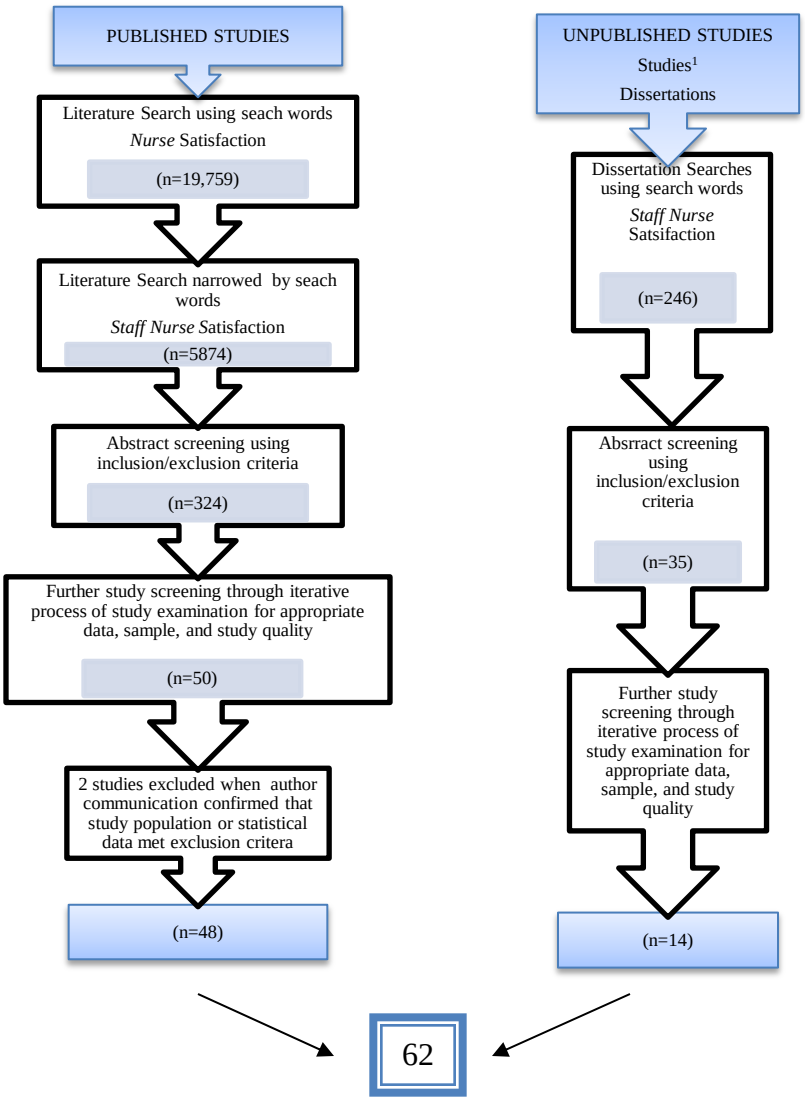



Figure 1: Illustration of Search Process

[1]Requests were made for unpublished publications through listserves, invisible colleges, and nurse leaders without results

## Study Coding

Coding schemes for primary studies included in a meta-analysis can be guided by the literature, but are unique to each meta-analysis and depend on the information needed to answer the research questions (Cooper, 2010). The coding scheme for the current study consisted of two

components. First, each study was examined and coded for specific characteristics (i.e., study characteristics coding) to capture study information and needed for moderator analysis. Second, individual predictors of satisfaction within each study were coded for the data needed to perform the meta-analysis (i.e., predictor coding).

## Study Characteristics Coding

Individual studies were coded to capture information on the studies and for the moderator analysis using a two-step process in which an initial coding tool was pretested, and then studies were coded. The original coding scheme for study criteria was extensive and included 28 coding components. During the pre-test of an initial coding of 15 studies, components were reworded and eliminated when findings indicated that at least 50% of the studies could not provide sufficient data for moderator analysis. For example, one of the original coding categories for studies included primary hours worked (e.g., days, nights, other), which was found to be inconsistently or infrequently described in primary studies, and therefore eliminated as a coding category.

As a result of the pre-test, 16 coding components from the study criteria coding scheme were dropped, leaving 11 components for study coding. These components are detailed in Table 2.

Table 2: Study Characteristics Coding Categories and Descriptions

| Category | Description |
|---|---|
| **Study ID** | Identification number of Study (1-74) |
| **Authors names** | Last names of authors |
| **Article year** | Year of study publication |
| **Country conducted** | Country of data collection (6 categories)<br>USA<br>Canada<br>Asia<br>Europe<br>Other<br>No information |
| **Sample size** | Size of study population or n |
| **Response rate** | The rate of participation in the study calculated by the number of RNs participation by the number sampled (Polit & Beck, 2004) |
| **Type of facility** | Type of work place usually indicates the patient population served<br>Acute care (i.e., hospital)<br>Extended care (i.e., nursing home, assisted living)<br>Home health or community health<br>Hospice<br>Other<br>No information |
| **Type of acute care** | Type of hospital<br>Teaching<br>Non-teaching<br>No information or other |
| **Study population mean age** | Mean age of the study population calculated by summing all ages and dividing by number of study participants (Polit & Beck, 2004) |
| **Tool to measure satisfaction** | Name of tool to measure satisfaction |
| **Reliability of tool** | Cronbach's alpha of tool to measure satisfaction<br>Test-retest metric |

## Predictor Coding

After study coding was finished, predictor coding began. Consistent with the non-a priori approach, predictors were not eliminated prior to predictor coding (Cooper, 2010). From one to 13 predictors were found per study (e.g., Brewer & Kovner, 2009; Zurmehly, 2008). Coding on 36 predictors included information that was necessary to calculate summary effect size and capture data about tools used to measure predictors of satisfaction (e.g., autonomy, RN/MD relationship). Data included the study ID, analysis type and associated statistic (e.g., correlational; r =.20; standardized coefficient), sample size (i.e., n). Although the psychometrics of the construct measure (e.g., autonomy, leadership support) were not necessary for analysis, the information was obtained if it was available. Nine of the original 36 predictors were eliminated from meta-analysis inclusion because they were found in less than 4 studies: workplace violence; work/family conflict; and sufficiency of supplies. Twenty-seven predictors were used for analysis. The following Predictor Table 3 provides a complete list of predictors that were considered for analysis, and those eliminated from the study. Appendix D provides a table that lists data that was extracted from each primary study.

Table 3: Predictor Coding

| Predictor Category | Predictor | Considered | Eliminated |
|---|---|---|---|
| Demographic Characteristics: | | | |
| | Wages | √ | |
| | Outside Employment Opportunity | √ | |
| | Age | √ | |
| | Experience or Expertise | √ | |
| | Gender | √ | |
| | Educational Level | √ | |
| | Time in Organization | √ | |
| | Time is Current Position | √ | |
| | Facility Type: | | √ |
| | Community | | |
| | Teaching /Academic | | |
| | Long-term | | |
| | Magnet/Non-Magnet status | | √ |
| | Unit Type: | | √ |
| | ICU | | |
| | PACU | | |
| | Oncology | | |
| | NICU/PICU | | |
| Work Setting Characteristics: | | | |
| | Autonomy | √ | |
| | Control over Practice (CNP) | √ | |
| | Leadership Support | √ | |
| | RN/RN relationship | √ | |
| | RN/MD relationship | √ | |
| | Task Requirements | √ | |
| | Task Significance | √ | |
| | Workload | √ | |
| | Staffing Adequacy | √ | |
| | Routinization | √ | |
| | Variety | √ | |
| | Sufficiency of supplies, and equipment | | √ |
| | Continued education support | √ | |
| | Hours | | √ |
| | 12/10/8 | | |
| | Days/nights | | |
| | Internal Employment Opportunities | √ | |
| | Empowerment | √ | |

| Predictor Category | Predictor | Considered | Eliminated |
|---|---|---|---|
| | Distributive Justice | √ | |
| | Perception of care quality | | √ |
| | Stress (physical and psychological) | √ | |
| | Safety, Violence, and Abuse | | √ |
| Emotional States/Perceptions/Commitment | | | |
| | Positive Affectivity | √ | |
| | Negative Affectivity | √ | |
| | Perception by community | | √ |
| | Organizational commitment | √ | |
| | Work Family Conflict | | √ |

## Coding Reliability

The quality of a meta-analysis depends on the reliability of the study of coding content. Experts recommend that at least two coders examine and code studies that meet inclusion criteria (Cooper, 2010). The coding reliability scheme in the current study depended on expertise from both the PI and secondary coder. The PI had worked as a RN in staff, management, and educational positions for over 30 years. The secondary coder had obtained an undergraduate degree in psychology with an industrial organizational specialty, and was familiar with coding studies for meta-analysis.

The PI coded all studies before the secondary coder began. Next, the PI and secondary coder discussed the meta-analysis and worked through 5 randomly selected studies. At this time, questions were answered, directions were clarified, and coding procedures were established. No substantive change in the coding scheme was needed.

After the coding scheme was refined, a random selection process was used to choose studies for secondary coding. Fifty percent of the studies from each of the 27 predictor

categories (e.g., autonomy, leadership support, RN/MD relationship) were randomly selected for secondary coding using a randomizing tool from http://www.randomizer.org/.

The secondary coder attempted to replicate the PIs primary coding by following two procedures. First, the conceptual meaning of predictors was examined because predictors were not labeled the same across studies. For example, RN/RN relationship was measured in studies as teamwork, cohesion, co-worker support. A table based on theoretically driven definitions and alternative words to describe predictors was used as a reference during coding. Appendix E displays Predictor Definitions.

Second, the secondary coder checked the entry of effect size data (i.e., r, ß) from primary studies into the excel spreadsheet for accuracy. In addition, publication year and sample size were examined for entry accuracy.

After the secondary coding was complete, inter-rater agreement was met 100% of the time for the randomly selected sample of studies for each of the 27-predictor categories. No additional statistical evaluation of coding reliability was used given the lack of differences present for the two coders.

## Data Analysis

Meta-analysis in the social sciences quantifies the summary effect size of the relationship between two variables in terms of standardized mean differences or correlations (Borenstein et al., 2009). Analysis began by examining descriptive statistics for each predictor.

The current study used the correlational statistics between individual predictors and measure of job satisfaction for the meta-analysis. These statistics included Pearson product

moment correlation, standardized beta coefficients, and path structural equation modeling (SEM) coefficients (e.g., *r*, *ß*).

Each predictor/satisfaction correlational statistic (i.e., *r*) and study sample size (i.e., n) included in predictor analysis were used to calculate the summary effect size. The correlational statistic from each study was transformed into a Fisher's *z* score (Borenstein et al., 2009).

$$z = 0.5 \text{ x } 1n \left(\frac{1+r}{1-r}\right)$$

Next, the Fisher *z* score was used to calculate the individual study effect size and summary effect size. The resulting values were converted back to correlations using a conversion formula. Correlations or effect sizes for individual studies and the summary effect sizes that were produced by the conversion formula were then examined using a forest plot.

Forest plots provided visual illustration of the meta-analysis results for each of the 27 predicators. Each plot was examined for individual study effect sizes, and the precision and significance of summary effect sizes (provided in the last row of the forest plot). The confidence intervals supported the significance of individual study and summary effects. Large sample sizes of individual studies offered more precision, and were awarded more weight in the summary effect. Information obtained through examination of the forest plots for each predictor provided information that was used to evaluate the need for moderator analysis.

## Meta-Analysis Random-Effect Model

A random-effects model was used to guide the current study. In the primary studies, true effect sizes were assumed to be normally distributed because the studies were similar, but not

identical. For example, the setting or educational levels of participants may have been different across studies, which could have influenced effect sizes.

## Computer Software Programs

Primary study coding and predictor coding was entered into a Microsoft Excel database and then imported into two different software programs for analysis (i.e., Comprehensive Meta-Analysis Software (CMA), and Statistical Package for the Social Sciences (SPSS)). CMA software was used to calculate the summary effect size for each predictor and for moderator analysis using data from predictor coding (i.e., correlation, and n) and study coding (i.e., year of publication, country of publication). CMA output included summary effects, variance of true score ($\tau^2$) correlations, p-value of the true score, confidence intervals, and forest plots.

Moderator analysis was conducted using study coding data (e.g., years, decades) that was imported from Excel into the CMA program. Scatter plots, Z-values, and p-values were examined to detect the presence of a moderator.

SPSS software was used to calculate descriptive statistics prior to each moderator and ANOVA analysis. Mean, mode, standard deviation, skew and kurtosis were examined for normal distribution of the summary effect (DV). ANOVA was conducted to determine group differences in decades (i.e., 1980, 1990, and 2000).

## Study Aims

### *Aim #1: Identify Large (R ≥=.50), Moderate (R= .30-.49) and Small (R=.10-.29) Summary Effect Sizes of Satisfaction Predictors*

The random-effects model was used to estimate the mean of a distribution of study effects, and raw calculations were used for the summary effect size with sample sizes used as weights. The p-value alpha was set at 0.05.

The computation for each predictor/job satisfaction relationship was calculated and examined four ways. First, small (r=.10-.29), moderate (r= .30-.49), and large (r ≥=.50) summary effect sizes were calculated for predictor/job satisfaction relationship, which facilitated the ranking of predictor effect sizes (Cohen, 1987). In this study, a summary effect size was calculated for each of the 27 predictors/job satisfaction relationships using the random-effects model.

Second, forest plots for each predictor/job satisfaction analysis provided a context for assessment of precision of the summary effect size. Plots were used to examine confidence intervals associated with each study's effect size and the summary effect size, the p-value for significance (i.e., <.05), and the number of studies used to calculate the effect size for each predictor. The information was used to guide the moderator analysis and contribute information used for the evaluation of precision.

Third, Q-statistic, I-squared ($I^2$), and Tau-squared ($T^2$) statistics were additional statistics calculated through CMA software to provide information about heterogeneity. The presence of heterogeneity for between study differences (e.g., study population, measurement tools used) was examined and used as additional guide for the need for moderator analysis.

The Q-statistic was calculated to quantify the true variance between studies and incorporates both the true effect size of the study population and random sampling error without sensitivity to the metric of effect size (Borenstein, Hedges, Higgins, & Rothenstein, 2009). Each of the 27-predictor analysis output was examined for the Q-value, Q-statistic and p-value. A p-value less than .05 indicated that studies did not share a common effect size.

$I^2$ measures heterogeneity across study findings. $I^2$ is expressed as a percentile, and ranges from 0% - 100% with: 25% indicating low heterogeneity, 50% indicating medium heterogeneity, and 75% indicating high heterogeneity. High percentiles indicate that observed variation is due to real between studies differences (i.e., heterogeneity), and indicates the need to investigate covariate or moderator influence (Borenstein et al., 2009). $I^2$ is not influenced by the number of studies.

$T^2$ estimates the between-study variance, or heterogeneity of the true summary effect sizes, without being sensitive to the number of studies in each summary effect calculation. The weight of the $T^2$ is assigned to each study under the random effects model, with a value over 0 indicating heterogeneity.

Fourth, publication bias was examined for each job satisfaction predictor through funnel plot calculation and Rosenthal's *Fail-safe* N. The accuracy of the synthesized results of a meta-analysis depend on the inclusion of studies that report insignificant findings, which may not be published (Borenstein et al., 2009; Cooper, 2010). Although a thorough search of both unpublished and published studies was conducted, publication bias or a file drawer effect may have existed. Hence, the trim and fill method was used to calculate symmetry in the funnel plots. Trim and fill is a method to assess for publication bias, and uses an iterative process to re-compute extremely small studies and imputed studies to create a symmetrical and unbiased

funnel plot. The trim and fill funnel plots and summary effect sizes for all predictor/job satisfaction analyses were then compared.

Another approach to analyzing the possibility for publication bias was calculated through the Rosenthal's *Fail-safe* N. This calculation estimates the number of studies needed for the p-value to become insignificant. All predicator/satisfaction summary effect sizes that met significance underwent this analysis.

### *Aim #2: Determine if Summary Effect Sizes of Predictors of Satisfaction Changed Over Three Decades (1980-1989, 1990-1999, and 2000-2009)*

Predictors/job satisfaction summary effect sizes were analyzed for changes over three decades for those predictors that included at least 4 studies per decade. Summary effect size data (DV) was assessed for normal distribution for each predictor (IV) included in analysis (i.e., Autonomy, Leadership Support, and Education Level or Expertise). ANOVA was used to analyze homogeneity of variance between the decades (i.e., 1980, 1990, and 2000) for each predictor

### *Aim #3: Assess the Moderating Influences on Satisfaction Predictors Over Three Decades (1980-2009)*

As recommended by Borenstein et al. (2009), predictors were considered for moderator analysis when heterogeneity was present, and more that 10 studies were included in the summary effect size analysis. Potential moderators were selected from coded study characteristics. However, many were eliminated because data were insufficient. For example, Facility Type (e.g., acute care, long-term care) was considered as a potential moderator. However, only 13 of the 62 studies were conducted outside of acute care facilities, and 9 studies were conducted in multiple settings. Therefore, study facility could not be tested as a moderator variable.

The two moderators selected for analysis included Year of Study Publication and Country of Study Sample. Year of Study Publication was analyzed as a continuous variable. The moderating effect of Country of Study Sample was represented by dummy variables (0 = not U.S.; 1= U.S.).

Consistent with using the random-effects model, moderator analysis was accomplished using method of moments regression model. Output resulted in Z-values and corresponding p-values.

### *Aim #4: Assess the Moderating Influence of Decade on the Correlation between Age and Job Satisfaction to Analyze Generational Changes*

The effect size for age was assessed for normal distribution. To test the moderating effect of time, Decade (IV) was regressed on to the summary effect for age (DV). Decade was analyzed as both a continuous variable (study years, 1980-2009), and a dichotomous variable (before 2000, after 2000). Calculation using the random-effect model (i.e., method of moments) was conducted resulting in Z-value and corresponding p-value.

# CHAPTER FOUR: RESULTS

Results are presented in three sections. First, the study characteristics findings are discussed. Second, predictor findings are detailed. Third, tests of study hypothesis are described.

## Study Characteristics

There were 16 (25.0%) studies from the 1980s decade, 13 (20.3%) from the 1990s decade, and 35 (54.7%) from the 2000 decade. Studies from 10 counties contributed to the meta-analysis study sample: 44 U.S. studies (68.7%), 8 Canadian studies (12.5%), 7 Asian studies (11.0%), with Brazil, Jordan, Europe and Australia contributing five studies (7.8%).

These studies reported response rates that ranged from 9.3%-97.7%. Thirty-six (56.3%) of the studies had response rates over 50%. The studies during the 1980s reported response rates ranging from 40%-97.7%. Studies during the 1990s reported response rates from 25%-81.6%. Studies during the 2000s reported response rates ranging from 9.3%-85%. However, the 2000 decade also had the greatest number of studies with low or unreported response rates (35% for the decade; 28.1% for the full sample of studies). These findings indicate that response rates varied through each decade, with the 2000s reporting the widest range of response rates.

Mean sample ages from each decade were similar. In the 1980s, ages ranged from 24 to 42, with 10 (62.5%) missing. In the 1990s, mean sample ages ranged from 28.2 to 45, with four (30.7%) missing. In the 2010s, decade mean ages ranged from 25 to 46.6 with data missing for eight studies (22.8%). The findings indicate that studies during the 1980's-1990's primarily sampled the Baby Boomer RNs (i.e., those born between 1943-1960), and the studies from the

2000 decade sampled the Gen. Xers and Millennials (i.e., 1961-1980 and 1981-2000 respectively).

Most studies were conducted in acute care facilities (72%), with nine studies conducted in more than two setting (15%), and 7% conducted in home health, hospice or other settings (e.g., prison health care). Four studies (6%) did not disclose the study setting. Most studies (i.e., 75%) did not report whether the study setting was a teaching or non-teaching facility.

Over 20 different tools were used in the primary studies to measure job satisfaction for front line RNs. Some tools were established (e.g., IWS), while others were modified tools, or developed for the primary study. Job satisfaction was measured with tools that included IWS (7 studies; 10.9%); NJS (3 studies; 4.7%); MMSS (3 studies; 4.7%); JDS (6 studies; 9.4%); JDI (4 studies; 6.3%); the NWI (2 studies; 3.1%); and others (60.9%). Tools with differing theoretical underpinnings define predictors differently which may cause heterogeneity between studies. For example, Task Significance in the IWS may not mirror the same meaning intended in the JDS. Appendix B displays the theoretical frameworks for tools used in these primary studies and Appendix C describes the theoretical underpinnings for the measures.

Psychometrics for the job satisfaction tools were primarily limited to Cronbach's alpha discussion. Fifty-three studies (85.5%) reported Cronbach's alphas over .70, with over 50% reporting an alpha of .85, indicating that most tools used were reliable. The report of test-retest results was limited to two studies (3.1%).

## Predictor Data Analysis

Data sets for analyzing predictor summary effect sizes varied from five to 26 studies per data set. Task Requirements, Gender, and Negative Affectivity were analyzed using data from 5 primary studies. RN/RN Relationship, Age, Educational Level or Expertise, Leadership Support were analyzed using the data from at least primary 17 studies. Autonomy was a commonly studied variable resulting in 26 studies being available.

## Meta-Analysis Results

### *Aim #1: Identify Large (R ≥=.50) Moderate (R= .30-.49) and Small (R=.10-.29), Summary Effect Sizes of Satisfaction Predictors*

Results will be presented with initial discussion of predictor summary effect sizes. Discussion of study precision (e.g., forest plots), heterogeneity, and publication bias (i.e., funnel plot, Rosenthal *Fail-safe* N) will follow.

#### *Summary Effect Sizes*

Large summary effect sizes were found for three predictors (11.1%), with Task Requirements having the largest summary effect size (r =.61; 95% CIs [0.40, 0.76]) followed by Empowerment (r = .55; 95% CIs [0.49, 0.59]), and Control (r =.52; 95% CIs [0.05, 0.80]). Moderate summary effect sizes were found for ten predictors (37%): Organizational Commitment, Positive Affectivity, RN/MD Relationship, Autonomy, Leadership Support, Stress, Task Significance, RN/RN Relationship, Distributive Justice, and Variety. These summary effect sizes ranged from .30 (Variety) to .49 (Organizational Commitment).

Small summary effect sizes were observed for 9 predictors (33.3%). Age had the smallest summary effect size (i.e., r =.05; 95% CIs [0.01, 0.08]). Five predictors (18.5%) did not

find significant summary effect sizes: Time in Organization, Educational Level or Expertise, Years of Work Experience, Gender, and Time in Position. Table 4 displays the results of the meta-analysis and includes summary effect sizes, confidence intervals and p-values for all predictors.

Table 4: Results of Meta-Analysis: Predictors of Satisfaction

| **Predictor** | **Summary Effect Size** | **n** | **95% CI** | **p** |
|---|---|---|---|---|
| Task Requirements | .61 | 5 | (0.40, 0.76) | ≤ .001 |
| Empowerment | .55 | 8 | (0.49, 0.59) | ≤ .001 |
| Control | .52 | 6 | (0.05, 0.80) | 0.03 |
| Organizational Commitment | .49 | 8 | (0.39, 0.58) | ≤ .001 |
| Positive Affectivity | .47 | 6 | (0.30, 0.62) | ≤ .001 |
| RN/MD Relationship | .44 | 7 | (0.30, 0.57) | ≤ .001 |
| Autonomy | .44 | 26 | (0.30, 0.57) | ≤ .001 |
| Leadership Support | .44 | 21 | (0.36, 0.52) | ≤ .001 |
| Stress | -.43 | 14 | (-0.51, -0.35) | ≤ .001 |
| Task Significance | .38 | 11 | (0.23, 0.50) | ≤ .001 |
| RN/RN Relationship | .33 | 17 | (0.26, 0.40) | ≤ .001 |
| Distributive Justice | .33 | 9 | (0.22, 0.43) | ≤ .001 |
| Variety | .30 | 11 | (0.22, 0.37) | ≤ .001 |
| Negative Affectivity | -.29 | 5 | (-0.42, -0.15) | ≤ .001 |
| Internal Employment Opportunities | .29 | 11 | (0.23, 0.35) | ≤ .001 |

| Predictor | Summary Effect Size | n | 95% CI | p |
|---|---|---|---|---|
| Routinization | -.25 | 7 | (-0.44, -0.04) | 0.02 |
| Workload | -.24 | 11 | (-0.30, -0.18) | ≤ .001 |
| Wages | .23 | 14 | (0.06, 0.39) | 0.01 |
| Continued Education | .22 | 6 | (0.13, 0.30) | ≤ .001 |
| Staffing Adequacy | .19 | 8 | (0.08, 0.30) | ≤ .001 |
| Outside Employment Opportunities | -.15 | 7 | (-0.22, -0.07) | ≤ .001 |
| Age | .05 | 17 | (0.01, 0.08) | 0.02 |
| Time in Organization | .04 | 8 | (-0.04, 0.13) | 0.34 |
| Educational level or Expertise | -.04 | 17 | (-0.09, 0.01) | 0.10 |
| Years of Work Experience | .03 | 15 | (-0.04, 0.11) | 0.39 |
| Gender | .03 | 5 | (-0.05, 0.10) | 0.51 |
| Time In Position | .02 | 11 | (-0.05, 0.09) | 0.51 |

***Precision***

Examination of each predictor's forest plot yields information about: (a) individual studies (e.g., study effect size or correlation, precision of individual study); (b) the summary effect size (provided in the last row of forest plot); and (c) the precision of the summary effect size (e.g., C.I., number of studies, and dispersion of primary study effect sizes). Analysis of twenty-two of the twenty-seven predictors found confidence intervals that were narrow and did not include the null, and found significance. Yet the number of studies used for summary effect analysis of each predictor ranged from five (i.e., Task Requirements, Negative Affectivity, and

Gender) to twenty-six (i.e., Autonomy), increasing the probability for a lack of precision in the summary effect analysis for those predictors with a limited number of studies included in the analysis. Twelve of the predictors that significantly correlated with job satisfaction had less than 10 studies in the analysis, and all three of the predictors that found large summary effect sizes had less than nine studies in analysis.

Figure 2 contains a forest plot for Task Requirements, one of the predictor variables with the smallest number of studies. The individual study effect size (r) for Task Requirements ranged from .20 to .79. The limited number of studies may compromise calculation of the Task Requirements summary effect (.61). In contrast, the forest plot for Autonomy (Figure 3) illustrates results for a predictor that has the largest number of studies available for summary effect calculation. Although the individual study effect size (r) ranged from .08 to .91, high precision of the summary effect calculation is supported by the large number of studies used for calculation. The summary effect size information is provided for these plots is listed in Table 4. Additional forest plots for other predictors are provided in Appendix F.

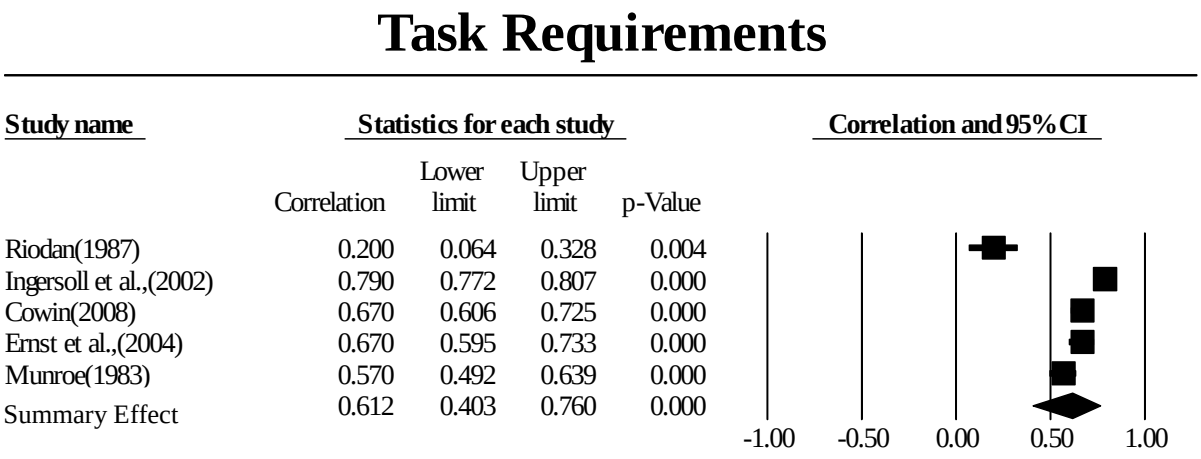



Figure 2: Forest Plot for Task Requirements Predictor

# Autonomy

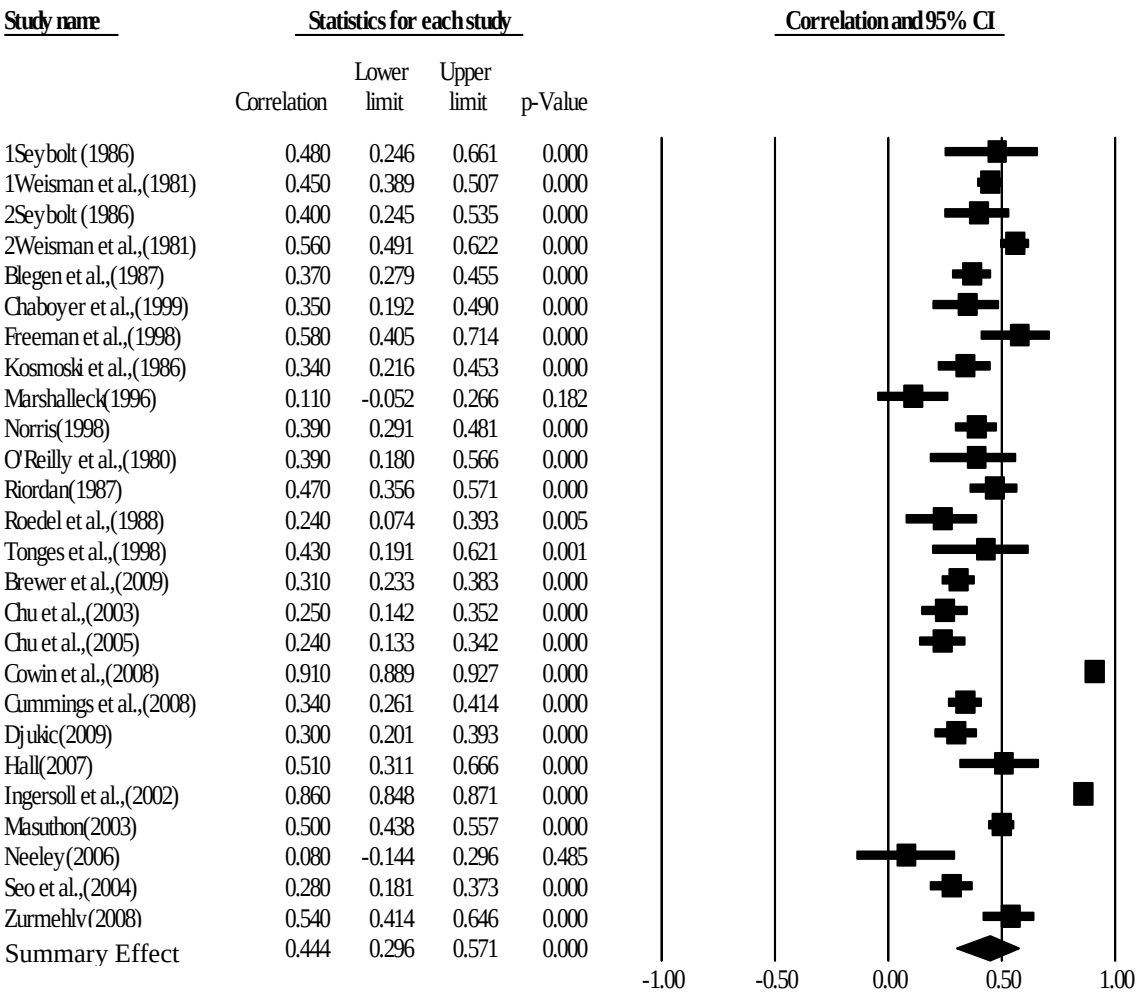



Figure 3: Forest Plot for Autonomy Predictor

***Heterogeneity***

The Q-statistic and the associated p-value, $I^2$, and $T^2$ indicated a high degree of heterogeneity. Significant p-values associated with the Q-statistic, $I^2$ values over 50%, and $T^2$ over zero indicated the need for moderator analysis for nearly all predictors in this analysis. Table 5 displays heterogeneity statistics.

Q-statistics indicated heterogeneity in calculations for 26 of the predictor summary effect sizes ($p < .05$). Only one predictor (i.e., Gender) was found to approach homogeneity ($p = .046$).

The $I^2$ indicated that all summary effect sizes were at least moderately heterogeneous (i.e., 50%), and 19 of the predictor summary effect sizes were highly heterogeneous (i.e., 70.1%)**.** The highest heterogeneity was found for four predictors: Control ($I^2 = 99.36$), Autonomy ($I^2 = 98.35$), Task Requirements ($I^2 = 97.74$), and Wages ($I^2 = 97.34$). Two of the highest heterogeneous predictors (Control and Task Requirements), were also found to have the largest summary effects. The lowest heterogeneity was reported for Workload ($I^2 = 59.91$). The high levels of heterogeneity indicated by the $I^2$ statistic support the need for moderator analysis.

$T^2$ findings also indicated the presence of heterogeneity in the study population used to calculate the summary effect sizes for each of the 27-predictor variables. Twenty-five of the predictors' summary effect sizes were found to be heterogeneous with $T^2$ above zero. The highest heterogeneity was found for Control ($T^2 = .42$), Autonomy ($T^2 = .19$), and Task Requirements ($T^2 = .10$). The two predictors that lacked heterogeneity were gender and age. However, the summary effect for gender was not significant ($r = .03$; 95% CIs [-0.05, 0.10]), and the summary effect for age was small ($r = .05$; 95% CIs [0.01, 0.08]), indicating that both gender and age have a weak relationship with job satisfaction. Q-statistic, $I^2$, and $T^2$ findings indicated the need for moderator analysis for nearly all predictors in analysis.

Table 5: Heterogeneity Statistics

| **Predictor** | **Q-value (df) p** | $\mathbf{I^2}$ | $\mathbf{T^2}$ |
|---|---|---|---|
| Task Requirements | 176.8 (4) ≤ .001 | 97.74 | 0.10 |
| Empowerment | 21.13 (7) ≤.001 | 66.87 | 0.01 |
| Control | 785.50 (5) ≤ .001 | 99.36 | 0.42 |
| Organizational Commitment | 121.55 (7) ≤.001 | 94.24 | 0.03 |
| Positive Affectivity | 76.44 (5) ≤ .001 | 93.46 | 0.06 |
| RN/MD Relationship | 91.11(6) ≤ .001 | 93.41 | 0.05 |
| Autonomy | 1511.38 (25) ≤ .001 | 98.35 | 0.19 |
| Leadership Support | 284.39 (20) ≤ .001 | 92.97 | 0.047 |
| Stress | 140.04 (13) ≤ .001 | 90.72 | 0.03 |
| Task Significance | 171.34 (10) ≤ .001 | 94.16 | 0.06 |
| RN/RN Relationship | 105.00 (16) ≤ .001 | 84.76 | 0.02 |
| Distributive Justice | 63.96 (8) ≤ .001 | 87.49 | 0.03 |
| Variety | 29.45 (10) ≤ .001 | 66.04 | 0.01 |
| Negative Affectivity | 29.51 (4) ≤ .001 | 86.45 | 0.02 |

| Predictor | Q-value (df) p | $I^2$ | $T^2$ |
|---|---|---|---|
| Internal Employment | 25.00 (10) ≤ .001 | 60.01 | 0.01 |
| Routinization | 113.89 (6) ≤ .001 | 94.73 | 0.08 |
| Workload | 24.94 (10) <.01 | 59.91 | 0.01 |
| Wages | 489.51 (13) ≤ .001 | 97.34 | 0.10 |
| Continued Education | 20.44 (5) ≤ .001 | 75.53 | 0.01 |
| Staffing Adequacy | 87.43 (7) ≤ .001 | 91.99 | 0.03 |
| Outside Employment Opportunities | 15.55 (6) <.02 | 61.41 | 0.01 |
| Age | 39.74 (16) ≤ .001 | 59.74 | 0.00 |
| Time in Organization | 37.78 (7) ≤ .001 | 81.47 | 0.01 |
| Educational Level , Expertise | 58.40 (16) ≤ .001 | 72.60 | 0.01 |
| Years of Work Experience | 79.40 (14) ≤ .001 | 82.37 | 0.02 |
| Gender | 9.67 (4) <.05 | 58.63 | 0.00 |
| Time in Position | 58.97 (10) ≤ .001 | 83.04 | 0.01 |

### *Funnel Plots and Rosenthal Fail-Safe N*

Funnel plot tests were conducted on all outcome variables. Asymmetrical funnel plots were found in five variables: Autonomy, Leadership Support, RN/RN Relationship, Task Requirements, and Task Significance. When the trim and fill method was applied to estimate unbiased summary effect sizes to each of the five variables, the adjusted summary effect size differed for Autonomy (.44 to .54), Leadership Support (.44 to .55), RN/RN Relationship (.33 to .28), Task Requirements (.61 to .50), and Task Significance (.38 to .42). Results indicate that Autonomy, Leadership Support, and Task Significance may have a stronger relationship to job satisfaction than is found in the current study. Task Requirements and RN/RN Relationship may have a weaker relationship. All other predictor variables showed symmetrical funnel plots. Figures 4 and 5 provide examples of funnel plots with imputed adjustments.

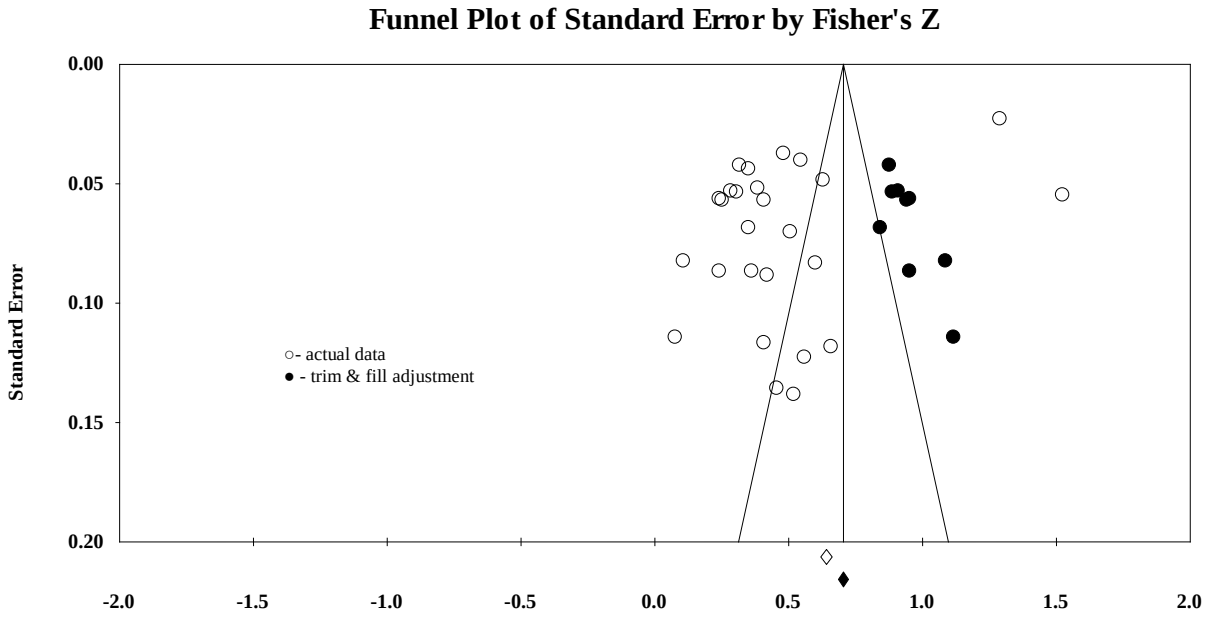



Figure 4: Funnel Plot of Autonomy with Imputed Studies

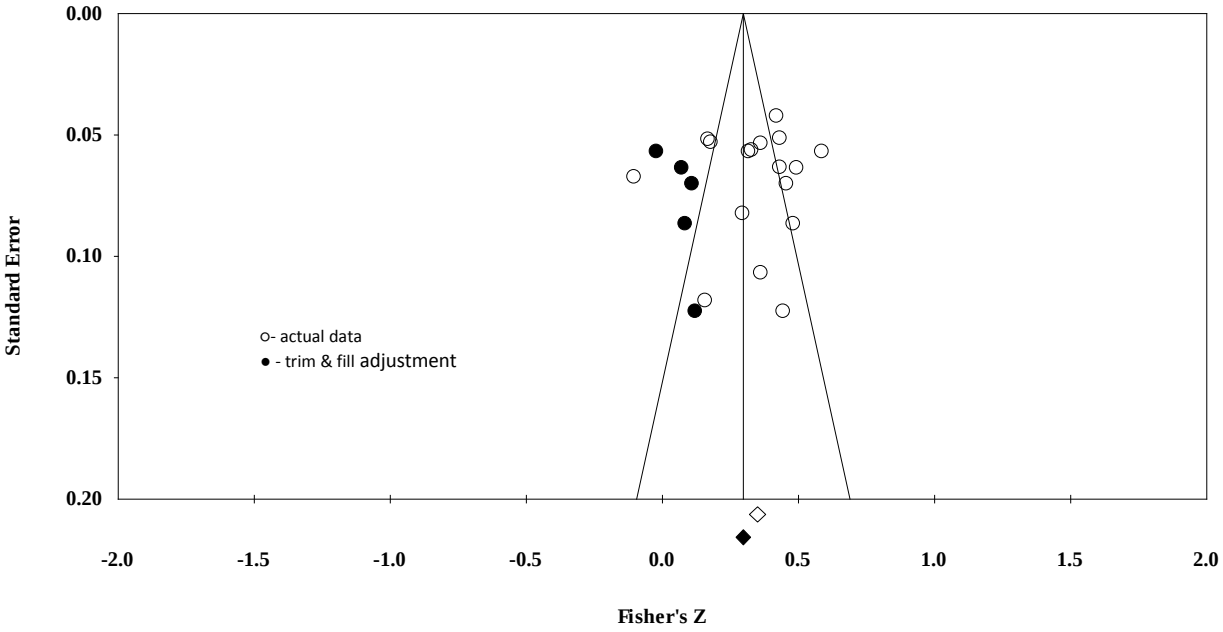



Figure 5: Funnel plot of RN/RN Relationship with Imputed Studies

Although funnel plot analysis indicated potential publication bias, findings from the Rosenthal's *Fail- safe* N approach suggest that the file drawer effect is not problematic in the current analysis. Outside Employment Opportunities and Age reported the lowest number of *Fail-safe* Ns. These two predictors also reported the low summary effect sizes (i.e., r = -.15; 95% CIs [ -.22, -.07] and r = .05; 95% CIs [0.01, 0.08] respectively). Table 6 displays calculated *Fail-safe* Ns of studies needed for each predicator to reduce the correlation value to a p-value >.05.

Table 6: *Fail-Safe* N for 22 Predictors with Significant Summary Effect Sizes

| **Predictor** | ***Fail –Safe* N** |
|---|---|
| Task Requirements | 2015 |
| Empowerment | 1727 |
| Control | 2095 |
| Organizational Commitment | 2849 |
| Positive Affectivity | 486 |
| RN/MD Relationship | 767 |
| Autonomy | 3386 |
| Leadership Support | 6065 |
| Stress | 3537 |
| Task Significance | 1370 |
| RN/RN Relationship | 2129 |
| Distributive Justice | 592 |
| Variety | 482 |
| Negative Affectivity | 169 |
| Internal Employment Opportunities | 651 |
| Routinization | 236 |
| Workload | 431 |
| Wages | 1346 |
| Continuing Education | 156 |
| Staffing Adequacy | 271 |
| Outside Employment Opportunities | 68 |
| Age | 34 |

### *Aim #2: Determine if Summary Effect Sizes of Predictors of Satisfaction Changed Over Three Decades (1980-1989, 1990-1999, and 2000-2009)*

Only three predictors met inclusion criteria for Aim 2 analysis (i.e., minimum of 4 studies per decade): Autonomy, Educational Level or Expertise, and Leadership Support. Autonomy

included 26 studies: nine studies (35%) from the1980s, 5 (19%) from the 1990s, and 12 (46%) from the 2000s. Educational Level or Expertise included 17 studies: five (29%) from the 1980s, four (24%) from 1990s, and eight (47%) from the 2000s. Leadership Support included 21 studies: five (24%) from the 1980s, five (24%) from the 1990s, and 11 (52%) from the 2000s. Normal distribution of study effect sizes was found with Autonomy and Leadership Support. Positive skew was found for Educational Level or Expertise. Natural Log and Square Root transformations were performed but did not substantially reduce this skew. Therefore, the original raw Educational Level or Expertise variable was used in the analysis reported here.

None of the predictors showed significant differences in their relationship with job satisfaction over time: Autonomy ($p = 0.87$); Educational Level or Expertise ($p = 0.15$); Leadership Support ($p = 0.72$). These findings indicate that the effect of time had no significant effect on the relationship between front-line RN job satisfaction and Autonomy, Educational Level /Expertise, or Leadership Support.

### *Aim #3: Assess the Moderating Influences on Satisfaction Predictors over Three Decades (1980-2009)*

Moderator influences were assessed for two covariates: Year of Study Publication and Country of Study. Predictors considered for moderator analysis met the criteria of having more than 10 studies for summary effect size analysis. Twelve predictor variables (44%) were analyzed for the moderating effects of Year of Study, and eight predictor variables (29%) for moderating effect of Country of Study. Tables 7 and 8 display the predictors used in Year of Study Publication moderator analysis and Country of Study moderator analysis.

Analysis with Year of Study Publication as the moderating variable had a significant effect on one predicator variable (i.e., Educational Level or Expertise; $Z = 2.24$; $p < 0.03$), which

indicates that as time has progressed from 1980 – 2009; an increase in education has increased the effect size of job satisfaction. However, high residual variance from all of the twelve moderator analyses indicates that the heterogeneity evidenced by the Q-value, $I^2$, and $T^2$ is not explained by the tested moderator, Year of Study Publication. Table 7 displays the moderator results with Year of Study Publication.

Table 7: Moderating Results with Year of Study Publication

| **Predictor** | **Z** | **Model/ Residual** | **p** |
|---|---|---|---|
| Autonomy | 0.35 | .12/11.95 | 0.72 |
| Educational Level or Expertise | 2.24 | 5.03/19.51 | 0.03 |
| Internal Employment Opportunities | 0.01 | .000/8.96 | .0.98 |
| Leadership Support | 0.65 | .43/39.28 | 0.51 |
| RN/RN Relationship | 1.32 | 1.74/15.02 | 0.19 |
| Stress | -0.01 | .000/11.48 | 0.99 |
| Task Significance | 0.88 | .78/9.88 | 0.37 |
| Time in Position | 0.47 | .22/12.94 | 0.64 |
| Variety | 0.05 | .002/9.91 | 0.96 |
| Wages | 0.45 | .21/5.94 | 0.65 |
| Workload | -1.04 | 1.08/12.01 | 0.30 |
| Years of Work Experience | -0.36 | 0.13/10.28 | 0.71 |

Analysis with Country of Study as the moderating variable was conducted with eight predictors (i.e., Age, Autonomy, Internal Employment Opportunities, Educational Level or

Expertise, Leadership Support, RN/RN Relationship, Stress, and Workload). Country of Study had a significant effect on one predictor variable (i.e., Internal Employment Opportunity; Z = 2.07; p =0.03). That is, the Country of Study affected the relationship between Internal Employment Opportunity and Job Satisfaction. The summary effect size of Internal Employment Opportunities with job satisfaction was found to increase in the U.S. No other predictors found significance with Country of Study as the moderator. Similar to the moderator analysis with Year of Study Publication, high residual variance from these eight moderator analysis indicates that the heterogeneity evidenced by the Q-value, $I^2$, and $T^2$ is not explained by the Country of Study. Figure 6 displays the scatter plot that illustrates moderating effect of Country of Study on Internal Employment Opportunity, and Table 8 displays statistical tests for effects of Country of Study.

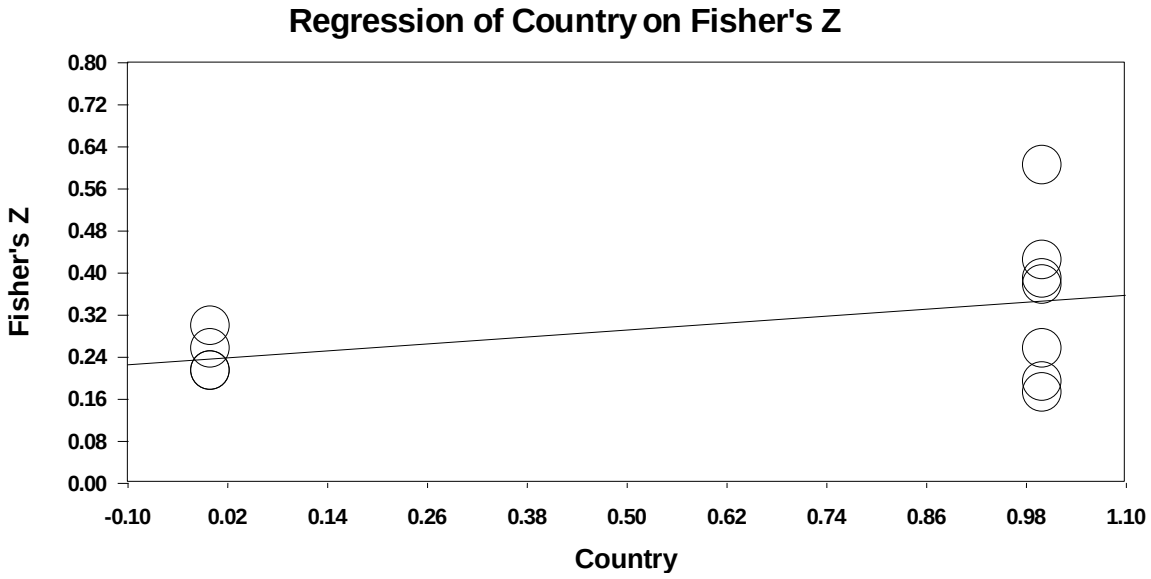



Figure 6: Scatter Plot of County's Moderating Effect on Internal Employment Opportunity

Table 8: Moderating Results with Country of Study

| Predictor | Z | Model/ Residual | p |
|---|---|---|---|
| Age | -0.38 | .14/16.37 | 0.70 |
| Autonomy | 0.66 | .44/13.23 | 0.50 |
| Educational Level or Expertise | 0.21 | .05/22.09 | 0.82 |
| Internal Employment Opportunities | 2.07 | 4.30/10.04 | 0.03 |
| Leadership Support | 1.11 | 1.23/40.61 | 0.26 |
| RN/RN Relationship | 0.74 | .56/15.37 | 0.45 |
| Stress | -0.49 | .24/10.00 | 0.62 |
| Workload | -0.75 | .56/10.84 | 0.45 |

### *Aim #4: Assess the Moderating Influence of Decade on the Correlation between Age and Job Satisfaction to Analyze Generational Changes*

The study effect size for age as continuous variable was found to be normally distributed. Decade was also coded as a dichotomous variable (before 2000, and after 2000).

When age was a treated as continuous moderating variable (1980–2009), and analyzed to determine if time had any effect on the job satisfaction of RNs of different ages, no significant effects of time were identified ($Z = -1.4$; $p = 0.16$). Similarly, analysis with decade as a dichotomous variable found no significant moderating effects ($Z = -1.52$; $p = 0.13$). Findings indicate that age as a predictor variable of satisfaction has not varied over years from 1980-2009. That is, the age of a new graduate RN in the 1970s and 1980s (i.e., Baby Boomers) and 1990s and 2000s (Gen Xers and Millennials) had little effect on job satisfaction.

# CHAPTER FIVE: CONCLUSION

The current study used a meta-analysis of predictor data from published and unpublished studies from 1980–2009 to scientifically elucidate key factors which impact workplace job satisfaction among front-line RNs. Meta-analysis is a non-biased systematic, quantitative statistical synthesis of data in which features are mathematically assigned weights in order to remove subjectivity from the analysis. It yields conclusions about key factors impacting workplace job satisfaction among front-line RNs that are based on quantitative evidence.

This current study provides unique findings about the predictors of job satisfaction, and identifies challenges to synthesizing this literature that arise from the methodological properties of the current state of the science. These findings and challenges add to the body of science regarding front-line RN job satisfaction. This chapter discusses: 1) unique findings of predictors with the largest summary effects and their precision limitations; 2) stable predictors of job satisfaction; 3) predictors with the smallest summary effect sizes; 4) heterogeneity challenges; 5) moderator findings; 6) study limitations, and implications for research, practice, policy, and education.

Data from this study yielded three key predictors of Job Satisfaction for the front-line RN. These predictors were Task Requirements, Control, and Empowerment. All had substantially meaningful summary effect sizes.

Task Requirements was found to be the largest predictor of Job Satisfaction which is unique for two reasons. First, previously conducted meta-analyses indicated that Stress, RN/MD Relationships, Autonomy, Leadership, and Routinization were the largest predictors of Job Satisfaction (Blegen, 1993; Irvine & Evans, 1995; Zangaro & Soeken, 2007). However, in past studies, non-RNs were included in study samples (e.g., LPNs), and the sample of RNs was not

limited to front-line positions (e.g., included RNs in management, education, or other positions). The current study offers a new finding that is specific to the front-line RNs.

Second, previously conducted primary studies have found that Task Requirements are of relative low importance for Job Satisfaction (Best & Thurston, 2004; Foley et al., 2004; Hoffman & Scott, 2003). However, these studies utilized measures that ranked the importance of Task Requirements with selected components (i.e., Professional Status, Task Requirements, Pay, Interaction, Organizational Policies, and Autonomy) from highest to lowest importance. For example, Foley et al. (2004) awarded a relatively low ranking to Task Requirements (i.e., ranked 5$^{th}$ out of 6). Using a ranking method, these studies never assessed the amount of variance in Job Satisfaction that could be explained by Task Requirements relative to other predictors, and results may have underestimated the importance of Task Requirements. Nevertheless, the lower rating of perceived importance of Task Requirements as a predictor of front-line RN Job Satisfaction in some past studies and the uniqueness of the current finding argues for further investigation of this predictor.

Although a large summary effect size was found between Task Requirements and Job Satisfaction, the summary effect calculation was affected by a limited number of primary studies used for analysis, arguing for additional research to improve precision of summary effect sizes. However, the finding of importance of Task Requirements is well-timed because tasks of the front-line RNs are increasing and continually changing with the introduction of policy initiatives (e.g., patient safety initiatives) and concurrent budgetary restraints (e.g., limited support staff). Task Requirements may be more important to Job Satisfaction than currently realized, and could gain importance as a predictor of satisfaction as policy changes increasingly focus on patient satisfaction and value-based purchasing. Responsibilities assigned to staff RNs (and related

tasks) will continue to escalate over time with the absence or limited number of nursing aids or ancillary help in most environments, and they will become far-reaching in the area of clinical autonomy and decision-making because of the anticipated shortage of MDs.

Unlike the finding regarding Task Requirements, the finding about Control is somewhat consistent with other studies in the job satisfaction literature. However, these studies have not found Control to be a consistently high predictor (Campbell, Fowles, & Weber, 2004; Cowin et al., 2008; Ingersoll et al., 2002; Irvine & Evans, 1995; Laschinger & Finegan, 2005; McGilton & Pringle, 1999; Mueller & McCloskey, 1990). In this study, Control was found to be highly related to the Job Satisfaction of the front-line RN. This finding is intuitively obvious, as the staff RN seeks to be able to affect change and perform productive work in an environment which demands more output with less time. This clear result specific to Control may become increasingly important as policy initiatives continue to affect the demands of the front-line RN workforce.

Empowerment, like Control, was found to have a large effect on Job Satisfaction, which is a logical finding because work Empowerment is necessary for Control (Kanter, 1977). Empowerment incorporates the information, resources, and opportunities necessary for effective performance of a job, making Empowerment multifaceted (Kanter, 1977; Laschinger & Finegan, 2005). Empowerment was not included in past job satisfaction meta-analyses (Blegen, 1993; Irvine & Evans, 1995; Zangaro & Soeken, 2007) because the study of Empowerment in the field of nursing did not gain popularity until the 2000s with Laschinger's study of structural and psychological empowerment (Laschinger, 2008; Laschinger & Finegan, 2005; Laschinger et al., 2001). Therefore, the importance of Empowerment on Job Satisfaction may not have been realized in past decades. As a more contemporary predictor of Job Satisfaction, Empowerment

should be considered a multifaceted predictor of Job Satisfaction that may become increasingly important as the workplace becomes more complex.

The current study found moderate summary effect sizes for almost 40% of the predictors included in analysis. Two of these predictors (i.e., Autonomy and Stress) have consistently been found to be related to Job Satisfaction in primary studies and meta-analysis (Aiken, Clarke, & Slone, 2002; Best & Thurston, 2004; Blegen, 1993; Irvine & Evans, 1995; Johnson, 1991 Kovner et al., 2009; Kramer & Schmalenberg, 2008b; Zangaro & Soeken, 2007). Findings from this meta-analysis indicate that Autonomy and Stress are becoming stable predictors of satisfaction, and that continued investigation of their importance as predictors of Job Satisfaction may be unnecessary given a work environment that requires more autonomy and is increasingly stressful.

There were three predictors that offered intriguingly small summary effect sizes: Wages, Workload, and Staffing Adequacy. Findings for these three predictors are supported by previous findings (Blegen, 1993; Chu et al., 2005; Kovner et al., 2006), but remain curious because more recently published studies report that Salary/Wages, Workload, and Staffing Adequacy are prominent dissatisfiers of front-line RNs (Buerhaus et al., 2009; Klopper, Coetzee, Pretorius, & Bester, 2012; McHugh, Kutney-Lee, Cimiotti, Slone, & Aiken, 2011). The considerable changes that the workplace and workforce have experienced over the past thirty years may explain the discrepancy between the current findings (i.e., data from 1980-2009) and other recent studies, and encourages continued exploration into the impact of Wages, Workload, and Staffing Adequacy on Job Satisfaction.

Although remarkable summary effect sizes resulted from the current study, a common finding for all 27 predictors of satisfaction was the evidence of heterogeneity. This indicates that

there were real differences among the various primary studies used in the meta-analysis. Heterogeneity findings highlight what is *not* known about front-line RN job satisfaction. Data implies that while large, moderate, and small summary effect sizes are found between individual predictors and job satisfaction, these findings need to be interpreted with caution. Heterogeneity between studies is an indication that primary study results are influenced by a moderator. Consequently, job satisfaction/predictor relationships may vary between individual primary studies for a variety of reasons, including: (1) differences in the study characteristics (e.g., patient care units, geographic regions, type of healthcare environment, etc.), and/or, (2) dissimilarity in the tools used to measure job satisfaction.

Moderator analysis in the current study was severely restricted because primary study authors did not provide information needed to perform analysis. This was unfortunate because widespread heterogeneity was found among the studies in this analysis, and missing data prevented moderator analysis. Study differences were apparent during the meta-analysis screening process. For example, one study sample included RN staff from 14 NICUs in the US, and another included a random sample of 12,000 RNs from New York working in various disciplines (e.g., Medical/Surgical, Gerontology, Critical Care; Duxbury et al., 1984; Ingersoll et al., 2002). Data specific to individual units or geographic regions were not provided by these and other studies, which prevented moderator analysis based on workplace location.

Of the two moderators that were used for analysis, high residuals were found indicating that additional unknown moderators are responsible for the heterogeneity between studies. Like the finding of heterogeneity between primary studies, the finding that unknown moderators affect the predictor/job satisfaction relationship highlight what is *not* known about the predictors

of job satisfaction for the front-line RN. Additional investigation into potential moderators and their role in the predictor/job satisfaction relationship is warranted.

## Limitations

The current analysis presented here had three limitations. The first limitation was that the data sets for each predictor ranged substantively, from five (5) to twenty-six (26) primary studies. The calculated summary effect sizes for the predictors with the smallest set of studies (e.g., Task Requirements, Control, and Empowerment) were less precise than those which incorporated larger data sets for analysis (i.e., Autonomy). Summary effect sizes of those predictors calculated with less precision are uncertain, whereas those calculated with more precision are robust. Therefore, this study presents tenuous summary effect sizes for Task Requirements, Control and Empowerment because data sets were limited, with Task Requirements summary effect calculation based on five primary studies. Despite the limitation in data sets, new information from this study elucidated the potential importance of these predictors (i.e., Task Requirements, Control, and Empowerment) to Job Satisfaction, and introduces the possibility that some predictors of Job Satisfaction are related to one another.

The second limitation was that the moderator analysis necessary to determine the causes of heterogeneity among primary studies was restricted by the availability of potential moderators extracted from Study Characteristics in primary studies. As a result, this meta-analysis merely scratched the surface with respect to uncovering the causes of predictor/job satisfaction effect size differences in primary study findings. This limitation argues for the need to search for the causes of differences in primary study findings. Future researchers are encouraged to consider the effect of moderators in their primary studies about RN job satisfaction as a potential reason

for inconsistencies between their findings and others in the literature. It is critical that future researchers collect and make available the valuable demographic data needed for future meta-analysis moderator analysis. Ideally, all job satisfaction researchers should include sample size mean ages, type of healthcare organizations (e.g., for-profit, non-for-profit), and results that are unit (e.g., Medical/Surgical, ICU) or hospital specific (e.g., community, teaching, urban, Magnet) if the study sample includes RNs from multiple sites or types of units.

The third limitation was caused by the restricted number of studies (i.e., 17) used to find generational differences in job satisfaction. Thirteen (76%) of the studies were published in the 2000s, and the mean age of participants over all three decades was approximately 40 years. Therefore, the data set may have insufficiently represented the effect of Age on Job Satisfaction in past decades and inadequately represented the influence of the young Millennials currently in the work place. This argues for further study into generational differences before any conclusions are reached as to its importance to understanding predictors of satisfaction.

## Implications for Research

Three research implications surface from the findings of the study and from the meta-analysis process. First, there is a need to review and consolidate tools that measure job satisfaction in the contemporary nursing workforce. As the workplace and workforce changes, a standardized model should be considered to assess which predictors are important for job satisfaction. Kovner et al. (2006) offers a model based on Price's causal model where predictors of satisfaction can be added or subtracted, and tested (Gurney et al., 1997; Kovner et al., 2006; Kovner et al., 2009; Price, 2001). This model could be regarded as the gold standard as it could offer a core set of predictors and measures to be used in all RN job satisfaction studies. The

model could be updated as contemporary predictors of job satisfaction surface (e.g., violence in the workplace). New primary studies that use a standard causal model (i.e., Kovner et al., 2006) could be conducted to explore the predictors of job satisfaction that were found to have unique findings by the current study (i.e., Task Requirements, Control, Empowerment, Wages, Workload and Staffing Adequacy).

Second, there is a need for a meta-analysis of key indicators of job satisfaction from 2002-2012. Results specific to predictors of job satisfaction that focus on the most recent ten years are needed to analyze data from the contemporary workforce and ensure input from the Millennial generation. Research that focuses on satisfaction stimuli of our youngest generations may reveal specific predictors that are important to our youngest workforce. This information could be utilized to guide the model (i.e., Kovner et al., 2006) used to measure job satisfaction.

Third, longitudinal research projects, similar to Kovner and Brewer's multi-state RN Work Project study, could provide information about our youngest cohort of front-line RNs (Robert Wood Johnson Foundation, 2012). Brewer's project aims to learn what influences new nurses with their first job choice, compare job settings of jobs over time, determine whether new nurses move in or out of nursing, and determine why new nurses leave or stay in their jobs. Through longitudinal studies that are specific to Millennials, predictors that are unique to the newest generation may be found.

## Implications for Practice

Findings from the current study provide implications for practice at the organizational and unit level. First, the evolving nature of the literature argues that healthcare organizations need to continually review study findings that focus on predictors of front-line RN job

satisfaction, and update the work environment to reflect a work setting that promotes job satisfaction. This study found predictors including Control, Empowerment, Stress, and Autonomy to be important for Job Satisfaction. The large summary effect size between Empowerment and Job Satisfaction found in this study indicates that this predictor is highly connected to Job Satisfaction. Healthcare organizations could take notice of this finding as they work on ongoing retention strategies that improve the work environment of the nursing workforce. For example, staffing procedures could be introduced that require front-line staff RN input regarding patient acuity and workload. This staffing procedure would give RNs empowerment over their work environment, thereby providing a workplace that positively influences job satisfaction.

Second, Stress was found to be a moderate negative predictor of Job Satisfaction. This finding has been empirically supported for three decades. Nurse managers could employ efforts to reduce stress levels by learning what RN stressors are through discussion with staff, and implementing plans to reduce stressors. For example, an open visiting policy may create stress for staff in an ICU because family members continually interrupt RN/RN shift report. The nurse manager could implement a directive that requests family members to leave during times of shift report, thereby eliminating a staff stressor. Ideally, nurse managers should build in regular staff nurse work-place issues meetings, and consider implementing an "issues" box into which staff could place notes regarding particular stressors and potential methods of relief. The notes could then serve to stimulate discussion at regular workplace issue meetings.

## Implications for Policy

Two implications for policy can be introduced based on the current findings. First, findings in this study indicate that major predictors of satisfaction may directly impact the work of the RN (i.e., Task Requirements). Some tasks that are assumed by the front-line RN were created in response to policy initiatives put forth by The Joint Commission's National Patient Safety Goals (The Joint Commission, 2012). These tasks directly impact the front-line RN workforce and include practice procedures that thwart blood infection and catheter related infections, ensure correct patient identification and medication distribution, prevent decubitus ulcers, and reduce falls. Front-line RNs know best what these tasks entail. Hence, front-line RNs should assist in the developments of healthcare policies and initiatives by serving in liaison positions to The Joint Commission. These RNs can offer a unique perspective about the workplace and the tasks required, as well as suggest successful nursing practices and streamlined techniques for addressing important safety and care quality issues. In this way, the front-line RN is able to directly help mold a working environment that promotes job satisfaction while meeting patient safety needs.

Second, predictors in the current study that found large (i.e., Task Requirements, Control, and Empowerment), and moderate summary effect sizes could be used to guide the development of a tool to be used in an innovative RN job satisfaction program that incentivizes organizational level improvements in the work environment. Front-line RNs would use this tool to assess their work environment, and composite scores would be linked to financial rewards (related to Medicare reimbursement) for healthcare organizations. High scores would indicate organizations where front-line RN satisfaction is high, and a financial reward would be issued. The work environment assessment tool could be continually updated as predictors developed or

changed. Similar to the currently implemented Hospital Consumer Assessment of Healthcare Provider and Systems (HCAHPS) incentive program that focuses on the quality and safety of healthcare practices through consumer input, the RN job satisfaction incentive program could encourage healthcare organizations to focus their efforts on improving the work environment for front-line RNs in ways that matter.

## Implications for Education

Implications for nursing education from the current study could be applied in the classroom two ways that would be supported by the American Association of Colleges of Nursing as innovative educational methods to advance professional nursing education (AACN, 2012). First, predictors from the current study that are found to have large summary effect sizes (e.g., Empowerment) could be used to guide curriculum that teaches student nurses about their future workplace. For example, discussions could include strategies that maximize RN involvement in the workplace (e.g., professional practice programs, nurse practice councils). Knowledge about workplace committees and programs that provide channels to introduce and implement workplace changes could help the student nurses anticipate what they will need to do to maximize Empowerment over their work environment.

Second, educators could offer role playing exercises based on job satisfaction predictors with significant effect sizes (e.g., Stress). Role playing about potentially stressful situations could arm new RNs with responses that may help them in future work situations, with the goal of decreasing stress levels. Vignettes that involve stressful situations may involve relationships or dialog with MDs, RNs, patients, or families; patient cardiac arrests; nursing errors or near misses; or ethical disagreements with family members or MDs. Using teaching techniques with

themes that are based on findings from the current study could help student nurses learn about the contemporary workplace predictors of job satisfaction and help them to have some power over their own job satisfaction.

## Summary

Front-line RNs make up the workforce that directly affect the care of patients in a variety of different health care settings where the work is demanding and continues to change as the workforce transforms with the entry of each generation. The strongest predictors of RN job satisfaction have been difficult to determine because workplaces differ (e.g., acute care, hospice), numerous tools to measure satisfaction exist (e.g., IWS, NWI-R), the workforce is diversified by generations and work positions, and ongoing policy changes directly affect the work of front-line RNs. It appears that predictors of job satisfaction may be as fluid as the environment of the workers. One thing is certain, RN job satisfaction is essential to ensure the health of our nursing workforce and the stability of the healthcare system.

The current meta-analysis provided a useful method to quantify the data regarding the predictors of job satisfaction for the front-line RN from 1980-2009. Findings contribute valid information regarding the potential importance of Task Requirements and Empowerment, and indicate a need for further exploration. The most significant contribution of this study is the identification that top predictors of job satisfaction are unclear, heterogeneity between studies exists, and moderators have not been identified. The meta-analysis is an optimal non-bias tool, that is highly applicable to quantitative assessment of literature, in order to determine significant findings and data-gaps, without predisposed influences. However, this tool is only as good as the literature being used to synthesize. Unfortunately, the current job satisfaction literature has

limitations, insufficient sample size information, inconsistency in measures of key constructs, and inconsistency in constructs included in any single study.

However, the most important predictor or predictors may still be unknown. Findings presented here argue for the use of standard measurement tools and additional meta-analyses, with the goal of expanding our knowledge of front-line RN satisfaction. Determining factors which most influence staff RN satisfaction is of upmost importance because training and retention of qualified personnel is clearly outpaced by the demand for these professionals. Establishing, retaining and maintaining this integral component of the healthcare workforce is of benefit to the entire healthcare system.

# APPENDIX A: SATISFACTION PREDICTORS FOUND IN LITERATURE SEARCH

| Category | Predictor |
|---|---|
| Economic | Wages/pay |
| | Employment opportunities |
| Sociological: Job characteristics | Autonomy |
| | Control over practice/empowerment |
| | Leadership styles/decision-making styles |
| | Work relationships |
| | Workload/distributive justice/staffing adequacy/task requirements |
| | Violence |
| | Stress (physical and psychological) |
| | Sufficiency of support, supplies, and equipment |
| | Scheduling and shift work |
| | Routinization/variety |
| | Continued education support |
| Sociological: Structural characteristics | Facility type: Community, teaching/ academic long-term |
| | Magnet/non-Magnet status |
| | Unit type: ICU, PACU, oncology, NICU/PICU |
| Individual | Age |
| | Gender |
| | Educational level |
| | Experience |
| Psychological | Positive/negative affectivity |
| | Task significance |
| | Organizational commitment |

# APPENDIX B: MEASURES AND FRAMEWORKS BY THEORY

| Measure | Theoretical Framework | Reference |
|---|---|---|
| | Theory: Maslow/Hertzberg's 2-factor | |
| McCloskey/Mueller Satisfaction Scale (MMSS)<br>Index of Work Satisfaction (IWS)<br>National Database of Nursing Quality Indicator-adapted Index of Work Satisfaction (NDNQI-Adapted Index)<br>Home Healthcare Nurses' Job Satisfaction Scale (HHNJS)<br>Staff Satisfaction Scale (SSS)<br>Nursing Job Satisfaction (NJS) | Maslow:<br>Humans are motivated to fulfill needs that are essential for psychological and physical health. Needs are arranged from lowest to highest, and unmet needs at each level motivate people.<br>Hertzberg:<br>Satisfiers and dissatisfiers in workplace are not on a continuum. Separate factors elicit dissatisfaction (hygiene factors) than draw out satisfaction (motivators). Hygiene factors (extrinsic) are necessary basic needs for a human to work and include company policy and administrative requirements, working conditions, supervision, relationships with colleagues and peers, salary, and security. If hygiene factors are not fulfilled, dissatisfaction will develop. However, job satisfaction or motivation can never be expected when hygiene factors are met. The highest feeling that can be experienced by fulfilled hygiene factors is neutrality. | Mueller & McCloskey, 1990<br>Best & Thurston, 2004; Curtis, 2007<br>Taunton et al., 2004<br>Ellenbecker & Byleckie, 2005<br>Hall, VonEndt, & Parker, 1981 |
| | Theory: Need Fulfillment (with nurses' work and organizational traits) | |
| Nursing Work Index (NWI)<br>Nursing Work Index-Revised (NWI-R)<br>Practice Environment Scale (PES)<br>Single Factor (NWI-R) | A person is satisfied if he/she obtains what is desired (Korman, 1971). Conversely, when he/she does not get something that is personally important, dissatisfaction occurs. The level satisfaction or dissatisfaction correlates directly with importance of the satisfier. | Aiken & Patrician, 2000<br>Kramer & Schmalenberg, 2005<br>Lake, 2002<br>Cummings et al., 2006 |
| | Theory: Kanter's Empowerment | |
| Conditions for Work Effectiveness Questionnaire II (CWEQ-II) | Kanter's original framework consisted of three variables that contributed to the empowerment model: structure of opportunity, structure of power, and the proportional distribution of people (Kanter, 1977). The model has been refined, tested, and augmented by nursing | Laschinger, 2008b; Laschinger et al., 2003; Laschinger & Finegan, 2005; Laschinger et al., 2009; Lautizi et al., 2009 |

| Measure | Theoretical Framework | Reference |
|---|---|---|
| Essentials of Magnetism (EOM) | research scientists since 1992, and specifically adapted and supported for use in nursing population (Laschinger et al., 2003; Laschinger, 2008[a]). The outcomes that are specific to nursing empowerment (satisfaction, commitment, and low burnout). | Kramer & Schmalenberg, 2004; Schmalenberg & Kramer, 2008 |
| | Theory: Job Characteristics | |
| Job Diagnostic Survey (JDS) | Job characteristics (i.e., skill variety, task identity, task significance, autonomy, and feedback), motivation and personality (i.e., experienced meaningfulness at work, experienced responsibility for outcomes of the work, knowledge of actual results of the work activities), and psychological states that contribute to the reaction to the work experience. Job satisfaction is one of the reactions or outcomes. | Hackman & Oldham, 1976; Spector, 1997 |
| | Theory: Job/Expectations/Needs | |
| Job Satisfaction Survey (JSS) | Cognitive processes compare aspects of an existing job to individual expectations. | Spector, 1985 |
| Job Descriptive Index (JDI) | | Smith, Kendall, & Hulin, 1969 |
| Minnesota Satisfaction Questionnaire (MSQ) | | Weiss, Dawis, England, & Lofquist, 1967 |
| | Theory: Social Exchange | |
| Price-Mueller causal model | Key assumptions are that employees value certain conditions of work and if these valued conditions are found in the workplace, satisfaction occurs. | Blegen & Mueller, 1987; Gurney et al., 1997; Kovner et al., 2006 |

# APPENDIX C: MEASURES AND THEORETICAL BASES

Measurement of nursing job satisfaction has been accomplished using tools rooted in several different theoretical frameworks. These frameworks include Maslow's hierarchy of needs, Hertzberg's two-factor, Korman's need fulfillment, Kanter's empowerment, Hackman and Oldham's job characteristics, cognitive processes, and social exchange theories.

Maslow's (1943) hierarchy theory serves as the theoretical basis for the MMSS, which has eight subscales: extrinsic rewards (e.g., pay, benefits), scheduling (e.g., part-time, full-time), family/work balance, coworkers, interaction (care method), professional opportunities (research participation), praise and recognition (from supervisors and peers), control, and responsibility (Mueller & McCloskey, 1990). According to Maslow's theory, humans are motivated to fulfill needs that are essential for psychological and physical health. The needs are arranged from lowest to highest, and unmet needs at each level motivate people. Although this instrument has been used extensively, weak psychometric properties are found (Roberts et al., 2005).

Hertzberg's two-factor theory has been used to guide widely used measures of job satisfaction. Hertzberg's theory was published in the late 1950s and used Maslow's (1943) tenets as the basis for the two-factor theory. Like Maslow's theory, Hertzberg's two-factor theory is considered a motivational theory (Korman, 1971; Lawler, 1973; Spector, 2005). According to Hertzberg, satisfiers and dissatisfiers in the workplace are not on a continuum. That is, separate factors elicit dissatisfaction (hygiene factors) than draw out satisfaction (motivators). Hygiene factors (extrinsic) are needs basic for a human to work and include company policy and administrative requirements, working conditions, supervision, relationships with colleagues and peers, salary, and security. If hygiene factors are not fulfilled, dissatisfaction will develop. However, job satisfaction or motivation can never be expected when hygiene factors are met. The highest feeling that can be experienced by fulfilled hygiene

factors is neutrality. For example, if working conditions are improved, a worker's job satisfaction or motivation will not increase because this work feature is a hygiene factor.

The motivating (intrinsic) factors in Hertzberg's two-factor theory provide job satisfaction because work is viewed as stimulating and challenging. Factors include achievement, recognition, complex work characteristics, responsibility, opportunity for advancement, and the prospect of professional growth. These factors can motivate and satisfy employees. According to Hertzberg's theory, an employee can be very satisfied and very dissatisfied at the same time. For example, a person can be very dissatisfied with his or her pay at work, yet very satisfied with the challenging aspect of his or her role in the company.

Three nursing measures with underpinnings based on the two-factor theory have been used to measure nursing job satisfaction in a variety of work environments. First, the IWS has six subscales: (a) pay, (b) autonomy, (c) task requirements (e.g., time for care), (d) organizational policies (e.g., decision-making processes, advancement opportunities), (e) professional status (e.g., perceived status of nursing), and (f) interaction (e.g., RN/RN, RN/MD, formal and informal) (Best & Thurston, 2004; Curtis, 2008). Components are measured on both importance and current level of satisfaction. Second, the NDNQI-Adapted Index uses the same subscales as the IWS, but the subscale items and scoring are different (Taunton et al., 2004). Third, the HHNJS was developed using intrinsic and extrinsic factors that are specific to home health RNs (i.e., organizational characteristics, salary and benefits, group cohesion physicians, group cohesion peers, autonomy and flexibility, stress and workload, autonomy and independence, autonomy and control, and professional growth) (Ellenbecker & Byleckie, 2005a, 2005b).

According to need fulfillment theory, a person is satisfied if he or she obtains that which is desired (Korman, 1971). Conversely, when he or she does not get something that is personally

important to him or her, dissatisfaction occurs. The level satisfaction or dissatisfaction correlates directly with the importance of the satisfier. That is, if the satisfying predictor is very important to the employee, he or she will be very satisfied if met, and very dissatisfied if not met.

The NWI and NWI-R are both based on need fulfillment theory (Aiken & Patrician, 2000; Kramer & Schmalenberg, 2005). Five subscales in the NWI scale (Kramer & Schmalenberg, 2005) include nurse participation in hospital affairs; nursing foundation for quality of care; manager ability, leadership, and support of nurses; staffing and resource adequacy; and collegial nurse-physician relations. The five subscales in Aiken and Patrician's (2000) NWI-R include professional advancement, support of immediate supervisors, staffing adequacy, respect and relationships, and standards of professional nursing. Some researchers have used the NWI-R as a single factor (Cummings et al., 2006; Lake, 2002) or have used items from the factors including control and nurse-physician relationships to create the Practice Environment Scale (PES).

A theoretical framework that is used to guide the study of nursing work environments is Kanter's (1977) work empowerment theory. Rosabeth Moss Kanter's model of organizational empowerment describes specific items or tools within work environments that enable workers to have meaningful employment experiences, with outcomes that include positive work behaviors and attitudes. Kanter maintained that the tools necessary for empowerment revolve around access to power within the organization, and include information, resources, and opportunities. Workplace tools enable employees to obtain resources needed to work effectively within the work environment by meeting individual and organizational goals. Although this is not a satisfaction theory, one of the outcomes of Kanter's empowerment theory is satisfaction. The other outcomes include low burnout (i.e., stress), commitment, and trust, which are found to

significantly relate to job satisfaction (Laschinger & Finegan, 2005; Yang & Chang, 2008; Zangaro & Soeken, 2007).

The research that supported the Kanter's (1977) original framework is grounded in ethnographic research from one large multinational company and presented in *Men and Women of the Corporation*. Data were extracted from surveys, interviews, meetings, and documents from all hierarchical levels in the company during the early 1970s. Kanter's original framework consisted of three variables that contributed to the empowerment model: structure of opportunity, structure of power, and the proportional distribution of people. The model has been refined, tested, and augmented by nursing research scientists since 1992, and specifically adapted and supported for use in nursing population (Laschinger, 2008a; Laschinger et al., 2003). Outcomes that are specific to nursing empowerment (i.e., satisfaction, commitment, and low burnout) are empirically supported (Laschinger & Finegan, 2005; Laschinger et al., 2009; Lautizi et al., 2009). The CWEQ-II was developed to measure employee access to work empowerment structures described by Kanter. Construct validity and acceptable reliabilities are supported (Laschinger, 2008b; Laschinger et al., 2003).

Kanter's (1977) theory of empowerment provides theoretical and empirical support for the use of RN/MD power measured by the EOM. Lines of power and information sharing are assessed through the RN/MD relationship because this relationship is viewed as one of the eight essential processes necessary to provide quality patient care in a healthy work environment. Items in the RN/MD subscale measure relationships as collegial, collaborative, student/teacher, or friendly stranger. Collegial relationships are most desirable because equal power can result in optimal information sharing and high-quality outcomes for patients. The other seven processes measured by the EOM were derived from qualitative analysis, and include autonomous nursing

practice, supportive nurse managers, control over nursing practice, support for education, perception that staffing in adequate, working with clinically competent coworkers, and a working culture in which concern for patients is paramount (Kramer & Schmalenberg, 2004, 2008a).

Fifth, the job characteristic theory is designed for application in various work environments and suggests that job characteristics can directly affect employee attitudes and behaviors at work, thereby leading to desired work outcomes (Hackman & Oldham, 1976; Spector, 1997). This theory includes five subscales to measure the nature of the job (i.e., skill variety, task identity, task significance, autonomy, and feedback), motivation and personality (i.e., experienced meaningfulness at work, experienced responsibility for outcomes of the work, knowledge of actual results of the work activities), and psychological states that contribute to the reaction to the work experience. Job satisfaction is one of the reactions. The JDS is used to measure job satisfaction in nursing according to six subscales (supervision; opportunity for autonomy and growth; career, continuing education, and promotion; pay and benefits; job stress and physical demand; and job and organizational security).

Spector (1985) developed a tool based on his belief that human service industries are different than other organizations because of evidence that satisfaction is associated with performance and client outcomes. Spector's JSS was developed with the theoretical underpinnings of Locke (Spector, 1985) and P.C. Smith, Kendall, and Hulin (1969), who postulated that cognitive processes compare aspects of an existing job to individual expectations. The JSS measures job satisfaction according to nine subscales: pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures, coworkers, nature of work, and communication. Original psychometric testing included RNs (Spector, 1985).

The final and possibly the most inclusive model of job satisfaction predictors is the Price-Mueller causal model that is based on social exchange theory (Gurney et al., 1997; Kovner et al., 2006). Key assumptions are that employees value certain conditions of work and if these valued conditions are found in the workplace, satisfaction occurs. The variables in the model were identified through existing literature and were expanded (Blegen & Mueller, 1987; Gurney, Mueller, & Price, 1997; Kovner et al., 2006). This model included demographic variables (e.g., gender, tenure, and setting), which have been used as predictor variables in several studies (Curtis, 2008; Halm et al., 2005; Li & Lambert, 2008; Mrayyan, 2005).

# APPENDIX D: PRIMARY STUDY DATA

| Study | n | Country | Number of Predictors Study Offered for Analysis | Job Satisfaction Measure |
|---|---|---|---|---|
| Amendolair (2007) | 1091 | US | 6 | IWS |
| Arquette (1990) | 182 | US | 5 | MSQ and Hoppock Job Satisfaction Scale |
| Blegen et al. (1987) | 370 | US | 11 | Price and Mueller's items |
| Boswell (1992) | 51 | US | 1 | NJS |
| Brewer et al. (2009) | 553 | US | 13 | 5-item Quinn and Staines Satisfaction Scale |
| Buccheri (1986) | 181 | US | 1 | JSS |
| Cavanagh (1992) | 221 | US | 9 | Price and Mueller satisfaction questionnaire |
| Chaboyer et al. (1999) | 135 | Australia | 7 | JSS |
| Chu et al. (2003) | 308 | Taiwan | 11 | A tool developed by Kim, Price, Mueller, and Watson |
| Chu et al. (2005) | 314 | Taiwan | 10 | Measure based on Price's model |
| Cowin et al. (2008) | 332 | Australia | 6 | IWS |
| Cummings et al. (2008) | 515 | Canada | 8 | NIWI-R |
| Decker (1997) | 376 | US | 7 | Items from Hackman and Lawler<br>Items from Brayfield and Rothe |
| Dion (2006) | 115 | US | 1 | JSS |
| Djukic (2009) | 347 | US | 13 | Quinn and Staines Satisfaction Scale |
| Duxbury et al. (1984) | 283 | US | 2 | MSQ |
| Ernst et al. (2004) | 249 | US | 6 | NJS |

| Study | n | Country | Number of Predictors Study Offered for Analysis | Job Satisfaction Measure |
|---|---|---|---|---|
| Flanagan et al. (2002) | 287 | US | 6 | IWS |
| Freeman et al. (1998) | 74 | Canada | 8 | Price and Mueller's Job Satisfaction Tool |
| Gowell et al. (1992) | 84 | US | 1 | IWS |
| Hall (2007) | 69 | US | 8 | Single item measuring job satisfaction |
| Hoffman et al. (2003) | 208 | US | 1 | IWS |
| Humphrey (1986) | 88 | US | 3 | Instrument designed by Porter (based on need fulfillment theory), and modified by Munson and Heda |
| Ingersoll et al. (2002) | 1853 | US | 6 | IWS |
| Khumyu (2002) | 447 | Thailand | 1 | JSS |
| Koerner (1981) | 32 | US | 2 | JDI |
| Kosmoski et al. (1986) | 214 | US | 4 | JDI |
| Larrabee et al. (2003) | 90 | US | 4 | Work Quality Index (WQI) |
| Laschinger et al. (2001) | 3016 | Canada | 1 | NWI |
| Laschinger et al. (2005) | 273 | Canada | 1 | Subscale from William's and Cooper Pressure Management Indicator |
| Laschinger et al. (2009) | 612 | Canada | 2 | JDS |
| Laschinger (2008) | 234 | Canada | 2 | 4-items from JDS |
| Lautizi et al. (2009) | 77 | Italy | 1 | Modification of Hackman and Oldham JDS |
| Lu et al. (2007) | 512 | China | 2 | JSS |

| Study | n | Country | Number of Predictors Study Offered for Analysis | Job Satisfaction Measure |
|---|---|---|---|---|
| Lucas (1991) | 505 | US | 1 | Munson and Heda Job Satisfaction Tool- designed for hospital nurses |
| Lum et al. (1998) | 290 | Canada | 2 | Modified IWS |
| Ma (2002) | 3472 | US | 2 | South Carolina Nursing Survey: 10-item instrument developed for study |
| Manojlovich et al. (2002) | 347 | Canada | 1 | 4-items from JDS |
| Manojlovich (2005) | 284 | US | 3 | IWS |
| Marshalleck (1996) | 149 | US | 7 | Staff Nurse Questionnaire (Price and Mueller) |
| Masuthon (2003) | 611 | Thailand | 4 | JSS |
| McCloskey et al. (1987) | 320 | US | 1 | McCloskey Reward/Satisfaction (MMSS) |
| Molassiotis et al. (1996) | 40 | US | 4 | Measure of Job Satisfaction (MJS) |
| Mrayyan (2005) | 438 | Jordan | 4 | MMSS |
| Munroe (1983) | 329 | US | 6 | Motivator and Hygiene Tool (Hertzberg) |
| Neeley (2006) | 79 | US | 11 | Index of Job Satisfaction modified from Price and Mueller/multiple measures |
| Ning et al. (2009) | 598 | China | 2 | MSQ |
| Norbeck (1985) | 180 | US | 1 | NJS |
| Norris (1998) | 308 | US | 7 | JDS |
| O'Reilly et al. (1980) | 76 | US | 3 | 5-item Job Satisfaction Scale |
| Riordan (1987) | 204 | US | 9 | SSS– based on IWS |

| Study | n | Country | Number of Predictors Study Offered for Analysis | Job Satisfaction Measure |
|---|---|---|---|---|
| Roedel et al. (1988) | 135 | US | 3 | JDS |
| Royal (2009) | 91 | US | 7 | General Job Satisfaction Scale (GJS; Hackman and Oldham) |
| Ruggiero (2005) | 247 | US | 3 | General Job Satisfaction Scale (GJS) |
| Seo et al. (2004) | 353 | Korea | 11 | Hackman and Oldham postulation |
| Seybolt (1986)1 | 55 | US | 2 | Measure based on Hackman and Oldham postulates |
| Seybolt (1986)2 | 130 | US | 3 | Measure based on Hackman and Oldham postulates |
| Shaver et al. (2003) | 325 | US | 2 | 3-items used by Lynn and Morgan |
| Stacciarini et al. (2004) | 453 | Brazil | 1 | Occupational Stress Indicator subscale |
| Tang (2005) | 247 | US | 2 | Price Job Satisfaction tool and MMSS |
| Tonges et al. (1998) | 57 | US | 3 | JDS |
| Weisman et al. (1981)1 | 705 | US | 6 | JDI |
| Weisman et al. (1981)2 | 422 | US | 6 | JDI |
| Zurmehly (2008) | 146 | US | 2 | MSQ |

# APPENDIX E: PREDICTOR DEFINITIONS

| Predictor | Definition | Others Terms for Predictor |
|---|---|---|
| **Age** | Age | Age |
| **Autonomy** | The degree to which the job provides substantial freedom, independence and discretion to make decisions in daily work activities using expertise and decision-making ability (IWS; Stamps & Piedmonte, 1986). | Critical thinking, job, authority (Marshalleck, 1997); discretion (the amount of employee input in work-related decisions; Kosmoski & Calkin, 1986). |
| **Continued Education** | The offering of continuing education opportunities, which include advance degree money, or courses. | |
| **Control** | The amount of staff participation in administrative decision-making processes; Organizational Policies IWS component: "The nursing staff has sufficient control over scheduling with own work shifts in hospital; there is ample opportunity for nursing staff to participate in the administrative decision-making process; the nursing administrators generally consult with staff on daily problems and procedures" (Stamps & Piedmont, 1986, p. 46 ). | Participatory teamwork, influence over unit or ward (Adams & Bond, 2000); organizational policies (Stamps & Piedmont, 1986); standardization, policies/procedures, working conditions work environment, participation, centralization (Marshalleck, 1997). |
| **Distributive Justice** | The degree to which rewards and punishments are related to performance inputs into the organization (Homan, 1961). | Fair compensation for job or work done. |
| **Educational Level or Expertise** | Levels include Diploma, Associate Degree (AD), Bachelor of Science in Nursing (BSN), Master of Science (MS or MSN), and | Educational level, opportunities to use post-training, professional practice (Adams & Bond, 2000); general training, opportunity. |

| Predictor | Definition | Others Terms for Predictor |
|---|---|---|
| | PhD in Nursing. The degree to which personnel possess professional skills or education (Kosmoski & Calkin, 1986). | |
| **Empowerment** | According to Kanter (1977), having the access to information, support, access to resources, and opportunity to allow one to do their job. | Referred to as empowerment, structural empowerment (Manojlovich & Laschinger, 2002). |
| **Gender** | Male, female | Male, female |
| **Internal Employment Opportunities** | The opportunity for advancement (Munroe, 1983); a person's opportunity to advance (JDI; Spector, 1997). | Promotion, praise & recognition, promotion opportunity or chances (Freeman & O'Brien-Pallas, 1998; Seo et al., 2004); feeling of accomplishment from job; incentive; feedback on work performance that the job incumbent receives, and perceives that a good job will be rewarded (Lawler, 1973); professional growth or mobility within the organization (Price, 2000); opportunity for advancement; internal labor market. |
| **Leadership Support** | Leadership that is perceived positively or negatively by employees, which can assist or affect them in their work; nursing administration; the visibility and power and communication from the chief nursing officer (e.g., chief nursing executive is equal in power to other top-executive hospital executives; NWI-R; Boyle et al., 2006). | Leadership, consideration (Gillies, Franklin, & Child, 1990); support, supervision, supervisor feedback (Spector, 1997); feedback (Marshalleck, 1997; Chaboyer et al., 1999); team building (Adams & Bond, 2000); supervision, supervisor support (Price, 2001); supportive nursing management (NWI-R; Boyle et al., 2006); organizational requirements, communication from leadership, support in resolving conflict (Cummings et al., |

| Predictor | Definition | Others Terms for Predictor |
|---|---|---|
| | | 2008); responsiveness (Weisman et al., 1981); transformational leadership (defined as idealized attributes, idealized behaviors, inspirational motivation, intellectual stimulation, individualized consideration; Larrabee et al., 2003), head nurse support or satisfaction (Decker, 1997); leadership communication (Cavanagh, 1992). |
| **Negative Affectivity** | Involves an individual's perception of their own stressors and coping skills (Watson, Clark, & Tellegan, 1988) and can manifest in moods that include anger, fear, and nervousness. | |
| **Organizational Commitment** | A broad term that involves the commitment an employee has to remain with an employer with loyalty. | Always called organizational commitment. |
| **Outside Employment Opportunities** | The local job market availability (Price, 2001). | Likelihood of obtaining jobs in local area as good, worse, or better than current job (e.g., "how easy or difficult would it be for you to find a job with another employer in the local job market in which you work or live that is as good as the one you have now?" (Kovner et al., 2009, p.86). |
| **Positive Affectivity** | A reflection of the degree to which an individual feels a sense of enthusiasm, high activity, and alertness connected with work over time (Watson et al., 1988); job | Affective commitment (Royal, 2009). |

| Predictor | Definition | Others Terms for Predictor |
|---|---|---|
| | enjoyment; the extent to which nurses like their jobs in general, and they find real enjoyment in their jobs (job enjoyment; Boyle et al., 2006). | |
| **RN/MD Relationship** | The relationship between RN/MDs; the physician's understanding and appreciation of nursing staff (IWS; Stamps & Piedmonte, 1986). | Collaboration with medical staff (Adams & Bond, 2000); interaction and cohesion with medical staff (IWS; Stamps & Piedmonte, 1986), doctor/nurse relationship, collaborative practice (Larrabee et al., 2003). |
| **RN/RN Relationship** | The relationship between RN/RN ranging from clinical support (IWS, Stamps and Piedmonte, 1986) to support when personal issues affect work situation (e.g., illness or death in family; Tang, 2005). | Collegial, social contact, teamwork, cohesion (Adams & Bond, 2000), group or work cohesion (Larrabee et al., 2003; Djukic, 2009), new graduate sense of belonging (Jackson, 2005), coworkers interactions (Stamps, 1997); social interaction (Riodan, 1987; Blegen & Mueller, 1987), interaction, integration, coworker support (Tang, 2005), feedback (Marshalleck, 1996). |
| **Routinization** | The degree to which employees perform repetitive tasks (Seo et al., 2004). | |
| **Staffing Adequacy** | The average number of patients cared for by each nurse; a predictor defined as having enough nurses to ensure quality patient care (Cummings et al., 2008). This may include providing support services (e.g., respiratory treatments, and phlebotomy requirements), and allow for discussion of patient care problems with | Nurse staffing, staffing adequacy, nurse/patient ratio or RN/patient ratio; short staffing, patient load (how many patients RNs are responsible for (Shaver & Lacey, 2003). |

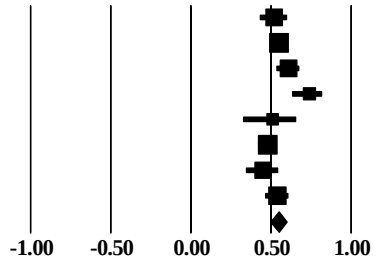
| Predictor | Definition | Others Terms for Predictor |
|---|---|---|
| | colleagues. | |
| **Stress** | A predictor that is consistently negatively and strongly associated with job satisfaction; stress, strain experienced by people in service professions (Maslach, 2003). | Burnout, Strain |
| **Task Requirements** | Tasks that must be done as part of the job (Stamps, 1997), "There is too much clerical and "paperwork" required of nursing personnel in this hospital; I could deliver much better care if I had more time with each patient" (Stamps & Piedmonte, 1986, p. 45). | Task requirements; tasks (Riordan, 1987); responsibility (Munroe, 1983). |
| **Task Significance** | The degree to which the jobs provide substantial impact on the lives or work of other people (JDS; Hackman & Oldham, 1976). The significance of one's job, as viewed by employee or others (e.g., "most people appreciate the importance of school nursing" (Foley et al., 2004, p. 971); how a job is important to themselves and how other people value them as nurses (I make a difference in my job; the public values the work I do; Chaboyer et al., 1999). | Job status, job prestige, prestige responsibility, (Munroe, 1983) importance, challenges, professional status (Stamps, 1997), ability utilization or use of abilities; physician task delegation, pride, prestige, job valuation (Chaboyer et al., 1999). |
| **Time in Organization** | Time with current employer. If there are correlates that include both "years in institution" and "years in current position", | Years in institution, unit tenure (Decker, 1997). |

| Predictor | Definition | Others Terms for Predictor |
|---|---|---|
| | the correlate "years in institution" will be used. | |
| **Time in Position** | Years or time in current position. If there are correlates that include both "years in institution" and "years in current position", the correlate "years in current position" will be used. | Length of time working in the same area or unit. |
| **Variety** | The degree to which the job requires a variety of different activities in carrying out the work which involve the use of a number of different skills and talents of a person (Hackman & Oldham, 1976; Kosmoski & Calkin, 1986). | Variability in job tasks. |
| **Wages** | Dollar remuneration received for work done; pay for work that is not part of the pay compensation (Stamps, 1997; Stamps & Piedmont, 1986). | Salary, wage, compensation, time off, vacation, day care, health care, extrinsic rewards, rewards (Marshalleck,1997). |
| **Workload** | The perceived adequacy of time available to provide quality care to patients in a controlled, effective manner.; role overload is having too many tasks to accomplish and not enough time or resources to complete them (Rizzo, House, & Lirtzman, 1970). | Work content, non-patient activities, job related work, sufficiency of time to do job, time, workload, appropriate workload, role overload (Rizzo, et al., 1970); quantitative & qualitative workload or the amount of performance your job requires (Spector, 1997); degree to which work demands are excessive (Seo et al., 2004). |
| **Years of Work Experience** | Total number of years in the profession of nursing. | Experience, work experience (Decker, 1997); total years of nursing experience (Humphrey, 1986). |

# APPENDIX F: FOREST PLOTS OF PREDICTORS

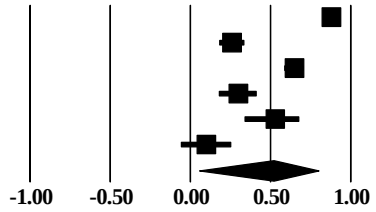
# Empowerment

| Study name | Correlation | Lower limit | Upper limit | p-Value |
|---|---|---|---|---|
| Laschinger et al.,(2005) | 0.520 | 0.428 | 0.602 | 0.000 |
| Ning et al.,(2009) | 0.550 | 0.491 | 0.604 | 0.000 |
| Manojlovich(2005) | 0.610 | 0.531 | 0.678 | 0.000 |
| Larrabee et al.,(2003) | 0.740 | 0.629 | 0.821 | 0.000 |
| Lautizi et al.,(2009) | 0.510 | 0.323 | 0.659 | 0.000 |
| Laschinger et al.,(2009) | 0.480 | 0.417 | 0.539 | 0.000 |
| Laschinger(2008) | 0.450 | 0.341 | 0.547 | 0.000 |
| Manojlovich(2002) | 0.540 | 0.461 | 0.611 | 0.000 |
| | 0.546 | 0.492 | 0.595 | 0.000 |



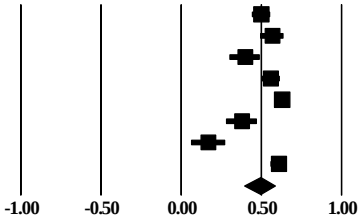

# Control

| Study name | Correlation | Lower limit | Upper limit | p-Value |
|---|---|---|---|---|
| Ingersoll et al.,(2002) | 0.880 | 0.869 | 0.890 | 0.000 |
| Cummings et al.,(2008) | 0.260 | 0.178 | 0.339 | 0.000 |
| Cowin et al.,(2008) | 0.650 | 0.583 | 0.708 | 0.000 |
| Cavanagh(1992) | 0.300 | 0.175 | 0.416 | 0.000 |
| Hall(2007) | 0.530 | 0.335 | 0.681 | 0.000 |
| Marshalleck(1996) | 0.100 | -0.062 | 0.257 | 0.225 |
| | 0.516 | 0.052 | 0.797 | 0.031 |



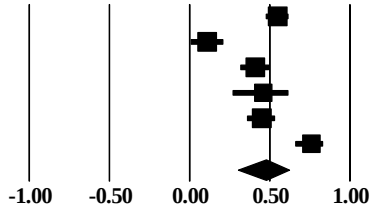

# Organizational Commitment

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Laschinger et al.,(2009) | 0.500 | 0.438 | 0.557 | 13.556 | 0.000 |
| Chu et al.,(2005) | 0.570 | 0.490 | 0.640 | 11.419 | 0.000 |
| Lumet al.,(1998) | 0.400 | 0.299 | 0.492 | 7.177 | 0.000 |
| Lu et al.,(2007) | 0.560 | 0.497 | 0.617 | 14.277 | 0.000 |
| Ingersoll et al.,(2002) | 0.630 | 0.602 | 0.657 | 31.890 | 0.000 |
| McCloskey et al.,(1987) | 0.380 | 0.277 | 0.474 | 6.813 | 0.000 |
| Shaver et al.,(2003) | 0.170 | 0.060 | 0.276 | 3.003 | 0.003 |
| Brewer et al.,(2009) | 0.610 | 0.555 | 0.660 | 16.626 | 0.000 |
| | 0.492 | 0.390 | 0.581 | 8.350 | 0.000 |



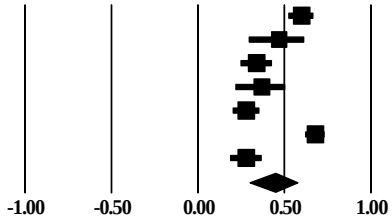
# Positive Affectivity

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Seo et al.,(2004) | 0.550 | 0.473 | 0.619 | 11.569 | 0.000 |
| Djukic(2009) | 0.110 | 0.005 | 0.213 | 2.048 | 0.041 |
| Chu et al.,(2005) | 0.410 | 0.314 | 0.498 | 7.682 | 0.000 |
| Neeley(2006) | 0.460 | 0.266 | 0.618 | 4.335 | 0.000 |
| Chu et al.,(2003) | 0.450 | 0.356 | 0.535 | 8.465 | 0.000 |
| Royal(2009) | 0.760 | 0.657 | 0.835 | 9.345 | 0.000 |
| | 0.474 | 0.299 | 0.618 | 4.881 | 0.000 |



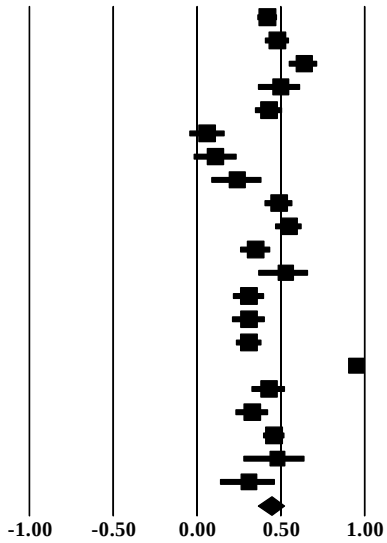

# RN/MD Relationship

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Manojlovich(2005) | 0.600 | 0.520 | 0.670 | 11.619 | 0.000 |
| Larrabee et al.,(2003) | 0.470 | 0.291 | 0.617 | 4.758 | 0.000 |
| Djukic(2009) | 0.340 | 0.243 | 0.430 | 6.567 | 0.000 |
| Chaboyer et al.,(1999) | 0.370 | 0.214 | 0.507 | 4.463 | 0.000 |
| Cummings et al.,(2008) | 0.280 | 0.198 | 0.358 | 6.510 | 0.000 |
| Cowin(2008) | 0.680 | 0.618 | 0.734 | 15.039 | 0.000 |
| Decker(1997) | 0.280 | 0.184 | 0.371 | 5.556 | 0.000 |
| | 0.445 | 0.296 | 0.572 | 5.413 | 0.000 |



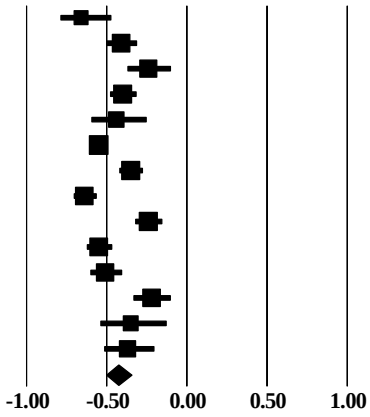
# Leadership Support

| Study name | Correlation | Lower limit | Upper limit | p-Value |
|---|---|---|---|---|
| 1Weisman et al.,(1981) | 0.420 | 0.357 | 0.479 | 0.000 |
| 2Weisman et al.,(1981) | 0.480 | 0.403 | 0.550 | 0.000 |
| Buccheri(1986) | 0.640 | 0.545 | 0.719 | 0.000 |
| Chaboyer et al.,(1999) | 0.500 | 0.362 | 0.617 | 0.000 |
| Decker(1997) | 0.430 | 0.344 | 0.509 | 0.000 |
| Munroe(1983) | 0.060 | -0.048 | 0.167 | 0.278 |
| Cavanagh(1992) | 0.110 | -0.022 | 0.239 | 0.103 |
| Marshalleck(1996) | 0.240 | 0.082 | 0.386 | 0.003 |
| Norris(1998) | 0.490 | 0.400 | 0.571 | 0.000 |
| Duxbury et al.,(1984) | 0.550 | 0.463 | 0.626 | 0.000 |
| Seo et al.,(2004) | 0.350 | 0.255 | 0.438 | 0.000 |
| Larrabee et al.,(2003) | 0.530 | 0.363 | 0.664 | 0.000 |
| Djukic(2009) | 0.310 | 0.212 | 0.402 | 0.000 |
| Chu et al.,(2005) | 0.310 | 0.206 | 0.407 | 0.000 |
| Cummings et al.,(2008) | 0.310 | 0.230 | 0.386 | 0.000 |
| Neeley(2006) | 0.950 | 0.923 | 0.968 | 0.000 |
| Tang(2005) | 0.430 | 0.322 | 0.527 | 0.000 |
| Chu et al.,(2003) | 0.330 | 0.227 | 0.426 | 0.000 |
| Brewer et al.,(2009) | 0.460 | 0.392 | 0.523 | 0.000 |
| Hall(2007) | 0.480 | 0.275 | 0.644 | 0.000 |
| Dion(2006) | 0.310 | 0.135 | 0.467 | 0.001 |
| | 0.442 | 0.360 | 0.517 | 0.000 |



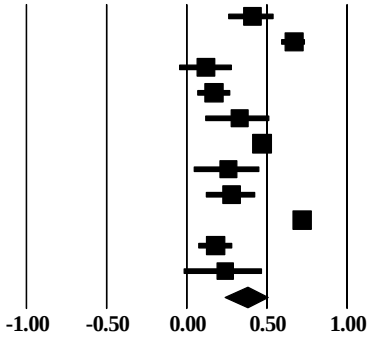

# Stress

| Study name | Correlation | Lower limit | Upper limit | p-Value |
|---|---|---|---|---|
| Boswell(1992) | -0.660 | -0.792 | -0.470 | 0.000 |
| Duxbury et al.,(1984) | -0.410 | -0.503 | -0.308 | 0.000 |
| Norbeck(1985) | -0.240 | -0.373 | -0.097 | 0.001 |
| Decker(1997) | -0.400 | -0.482 | -0.311 | 0.000 |
| Gowell et al.,(1992) | -0.440 | -0.598 | -0.249 | 0.000 |
| Laschinger et al.,(2001) | -0.550 | -0.574 | -0.525 | 0.000 |
| Lu et al.,(2007) | -0.350 | -0.424 | -0.272 | 0.000 |
| Ernst et al.,(2004) | -0.640 | -0.708 | -0.560 | 0.000 |
| Stacciarini et al.,(2004) | -0.240 | -0.325 | -0.151 | 0.000 |
| Flanagan et al.,(2002) | -0.550 | -0.626 | -0.464 | 0.000 |
| Hoffman et al.,(2003) | -0.510 | -0.604 | -0.402 | 0.000 |
| Ruggiero(2005) | -0.220 | -0.336 | -0.098 | 0.000 |
| Hall(2007) | -0.350 | -0.542 | -0.124 | 0.003 |
| Dion(2006) | -0.370 | -0.518 | -0.200 | 0.000 |
| | -0.430 | -0.506 | -0.348 | 0.000 |



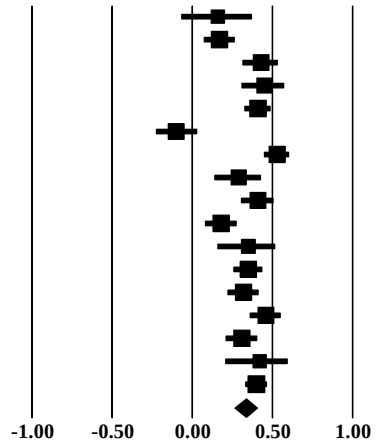
# Task Significance

| Study name | Correlation | Lower limit | Upper limit | p-Value |
|---|---|---|---|---|
| 2Seybolt(1986) | 0.410 | 0.256 | 0.544 | 0.000 |
| Riodan(1987) | 0.670 | 0.587 | 0.739 | 0.000 |
| Roedel et al.,(1988) | 0.120 | -0.050 | 0.283 | 0.166 |
| Munroe(1983) | 0.170 | 0.063 | 0.273 | 0.002 |
| O'Reilly et al.,(1980) | 0.330 | 0.113 | 0.517 | 0.003 |
| Ingersoll et al.,(2002) | 0.470 | 0.434 | 0.505 | 0.000 |
| Neeley(2006) | 0.260 | 0.041 | 0.455 | 0.020 |
| Chaboyer et al.,(1999) | 0.280 | 0.117 | 0.429 | 0.001 |
| Cowin(2008) | 0.720 | 0.664 | 0.768 | 0.000 |
| Norris(1998) | 0.180 | 0.070 | 0.286 | 0.001 |
| Tonges et al.,(1998) | 0.240 | -0.022 | 0.471 | 0.072 |
| | 0.376 | 0.234 | 0.502 | 0.000 |



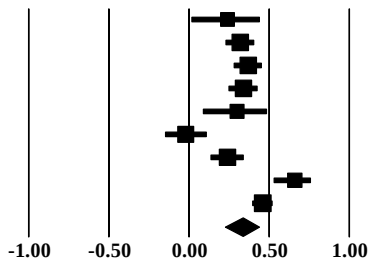

# RN/RN Relationship

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Freeman et al.,(1998) | 0.160 | -0.071 | 0.375 | 1.360 | 0.174 |
| Blegen et al.,(1987) | 0.170 | 0.069 | 0.267 | 3.289 | 0.001 |
| Riodan(1987) | 0.430 | 0.311 | 0.536 | 6.520 | 0.000 |
| Chaboyer et al.,(1999) | 0.450 | 0.304 | 0.575 | 5.569 | 0.000 |
| Decker(1997) | 0.410 | 0.322 | 0.491 | 8.413 | 0.000 |
| Cavanagh(1992) | -0.100 | -0.229 | 0.032 | -1.481 | 0.138 |
| Norris(1998) | 0.530 | 0.445 | 0.606 | 10.306 | 0.000 |
| Marshalleck(1996) | 0.290 | 0.136 | 0.431 | 3.608 | 0.000 |
| Ernst et al.,(2004) | 0.410 | 0.301 | 0.508 | 6.832 | 0.000 |
| Seo et al.,(2004) | 0.180 | 0.077 | 0.279 | 3.405 | 0.001 |
| Larrabee et al.,(2003) | 0.350 | 0.154 | 0.519 | 3.409 | 0.001 |
| Djukic(2009) | 0.350 | 0.254 | 0.439 | 6.778 | 0.000 |
| Chu et al.,(2005) | 0.320 | 0.217 | 0.416 | 5.849 | 0.000 |
| Tang(2005) | 0.460 | 0.356 | 0.553 | 7.768 | 0.000 |
| Chu et al.,(2003) | 0.310 | 0.205 | 0.408 | 5.598 | 0.000 |
| Hall(2007) | 0.420 | 0.204 | 0.597 | 3.637 | 0.000 |
| Brewer et al.,(2009) | 0.400 | 0.328 | 0.468 | 9.935 | 0.000 |
| | 0.333 | 0.261 | 0.401 | 8.620 | 0.000 |



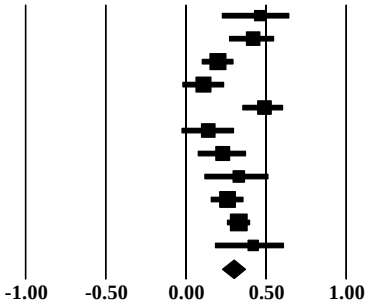

# Distributive Justice

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Freeman et al.,(1998) | 0.240 | 0.012 | 0.444 | 2.063 | 0.039 |
| Blegen et al.,(1987) | 0.320 | 0.225 | 0.409 | 6.353 | 0.000 |
| Seo et al.,(2004) | 0.370 | 0.276 | 0.457 | 7.267 | 0.000 |
| Djukic(2009) | 0.340 | 0.243 | 0.430 | 6.567 | 0.000 |
| Neeley(2006) | 0.300 | 0.084 | 0.489 | 2.698 | 0.007 |
| Cavanagh(1992) | -0.020 | -0.152 | 0.112 | -0.295 | 0.768 |
| Chu et al.,(2003) | 0.240 | 0.132 | 0.343 | 4.275 | 0.000 |
| Royal(2009) | 0.660 | 0.525 | 0.762 | 7.437 | 0.000 |
| Brewer et al.,(2009) | 0.460 | 0.392 | 0.523 | 11.663 | 0.000 |
| | 0.332 | 0.222 | 0.434 | 5.663 | 0.000 |



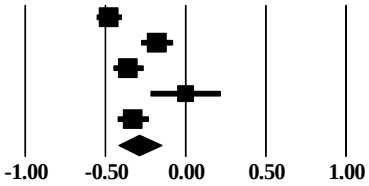
# Variety

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| 1Seybolt(1986) | 0.460 | 0.222 | 0.646 | 3.586 | 0.000 |
| 2Seybolt(1986) | 0.420 | 0.267 | 0.552 | 5.045 | 0.000 |
| Djukic(2009) | 0.200 | 0.097 | 0.299 | 3.760 | 0.000 |
| Kosmoski et al.,(1986) | 0.110 | -0.024 | 0.241 | 1.604 | 0.109 |
| Chaboyer et al.,(1999) | 0.490 | 0.350 | 0.609 | 6.159 | 0.000 |
| Roedel et al.,(1988) | 0.140 | -0.030 | 0.302 | 1.619 | 0.105 |
| Marshalleck(1996) | 0.230 | 0.072 | 0.377 | 2.830 | 0.005 |
| O'Reilly et al.,(1980) | 0.330 | 0.113 | 0.517 | 2.929 | 0.003 |
| Norris(1998) | 0.260 | 0.153 | 0.361 | 4.647 | 0.000 |
| Brewer et al.,(2009) | 0.330 | 0.254 | 0.402 | 8.040 | 0.000 |
| Tonges et al.,(1998) | 0.420 | 0.179 | 0.613 | 3.290 | 0.001 |
| | 0.296 | 0.223 | 0.366 | 7.605 | 0.000 |



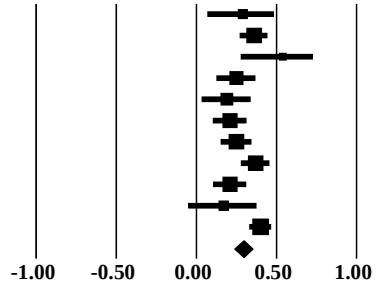

# Negative Affectivty

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Seo et al.,(2004) | -0.480 | -0.557 | -0.395 | -9.784 | 0.000 |
| Djukic(2009) | -0.180 | -0.280 | -0.076 | -3.375 | 0.001 |
| Chu et al.,(2005) | -0.360 | -0.453 | -0.260 | -6.646 | 0.000 |
| Neeley(2006) | 0.000 | -0.221 | 0.221 | 0.000 | 1.000 |
| Chu et al.,(2003) | -0.330 | -0.426 | -0.227 | -5.987 | 0.000 |
| | -0.293 | -0.421 | -0.152 | -3.998 | 0.000 |



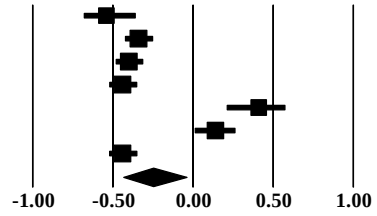

# Internal Employment Opportunities

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Freeman et al.,(1998) | 0.290 | 0.066 | 0.486 | 2.516 | 0.012 |
| Blegen et al.,(1987) | 0.360 | 0.268 | 0.446 | 7.220 | 0.000 |
| Molassiotis et al.,(1996) | 0.540 | 0.275 | 0.729 | 3.675 | 0.000 |
| Cavanagh(1992) | 0.250 | 0.122 | 0.370 | 3.771 | 0.000 |
| Marshalleck(1996) | 0.190 | 0.030 | 0.340 | 2.324 | 0.020 |
| Chu et al.,(2003) | 0.210 | 0.101 | 0.314 | 3.723 | 0.000 |
| Seo et al.,(2004) | 0.250 | 0.150 | 0.345 | 4.778 | 0.000 |
| Djukic(2009) | 0.370 | 0.275 | 0.457 | 7.204 | 0.000 |
| Chu et al.,(2005) | 0.210 | 0.102 | 0.313 | 3.759 | 0.000 |
| Neeley(2006) | 0.170 | -0.053 | 0.377 | 1.497 | 0.135 |
| Brewer et al.,(2009) | 0.400 | 0.328 | 0.468 | 9.935 | 0.000 |
| | 0.292 | 0.233 | 0.348 | 9.371 | 0.000 |



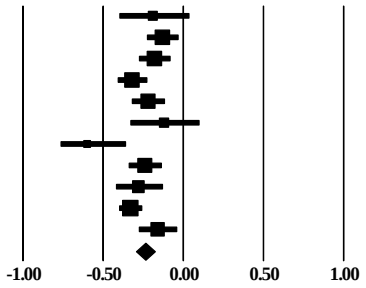
# Routinization

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Freeman et al.,(1998) | -0.540 | -0.684 | -0.355 | -5.091 | 0.000 |
| Blegen et al.,(1987) | -0.340 | -0.427 | -0.247 | -6.783 | 0.000 |
| Seo et al.,(2004) | -0.400 | -0.484 | -0.308 | -7.926 | 0.000 |
| Chu et al.,(2005) | -0.440 | -0.525 | -0.346 | -8.328 | 0.000 |
| Neeley(2006) | 0.410 | 0.208 | 0.579 | 3.798 | 0.000 |
| Cavanagh(1992) | 0.140 | 0.008 | 0.267 | 2.081 | 0.037 |
| Chu et al.,(2003) | -0.440 | -0.526 | -0.345 | -8.247 | 0.000 |
| | -0.251 | -0.438 | -0.043 | -2.351 | 0.019 |



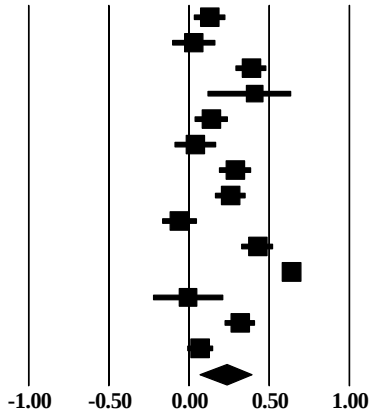

# Workload

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Freeman et al.,(1998) | -0.190 | -0.401 | 0.040 | -1.621 | 0.105 |
| Blegen et al.,(1987) | -0.130 | -0.229 | -0.028 | -2.505 | 0.012 |
| Seo et al.,(2004) | -0.180 | -0.279 | -0.077 | -3.405 | 0.001 |
| Djukic(2009) | -0.320 | -0.411 | -0.222 | -6.151 | 0.000 |
| Chu et al.,(2005) | -0.220 | -0.323 | -0.112 | -3.944 | 0.000 |
| Neeley(2006) | -0.120 | -0.332 | 0.104 | -1.051 | 0.293 |
| Molassiotis et al.,(1996) | -0.600 | -0.768 | -0.355 | -4.216 | 0.000 |
| Chu et al.,(2003) | -0.240 | -0.343 | -0.132 | -4.275 | 0.000 |
| Marshalleck(1996) | -0.280 | -0.422 | -0.125 | -3.476 | 0.001 |
| Brewer et al.,(2009) | -0.330 | -0.402 | -0.254 | -8.040 | 0.000 |
| Ruggiero(2005) | -0.160 | -0.279 | -0.036 | -2.521 | 0.012 |
| | -0.239 | -0.297 | -0.180 | -7.665 | 0.000 |



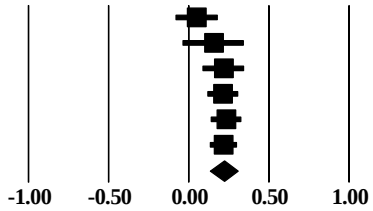

# Wages

| Study name | Correlation | Lower limit | Upper limit | p-Value |
|---|---|---|---|---|
| Blegen et al.,(1987) | 0.130 | 0.028 | 0.229 | 0.012 |
| Riordan(1987) | 0.030 | -0.108 | 0.167 | 0.671 |
| Lum et al.,(1998) | 0.390 | 0.288 | 0.483 | 0.000 |
| Molassiotis et al.,(1996) | 0.410 | 0.113 | 0.640 | 0.008 |
| Munroe(1983) | 0.140 | 0.032 | 0.244 | 0.011 |
| Cavanagh(1992) | 0.040 | -0.092 | 0.171 | 0.555 |
| Norris(1998) | 0.290 | 0.184 | 0.389 | 0.000 |
| Seo et al.,(2004) | 0.260 | 0.160 | 0.355 | 0.000 |
| Chu et al.,(2005) | -0.060 | -0.170 | 0.051 | 0.289 |
| Ernst et al.,(2004) | 0.430 | 0.323 | 0.526 | 0.000 |
| Ingersoll et al.,(2002) | 0.640 | 0.612 | 0.666 | 0.000 |
| Neeley(2006) | -0.006 | -0.227 | 0.215 | 0.958 |
| Cowin et al.,(2008) | 0.320 | 0.220 | 0.413 | 0.000 |
| Brewer et al.,(2009) | 0.070 | -0.013 | 0.152 | 0.100 |
| | 0.232 | 0.063 | 0.388 | 0.007 |



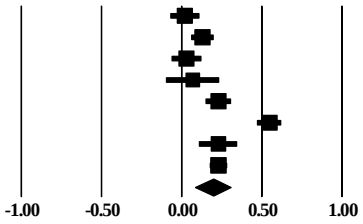
# Continued Education

| Study name | Point | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Kosmoski et al.,(1986) | 0.050 | -0.085 | 0.183 | 0.727 | 0.467 |
| Cummings et al.,(2008) | 0.158 | -0.041 | 0.346 | 1.557 | 0.120 |
| 1Weisman et al.,(1981) | 0.219 | 0.083 | 0.347 | 3.133 | 0.002 |
| 2Weisman et al.,(1981) | 0.214 | 0.113 | 0.311 | 4.107 | 0.000 |
| Molassiotis et al.,(1996) | 0.235 | 0.135 | 0.330 | 4.535 | 0.000 |
| Munroe(1983) | 0.218 | 0.129 | 0.303 | 4.742 | 0.000 |
| | 0.218 | 0.129 | 0.303 | 4.742 | 0.000 |



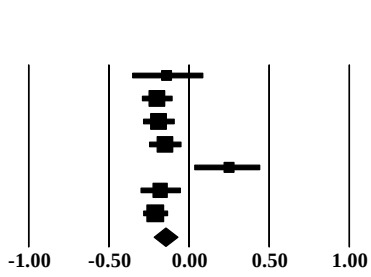

# Staffing Adequacy

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Khumyu(2002) | 0.020 | -0.073 | 0.113 | 0.421 | 0.673 |
| 1Weisman et al.,(1981) | 0.130 | 0.057 | 0.202 | 3.464 | 0.001 |
| 2Weisman et al.,(1981) | 0.030 | -0.066 | 0.125 | 0.614 | 0.539 |
| Chaboyer et al.,(1999) | 0.070 | -0.100 | 0.236 | 0.806 | 0.420 |
| Cummings et al.,(2008) | 0.230 | 0.147 | 0.310 | 5.299 | 0.000 |
| Shaver et al.,(2003) | 0.550 | 0.467 | 0.623 | 10.800 | 0.000 |
| Laschinger(2008) | 0.230 | 0.105 | 0.348 | 3.559 | 0.000 |
| Amendolair(2007) | 0.230 | 0.173 | 0.285 | 7.725 | 0.000 |
| | 0.194 | 0.081 | 0.303 | 3.322 | 0.001 |



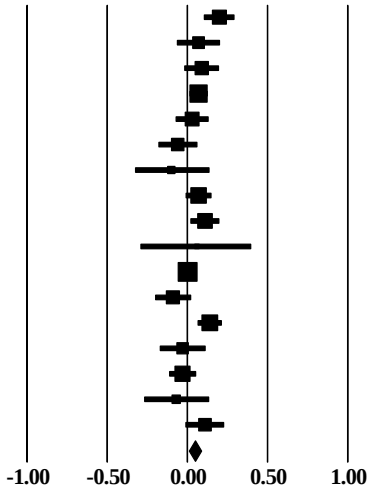

# Outside Employment Opportunities

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Freeman et al.,(1998) | -0.140 | -0.357 | 0.091 | -1.187 | 0.235 |
| Blegen et al.,(1987) | -0.200 | -0.296 | -0.100 | -3.884 | 0.000 |
| Seo et al.,(2004) | -0.190 | -0.289 | -0.087 | -3.598 | 0.000 |
| Djukic(2009) | -0.150 | -0.251 | -0.045 | -2.803 | 0.005 |
| Neeley(2006) | 0.250 | 0.031 | 0.446 | 2.227 | 0.026 |
| Cavanagh(1992) | -0.180 | -0.305 | -0.049 | -2.687 | 0.007 |
| Brewer et al.,(2009) | -0.210 | -0.288 | -0.129 | -4.999 | 0.000 |
| | -0.150 | -0.223 | -0.075 | -3.894 | 0.000 |



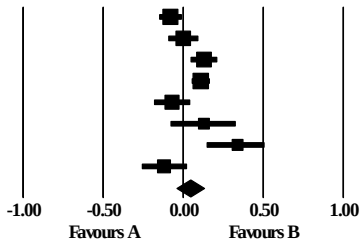
# Age

| Study name | Correlation | Lower limit | Upper limit | p-Value |
|---|---|---|---|---|
| Blegen et al.,(1987) | 0.200 | 0.100 | 0.296 | 0.000 |
| Riordan(1987) | 0.070 | -0.068 | 0.205 | 0.320 |
| Koerner(1981) | 0.090 | -0.022 | 0.200 | 0.115 |
| Ma(2002) | 0.070 | 0.011 | 0.129 | 0.021 |
| Flanagan et al.,(2002) | 0.030 | -0.076 | 0.135 | 0.578 |
| Chu et al.,(2003) | -0.060 | -0.183 | 0.065 | 0.346 |
| Arquette(1990) | -0.100 | -0.329 | 0.140 | 0.415 |
| Brewer et al.,(2009) | 0.070 | -0.013 | 0.152 | 0.100 |
| Masuthon(2003) | 0.110 | 0.016 | 0.202 | 0.021 |
| Amendolair(2007) | 0.060 | -0.295 | 0.400 | 0.746 |
| Djukic(2009) | 0.002 | -0.031 | 0.035 | 0.906 |
| Ernst et al.,(2004) | -0.090 | -0.204 | 0.026 | 0.128 |
| Cummings et al.,(2008) | 0.140 | 0.061 | 0.217 | 0.001 |
| Mrayyan(2005) | -0.030 | -0.175 | 0.116 | 0.688 |
| Royal(2009) | -0.030 | -0.116 | 0.057 | 0.497 |
| Ruggiero(2005) | -0.070 | -0.272 | 0.138 | 0.511 |
| Hall(2007) | 0.110 | -0.015 | 0.232 | 0.084 |
| | 0.045 | 0.007 | 0.083 | 0.021 |



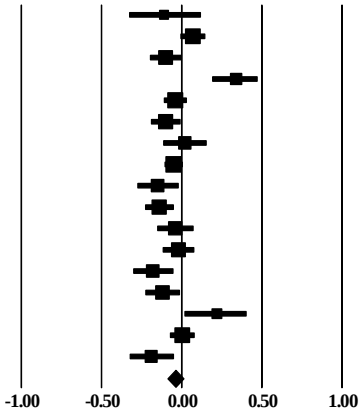

# Time in Organization

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| 1Weisman et al.,(1981) | -0.080 | -0.153 | -0.006 | -2.124 | 0.034 |
| 2Weisman et al.,(1981) | 0.000 | -0.095 | 0.095 | 0.000 | 1.000 |
| Lucas(1991) | 0.130 | 0.043 | 0.215 | 2.929 | 0.003 |
| Amendolair(2007) | 0.110 | 0.051 | 0.168 | 3.643 | 0.000 |
| Flanagan et al.,(2002) | -0.070 | -0.184 | 0.046 | -1.182 | 0.237 |
| Humphrey(1986) | 0.130 | -0.082 | 0.330 | 1.205 | 0.228 |
| Royal(2009) | 0.340 | 0.144 | 0.510 | 3.322 | 0.001 |
| Arquette(1990) | -0.120 | -0.261 | 0.026 | -1.613 | 0.107 |
| | 0.042 | -0.044 | 0.128 | 0.958 | 0.338 |



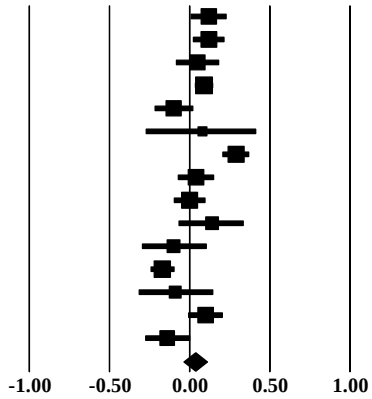
# Educational Level or Expertise

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Freeman et al.,(1998) | -0.110 | -0.330 | 0.122 | -0.931 | 0.352 |
| Ning et al.,(2009) | 0.070 | -0.010 | 0.149 | 1.710 | 0.087 |
| Blegen et al., (1987) | -0.100 | -0.200 | 0.002 | -1.922 | 0.055 |
| Zumrehly(2008) | 0.340 | 0.188 | 0.476 | 4.234 | 0.000 |
| 1Weisman et al.,(1981) | -0.040 | -0.114 | 0.034 | -1.060 | 0.289 |
| 2Weisman et al.,(1981) | -0.100 | -0.194 | -0.005 | -2.054 | 0.040 |
| Riordan(1987) | 0.020 | -0.118 | 0.157 | 0.284 | 0.777 |
| Amendolair(2007) | -0.050 | -0.109 | 0.009 | -1.649 | 0.099 |
| Kosmoski et al.,(1986) | -0.150 | -0.279 | -0.016 | -2.195 | 0.028 |
| Mrayyan(2005) | -0.140 | -0.231 | -0.047 | -2.939 | 0.003 |
| Flanagan et al.,(2002) | -0.040 | -0.155 | 0.076 | -0.674 | 0.500 |
| Decker(1997) | -0.020 | -0.121 | 0.081 | -0.386 | 0.699 |
| Cavanagh(1992) | -0.180 | -0.305 | -0.049 | -2.687 | 0.007 |
| Chu et al.,(2003) | -0.120 | -0.229 | -0.008 | -2.106 | 0.035 |
| Royal(2009) | 0.220 | 0.015 | 0.407 | 2.098 | 0.036 |
| Masuthon(2003) | 0.004 | -0.075 | 0.083 | 0.099 | 0.921 |
| Arquette(1990) | -0.190 | -0.326 | -0.046 | -2.573 | 0.010 |
| | -0.041 | -0.091 | 0.009 | -1.621 | 0.105 |



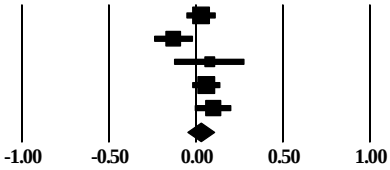

# Years of Work Experience

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Manojlovich(2005) | 0.120 | 0.004 | 0.233 | 2.021 | 0.043 |
| Blegen et al.,(1987) | 0.120 | 0.018 | 0.219 | 2.310 | 0.021 |
| Riordan(1987) | 0.050 | -0.088 | 0.186 | 0.709 | 0.478 |
| Amendolair(2007) | 0.090 | 0.031 | 0.149 | 2.973 | 0.003 |
| Ernst et al.,(2004) | -0.100 | -0.222 | 0.025 | -1.574 | 0.116 |
| Koerner(1981) | 0.080 | -0.276 | 0.417 | 0.432 | 0.666 |
| Mrayyan(2005) | 0.290 | 0.202 | 0.374 | 6.227 | 0.000 |
| Flanagan et al.,(2002) | 0.040 | -0.076 | 0.155 | 0.674 | 0.500 |
| Decker(1997) | 0.000 | -0.101 | 0.101 | 0.000 | 1.000 |
| Humphrey(1986) | 0.140 | -0.072 | 0.339 | 1.299 | 0.194 |
| Royal(2009) | -0.100 | -0.300 | 0.108 | -0.941 | 0.347 |
| Masuthon(2003) | -0.170 | -0.246 | -0.092 | -4.233 | 0.000 |
| Hall(2007) | -0.090 | -0.320 | 0.150 | -0.733 | 0.463 |
| Norris(1998) | 0.100 | -0.012 | 0.209 | 1.752 | 0.080 |
| Arquette(1990) | -0.140 | -0.280 | 0.006 | -1.885 | 0.059 |
| | 0.032 | -0.041 | 0.106 | 0.862 | 0.389 |



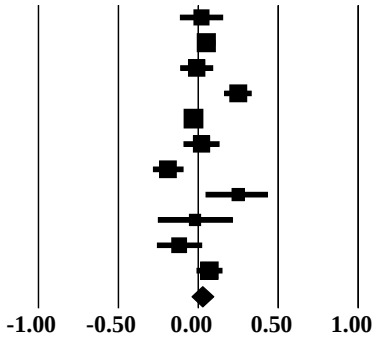

# Gender

| Study name | Correlation | Lower limit | Upper limit | Z-Value | p-Value |
|---|---|---|---|---|---|
| Cummings et al.,(2008) | 0.030 | -0.057 | 0.116 | 0.679 | 0.497 |
| Flanagan et al.,(2002) | -0.130 | -0.242 | -0.014 | -2.203 | 0.028 |
| Royal(2009) | 0.080 | -0.128 | 0.281 | 0.752 | 0.452 |
| Brewer et al.,(2009) | 0.060 | -0.023 | 0.143 | 1.409 | 0.159 |
| Munroe(1983) | 0.100 | -0.008 | 0.206 | 1.812 | 0.070 |
| | 0.026 | -0.051 | 0.102 | 0.654 | 0.513 |



# Time in Position

| Study name | Correlation | Lower limit | Upper limit | p-Value |
|---|---|---|---|---|
| Riordan(1987) | 0.020 | -0.118 | 0.157 | 0.777 |
| Amendolair(2007) | 0.050 | -0.010 | 0.109 | 0.100 |
| Djukic(2009) | -0.010 | -0.115 | 0.095 | 0.853 |
| Mrayyan(2005) | 0.250 | 0.160 | 0.336 | 0.000 |
| Ma(2002) | -0.030 | -0.063 | 0.003 | 0.077 |
| Shaver et al.,(2003) | 0.020 | -0.095 | 0.135 | 0.734 |
| Decker(1997) | -0.190 | -0.286 | -0.091 | 0.000 |
| Humphrey(1986) | 0.250 | 0.043 | 0.437 | 0.019 |
| Hall(2007) | -0.020 | -0.255 | 0.218 | 0.871 |
| Arquette(1990) | -0.120 | -0.261 | 0.026 | 0.107 |
| Brewer et al.,(2009) | 0.070 | -0.013 | 0.152 | 0.100 |
| | 0.023 | -0.045 | 0.091 | 0.510 |



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