The Influences of Generational Membership and Practice Environment on Nurse Manager Job Satisfaction

Angela Keith

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THE INFLUENCES OF GENERATIONAL MEMBERSHIP AND PRACTICE ENVIRONMENT ON NURSE MANAGER JOB SATISFACTION

by

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Nursing College of Nursing at the University of Central Florida, Orlando, Florida

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2021

Major Professor: Nora E. Warshawsky
ABSTRACT

The United States (US) is facing considerable shortages in all aspects of the nursing profession and this includes management. The nurse manager (NM) is a critical member of the healthcare team. They greatly influence the quality of patient care, staff retention, and the implementation of front-line and often progressive healthcare policy changes. Short tenures, high turnover rates, and poor recruiting outcomes, however, are threatening the current and future supply of experienced NMs. Today, there are three generations of NMs in practice: baby boomers, generation Xers, and generation Yers (also called millennials). Each of these cohorts has its own unique perception of healthy practice environments and job satisfaction, but sparse research has been devoted to understanding these differences. The aim of this dissertation was to determine the effects of generational membership on NMs’ perception of their work environment and their job satisfaction. The study was first guided by an integrated literature review and theory. The underpinnings of the Conceptual Framework for Predicting Nurse Retention (CFPNR) served as the foundation for this study and helped to inform the variables of interest. A secondary analysis was then performed, using previously collected survey data from NMs (n=647) who completed the Nurse Manager Practice Environment Scale (NMPES) and a demographics questionnaire after receiving permission from the University of Central Florida’s (UCF) Internal Review Board (IRB). Correlation analysis was performed with the following variables: generational membership, NM perception of their practice environment, and NM job satisfaction scores. There were positive correlations found between NM job satisfaction and their practice environment but there were no statistically significant differences detected based on generational membership. These findings challenge much of the current narratives claiming that work environment preferences are vastly different among generations. Though generational
differences may exist among nursing professionals, these may not impact satisfaction and retention as much as previously hypothesized. Further research is warranted to understand what factors most impact NMs satisfaction and longevity in practice. Lastly, the quantitative portion of this study was performed using electronic surveys; therefore, a state of the science integrated literature review was conducted to understand the benefits, disadvantages, and current wisdom on how to mitigate the problems associated with electronic surveys. This is found in the final chapter of this manuscript. Findings from this dissertation will widen the body of knowledge on the topic, help guide the profession, aid organizations in improving professional practice norms, and inform future nursing workforce and leadership research.
This work is dedicated to front-line nurses and nurse managers who work tirelessly to care for the sick and who provide high quality patient care every day despite the many obstacles and barriers they face.
ACKNOWLEDGEMENTS

I wish to express my sincere appreciation to Dr. Nora Warshawsky for her generosity, sage advice, and vigorous efforts to keep me on track through the dissertation process. Without her help, this manuscript and subsequent work would not have been possible. As one of the profession’s leading experts on this topic, she has been an invaluable resource.

I would like to extend a special thanks to Dr. Donna Neff whose nursing workforce research I have long admired. She believed in me from the beginning more than three years ago, and she is the reason I am in this program. Her encouragement and counsel have been indispensable on my journey to scholarship.

I want to also thank my other dissertation committee members for their help. To Dr. Vicki Loerzel, I thank her for acting as a sounding board in the early days of brainstorming research ideas and for helping me understand the nuances of that process. Her commitment to excellence has helped me to understand academic professionalism and scholarly writing. I also extend a big thank you to Dr. Joy Parchment, whose insights and exceptional knowledge on this topic have expanded my understanding. Furthermore, her attention to detail has greatly improved my work and writing. The professional intellect on this committee has made all the difference.

My acknowledgements would be incomplete without including my family. I would like to thank my children—Thomas, Andrew, John-Patrick, Nathan, and Kelley—for their patience and consistent encouragement on this very long journey. To my husband and soulmate Kevin, I thank you. I would not be where I am, who I am, or what I am today without you. Your love and support have empowered me these many years of graduate studies to become the second, but hopefully not the last, Dr. Keith.
# TABLE OF CONTENTS

LIST OF FIGURES ........................................................................................................................ x
LIST OF TABLES ........................................................................................................................ xi

CHAPTER 1: INTRODUCTION ................................................................................................... 1
References ................................................................................................................................... 5

CHAPTER 2: LITERATURE REVIEW AND SYNTHESIS: FACTORS THAT INFLUENCE NURSE MANAGERS’ JOB SATISFACTION ........................................................................ 9
Abstract ....................................................................................................................................... 9
Literature Review and Synthesis: Factors that Influence Nurse Manager Job Satisfaction..... 10
Background and Scope of the Problem ..................................................................................... 11
Methods ..................................................................................................................................... 12
Inclusion Criteria and Data Extraction...................................................................................... 13
Data Analysis ............................................................................................................................ 13
Results ....................................................................................................................................... 24
  Workloads .............................................................................................................................. 24
  Organizational Support .......................................................................................................... 25
  The NM-Supervisor Relationship .......................................................................................... 26
  Competency and Training ..................................................................................................... 27
Discussion ................................................................................................................................. 28
Implications and Recommendations for Practice ..................................................................... 30
Conclusions ............................................................................................................................... 33
Knowledge Gap and Future Research ....................................................................................... 33
References ................................................................................................................................. 35

CHAPTER 3: NURSE MANAGER JOB SATISFACTION: METHODOLOGY ...................... 44
Abstract ..................................................................................................................................... 44
Nurse Manager Job Satisfaction ............................................................................................... 45
Background ............................................................................................................................... 45
  The Nurse Manager Practice Environment ........................................................................... 46
  Job Satisfaction ....................................................................................................................... 46
  Generational Membership ....................................................................................................... 47
  Theoretical Model .................................................................................................................... 48
Methodology ............................................................................................................................. 49
| Human Subject Review                        | ................................................................. | 49 |
| Data Collection                           | ........................................................................ | 49 |
| Sample                                    | ........................................................................ | 50 |
| Inclusion and Exclusion Criteria          | ........................................................................ | 50 |
| Instruments                               | ........................................................................ | 51 |
| Nurse Manager Practice Environment Scale  | ........................................................................ | 51 |
| Nurse Manager Job Satisfaction Questionnaire | ........................................................................ | 51 |
| Generational Membership Measurement      | ........................................................................ | 52 |
| Analysis                                  | ........................................................................ | 52 |
| Results                                   | ........................................................................ | 53 |
| Demographics                              | ........................................................................ | 53 |
| NMPES and Job Satisfaction Scores         | ........................................................................ | 55 |
| Correlations                              | ........................................................................ | 56 |
| Generational Analysis                     | ........................................................................ | 56 |
| Discussion                                | ........................................................................ | 58 |
| Nurse Manager Characteristics             | ........................................................................ | 58 |
| Practice Environment and Job Satisfaction | ........................................................................ | 59 |
| Generational Membership                  | ........................................................................ | 59 |
| Implications for Practice                 | ........................................................................ | 60 |
| Study Limitations                         | ........................................................................ | 62 |
| Future Research                           | ........................................................................ | 62 |
| Conclusions                               | ........................................................................ | 63 |
| Funding                                   | ........................................................................ | 64 |
| References                                | ........................................................................ | 65 |
| CHAPTER 4: CRITICAL APPRAISAL OF ELECTRONIC SURVEYS: AN INTEGRATED LITERATURE REVIEW | ................................................................. | 71 |
| Abstract                                  | ........................................................................ | 71 |
| Critical Appraisal of Electronic Surveys: An Integrated Literature Review | ................................................................. | 72 |
| Background and Pertinent Terms            | ........................................................................ | 72 |
| Methods                                   | ........................................................................ | 73 |
| Data Analysis                             | ........................................................................ | 74 |
| Results                                   | ........................................................................ | 80 |
Advantages of Electronic Surveys ........................................................................................................ 80
Disadvantages of Electronic Surveys ...................................................................................................... 83
Discussion and Recommendations ......................................................................................................... 87
Implications for Nurse Researchers ..................................................................................................... 91
Conclusion ............................................................................................................................................. 91
References .............................................................................................................................................. 92
APPENDIX A: RESEARCH DISSERTATION PROPOSAL ......................................................................... 99
APPENDIX B: NURSE MANAGER DEMOGRAPHICS QUESTIONNAIRE .................................................... 132
APPENDIX C: HOSPITAL CHARACTERISTICS QUESTIONNAIRE .......................................................... 135
APPENDIX D: NURSE MANAGER PRACTICE ENVIRONMENT SURVEY (NMPES) .................................. 137
APPENDIX E: JOB SATISFACTION QUESTIONNAIRE ........................................................................... 139
APPENDIX F: CERTIFICATES OF CONTINUING EDUCATION FOR COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI) AND THE PROTECTION OF HUMAN SUBJECTS .................................................................................................................. 141
APPENDIX G: FACULTY ADVISOR REVIEW OF STUDENT RESEARCH ................................................ 147
APPENDIX H: INTERNAL REVIEW BOARD (IRB), UNIVERSITY OF CENTRAL FLORIDA (UCF) .................................................................................................................. 150
APPENDIX I: CURRICULUM VITAE ..................................................................................................... 152
LIST OF FIGURES

FIGURE 1. PRISMA DIAGRAM NM-JS LITERATURE REVIEW ....................................................... 15
FIGURE 2. THE CFPNR (SAWATZKY & ENNS, 2012) .................................................................. 48
FIGURE 3. PRISMA DIAGRAM ELECTRONIC SURVEYS LITERATURE REVIEW ............ 74
FIGURE 4 A. VARIABLES OF INTEREST ................................................................................ 102
FIGURE 5 A. CONCEPTUAL FRAMEWORK FOR PREDICTING NURSE RETENTION ..... 104
# LIST OF TABLES

**TABLE 1.** JOHNS HOPKINS EVIDENCE-BASED PRACTICE: EVIDENCE LEVEL & QUALITY GUIDE ................................................................................................................. 14

**TABLE 2.** SUMMARY OF THE EVIDENCE............................................................................................................. 16

**TABLE 3.** GUIDANCE-BASED RECOMMENDATIONS FOR NM JOB SATISFACTION.............................................. 32

**TABLE 4.** NURSE MANAGER DEMOGRAPHICS ........................................................................................................ 54

**TABLE 5.** DESCRIPTIVE STATISTICS OF PARTICIPATING HOSPITAL CHARACTERISTICS (N=53) .................................................................................................................................. 55

**TABLE 6.** MEANS OF NMPES AND JOB SATISFACTION FOR TOTAL SAMPLE AND BY AGE GROUP ........................................................................................................................ 56

**TABLE 7.** PEARSON’S CORRELATION BETWEEN TOTAL JOB SATISFACTION AND NMPES BY GENERATION.................................................................................................................. 56

**TABLE 8.** MODEL OF SUMMARY OF JOB SATISFACTION .......................................................................................... 57

**TABLE 9.** GLM COEFFICIENTS ON JOB SATISFACTION ....................................................................................... 58

**TABLE 10.** SUMMARY OF THE EVIDENCE ............................................................................................................. 75

**TABLE 11.** EVIDENCE-BASED RECOMMENDATION TO MITIGATE ISSUES WITH ELECTRONIC SURVEYS .................................................................................................................. 90

**TABLE 12 A.** SAMPLING FRAME SELECTION CRITERIA (FROM ORIGINAL STUDY) ........................................ 112

**TABLE 13 A.** DOMAINS/DIMENSIONS OF THE NMPES ....................................................................................... 116

**TABLE 14 A.** SUMMARY OF DATA COLLECTION VARIABLES .................................................................................. 119
CHAPTER 1: INTRODUCTION

The United States (US) is losing 70,000 nurses to retirement each year leaving shortages throughout profession, and that includes management (Buerhaus, Skinner, Auerbach, & Staiger, 2017; Fry, 2019; Snively, 2016). Retaining and recruiting nurses is predicted to be two of the greatest challenges facing healthcare in the next few years (Bees, 2017; Buerhaus et al., 2017). The nurse manager (NM) is a crucial member of the healthcare team. They supervise staffing, oversee recruitment, are responsible for executing major healthcare policy changes, and manage valuable human and fiscal resources (DeCampli, Kirby, & Baldwin, 2010; Moore, Sublett, & Leahy, 2016; Saifman & Sherman, 2019). The NM plays a vital role in creating a positive setting that fosters positive nursing, patient, and organizational outcomes (Hewko, Brown, Fraser, Wong, & Cummings, 2015; Ulrich et al., 2014; Warshawsky, Rayens, Stefaniak, & Rahman, 2013; Wilkes, Doull, Chok, & Mashingaidze, 2016). Despite current shortages and urgency, however, barriers continue to block both recruitment and retention efforts (Hewko et al., 2015; Sawatzky, Enns, & Legare, 2015; Ulrich, Lavandero, Wood, & Early, 2014; Warshawsky et al., 2013; Warshawsky, Wiggins, & Rayens, 2016; Wilkes et al., 2016). The growing number of vacancies in NM positions constitutes a crisis for patient care organizations and the profession as a whole. However, limited research has been devoted to understanding why NMs are leaving their positions.

Over the past two decades the huge exit of boomer staff nurses and nursing managers to retirement has depleted the supply of both. Boomer nurses and NMs are presently in the minority, thus attributing staffing shortages to boomer nurse retirements may not be an accurate appraisal of the situation. Millennials and generation Xers currently outnumber the boomers for most occupations including nursing (Dimock, 2018; Dols, Chargualaf, & Martinez, 2019; Martin & Kallmeyer, 2018; Warshawsky & Cramer, 2019), and it is unlikely that these two generations
of nurses and NMs are retiring. In fact, studies have found that many NMs are planning to leave their current positions within two to five years, naming dissatisfaction and burnout as the biggest reasons, not retirement (Christopher, Waters, & Chiarella, 2017; Hewko et al., 2015; Saifman & Sherman, 2019; Warshawsky et al., 2016). The scale of NM shortages is not entirely understood but current reports show that turnovers are on the rise, the quantity of experienced and seasoned NMs is declining, and recruitment is a continual problem (Martin, & Kallmeyer, 2018; Saifman & Sherman, 2019; Warshawsky et al., 2016; Warshawsky & Cramer, 2019).

There is a substantial body of knowledge regarding staff nurses’ recruitment, retention and turnover, work environments, and job satisfaction, yet these concepts have been understudied in the NM population. Research also indicates that expectations of the work environment as well as job satisfaction differ by generation (AME Healthcare, 2019; Christensen, Wilson, & Edelman, 2017; Chenkovich & Cates, 2016; Deloitte Global, 2019; Dols et al., 2019; Faller & Gogek, 2019; Fishman, 2016). To date, however, research is sparse in which generational differences and NM perceptions of their practice environment and job satisfaction have been examined in tandem. The purpose of this dissertation study, therefore, was examine the relationship among generational membership, NM perception of the practice environment and overall job satisfaction.

This dissertation was guided by literature reviews, theory, and direction from leaders in the field. First, an integrated literature review was performed to understand the state of the science related to NMs and to ascertain the major factors that influence their job satisfaction (found in Chapter two). The theoretical underpinnings of the Conceptual Framework for Predicting Nurse Retention (CFPNR) were foundational for this study and helped to inform selection of the variables of interest (Sawatzky & Enns, 2012; Sawatzky, Enns, & Legare, 2015).
The full outline and description of the CFPNR can be found in Chapter three. A study proposal was then written and sent to the Institutional Review Board (IRB) at the University of Central Florida (UCF) asking for permission to perform secondary analyzes on a dataset of previously completed electronic surveys from NM participants from around the United States (US). This proposal can be found in Appendix A of this document. On May 20, 2020, the IRB gave approval for the quantitative portion of this dissertation, found in Appendix H. Multiple analyses of the dataset were performed on the dataset as outlined in Chapter three.

Power analysis (Cohen, 1988), performed a priori, determined that the appropriate sample number for this study would be 211 completed NMs surveys from the dataset. For the original study, the nurse manager practice environment scale (NMPES) was employed to understand participants’ perception of their practice environments (Appendix D). Job satisfaction was determined through a two-part questionnaire included in the survey. Generational membership was established using the ages of the participants found in the demographics portion of the completed surveys. Hospital characteristics were determined using a three-question survey. These surveys and questionnaires can be found in Appendices B, C, D, and E. Analyses findings from these surveys are detailed in Chapter three. Lastly, because data for this study were collected from electronic surveys, an integrated literature review was performed that outlines the significant impacts that electronic surveys have had and continue to make in the world of social science research. The review gives a detailed account to the advantages, disadvantages, and ways to mitigate the problems associated with electronic surveys in social science. This review can be found in Chapter four.

As a whole, the chapters in this dissertation provide a conceptual basis for this research and subsequent report of the analyses, provides a state of the science on NM personnel shortages,
and outlines the major factors that influence NM job satisfaction, and it offers new insights on the impacts of practice environment and generation membership on NM job satisfaction. These findings add to the growing body of knowledge on the subject, offers guidance to nursing leaders and organizations on ways to create appropriate practice norms for NMs, and inform future research.
References


millennial-nurses-2018/


CHAPTER 2: LITERATURE REVIEW AND SYNTHESIS: FACTORS THAT INFLUENCE NURSE MANAGERS’ JOB SATISFACTION

Abstract

The United States (US) is facing substantial shortages in all aspects of the nursing profession including management. As an essential member of the healthcare team the nurse manager (NM) influences the quality of patient care, affects staff-nurse retention, and helps with the implementation of front-line healthcare changes. High turnovers rates, short tenure intentions, and poor recruiting outcomes are threatening the current and future supply of NMs. The body of knowledge regarding staff nurses’ job satisfaction, retention, and recruitment is substantial, but far less is known about these same areas for the NM population. This literature review was conducted to understand how organizational and practice environment characteristics influence NM job satisfaction. A computer-assisted search of electronic databases was performed using Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines. This produced 14 articles for review and synthesis. Four overriding themes emerged describing organizational and practice environment factors that influence NMs’ job satisfaction: workloads, organizational support, NM-supervisor relationships, and competency and training. Such findings reveal areas for improvement that nursing leaders and organizations may use to improve practice norms and work environments for increased NMs’ job satisfaction. These findings may also have implications for NM retention and recruitment.

Key words: nurse managers, nurse leaders, nursing supervisors, nursing administration, practice environment, work climate, organizational climate, job satisfaction, work satisfaction, intention to stay, intention to leave.
Literature Review and Synthesis: Factors that Influence Nurse Manager Job Satisfaction

The United States (US) nursing profession is experiencing the loss of 70,000 nurses to retirement each year, leaving deficits in all facets of the profession, and management is no exception (Buerhaus, Skinner, Auerbach, & Staiger, 2017a; Fry, 2019; Snively, 2016). It is predicted that retaining nurses and recruiting new ones represent two of the most profound challenges that the healthcare industry will face in the coming years (Bees, 2017; Buerhaus, Skinner, Auerbach, & Staiger, 2017b). Because the nurse manager (NM) plays such a pivotal role in staff-nurse retention, patient safety, and healthcare transformation, it is imperative to improve retention and recruitment for this portion of the nursing workforce (Hewko, Brown, Fraser, Wong, & Cummings, 2015; Sawatzky, Enns, & Legare, 2015; Ulrich, Lavandero, Wood, & Early, 2014; Warshawsky, Rayens, Stefaniak, & Rahman, 2013c; Warshawsky, Wiggins, & Rayens, 2016; Wilkes, Doull, Chok, & Mashingaidze, 2016). Despite the shortages, however, barriers continue to block both recruitment and retention efforts (AME Healthcare, 2018; Anselmo-Witzel, Orshan, Heitner, K., & Bachand, 2017; Hewko et al., 2015; Martin & Kallmeyer, 2018; Moore, Sublett & Leahy, 2016; Warshawsky & Havens, 2014; Warshawsky et al., 2016).

For the past few years, the considerable exodus of nurses and NMs to retirement has been blamed as the root cause for employee shortages within the discipline. Though there is little doubt that boomer departures have caused a degree of employment deficits, this may not be the whole story. Recruiting and retaining NMs is a challenge, one that has continued for years with poor results, and new evidence suggests that other things may be affecting outcomes.

The number of generation X and millennials now outnumber boomer nurses at the bedside and in management (Djukic, Jun, Kovner, Brewer, & Fletcher, 2017; Dols, Chargualaf, & Martinez, 2019; Fry, 2019; Martin & Kallmeyer, 2018; Warshawsky & Cramer, 2019;
Weavers, Paliwal, Hessels, & Wurmser, 2019), and these two cohorts are not at retirement age (Dimock, 2018). In fact, study findings from the past five years indicate that most NMs plan to leave in two to five years, citing burnout, frustration, and dissatisfaction as their reasons for leaving (Christopher, Waters, & Chiarella, 2017; Hewko et al., 2015; Saifman & Sherman, 2019; Warshawsky et al., 2016), so attributing NM shortages solely to boomer retirement is not an accurate assessment. Poor recruitment outcomes are also contributing to employment deficits, and evidence suggest that younger nurses are making other career choices (AMA Healthcare, 2019).

**Background and Scope of the Problem**

As one of the most influential members of the healthcare team, the NM oversees vital functions such as human resource management, supervising budgets, and other important resources, and implementing healthcare policy changes (Cox, 2019; DeCampli, Kirby, & Baldwin, 2010; Loveridge, 2017; Moore et al., 2016; Saifman & Sherman, 2019). Since the implementation of value-based purchasing in US healthcare, the NM has also been charged with managing certain aspects of patient reimbursements (Warshawsky, 2018). Because it takes years for NMs to become fully proficient in their roles, the loss of seasoned managers results in decreased functionality of institutions and numerous, costly capital losses (Baxter & Warshawsky, 2014; Shirey, 2007; Warshawsky & Cramer, 2019; Warshawsky, Lake, & Brandford, 2013a). The growing number of NM vacancies thus constitutes a crisis for organizations and for the profession.

NMs intention to stay is low (Hewko et al., 2015; Warshawsky et al., 2016; Weavers et al., 2019), less than three years in many cases, while the average NM has less than five years of experience (Djukic et al., 2017; Hewko et al., 2015; Parchment & Andrews, 2019; Warshawsky...
& Cramer, 2019; Warshawsky et al., 2016; Weavers et al., 2019). NM competency is a multilayered endeavor that takes years to perfect, so these findings are concerning (Baxter & Warshawsky, 2014; Shirey, 2007; Warshawsky & Cramer, 2019; Warshawsky et al., 2013a). In one recent study researchers found that lack of experience was reflective of low NM competency scores (Warshawsky & Cramer, 2019).

Recruiting new and qualified NMs is challenging for several reasons. Generation X and millennial nurses expect to achieve balance between their work and personal lives (AME Healthcare, 2019; Anselmo-Witzel et al., 2017; Christopher et al., 2017; Martin & Kallmeyer, 2018), and they watch their NMs carry heavy workloads and demonstrate that they lack work-life balance (Martin & Kallmeyer, 2018). Many nurses from these two groups are choosing advanced practice nursing careers, making it harder for organizations to entice them to pursue management as a career option (AME Healthcare, 2018; Hewko et al., 2015).

There is a large body of work devoted to understanding the expectations of staff-nurses, what makes them satisfied, and what makes them leave, however, such constructs have been widely overlooked for the NM. Therefore, the purpose of this literature review and synthesis was to understand how organizational and practice environments influence NM job satisfaction.

Methods

An initial review of the literature was performed using the following EBSCOhost Research Databases: CINAHL Plus, APA PsycInfo, Business Source Premier, Health Source Nursing/Academic Edition, Human Resources Abstracts, and MEDLINE. Search terms were nurse managers, nurse leaders, nursing supervisors, nursing administration, practice environment, work climate, organizational climate, job satisfaction, work satisfaction, intention to stay, and intention to leave.
Inclusion Criteria and Data Extraction

This review and synthesis included only publications from academic and peer-reviewed journals that were in English and published between 2010-2020. Cultural differences might have made generalizability of the findings a challenge so only articles from western countries were included. Expert opinions, dissertations, editorials, and literature reviews were excluded from this review.

An initial review of the literature with the search terms and limiters of English only, peer reviewed-scholarly articles, and exclusion of dissertations and duplicates produced 1,485 articles. Limiting the search to publications between the years 2010-2020 and geography (the U.S., Canada, Europe and the U.K., Australia, and New Zealand) produced 548 articles. Adding age as a limiter (adults ages 19-70) and subject matter eliminated 403 publications bringing the count to 145 articles. A close review of titles and abstracts brought the number of articles to 25. Finally, an in-depth review of the abstracts and articles eliminated nine more leaving 14 articles meeting criteria for synthesis. These included quantitative \((n=7)\) and qualitative \((n=7)\) studies, and no mixed methods studies. Additional searches included the reference lists and bibliographies of pertinent studies and multiple Google searches, but these searches did not produce new articles.

Data Analysis

Articles included in this review were closely examined using professional guidelines for critiquing research studies, Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines (Preferred Reporting Items for Systematic Reviews and Meta-analyses [PRISMA], 2015), and Johns Hopkins Nursing guidelines for level of evidence (Dang, Dearholt, & Sigma Theta Tau, 2012; Galvan & Galvan, 2017; Pan, 2017). See Table1 for these guidelines.
The PRISMA diagram and search process is shown in Figure 1. The Matrix Method (Garrard, 2017) helped with organization and strategic analysis of the 14 publications and in Table 2.

**Table 1.** *Johns Hopkins Evidence-Based Practice: Evidence Level & Quality Guide*

<table>
<thead>
<tr>
<th>Level of Evidence (LOE)</th>
<th>Criteria for LOE</th>
<th>Quality Guides</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOE I</td>
<td><em>Experimental</em>, randomized controlled trials (RCTs), or systematic reviews of RCTs (with and without meta-analysis)</td>
<td><strong>High quality:</strong> Clear aims and objectives; consistent results across multiple settings; formal quality improvement, financial or program evaluation methods used; definitive conclusions; consistent recommendations with thorough reference to scientific evidence. <strong>Good quality:</strong> Clear aims and objectives; consistent results in a single setting; formal quality improvement or financial or program evaluation methods used; reasonably consistent recommendations with some reference to scientific evidence. <strong>Low quality or major flaws:</strong> Unclear or missing aims and objectives; inconsistent results; poorly defined quality improvement, financial or program evaluation methods used; recommendations cannot be made.</td>
</tr>
<tr>
<td>LOE II</td>
<td><em>Quasi-experimental</em>, systematic reviews of experimental studies (with or without meta-analysis)</td>
<td></td>
</tr>
<tr>
<td>LOE III</td>
<td><em>Non-experimental studies</em>, systematic reviews (with and without meta-analysis), and qualitative studies</td>
<td></td>
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<tr>
<td>LOE IV</td>
<td><em>Opinion of respected authorities</em> and/or nationally recognized expert committees/consensus panels based on scientific evidence, clinical guidelines</td>
<td><strong>High quality:</strong> Material officially sponsored by a professional, public, private organization, or government agency; documentation of a systematic literature search strategy; consistent results with sufficient numbers of well-designed studies; criteria-based evaluation of overall scientific strength and quality of included studies and definitive conclusions; national expertise is clearly evident; developed or revised within the last 5 years. <strong>Good quality:</strong> Material officially sponsored by a professional, public, private organization, or government agency; reasonably thorough and appropriate systematic literature search strategy; reasonably consistent results, sufficient numbers of well-designed studies; evaluation of strengths and limitations of included studies with fairly definitive conclusions; national expertise is clearly evident; developed or revised within the last 5 years. <strong>Low quality or major flaws:</strong> Material not sponsored by an official organization or agency; undefined, poorly defined, or limited literature search strategy; no evaluation of strengths and limitations of included studies, insufficient evidence with inconsistent results, conclusions cannot be drawn; not revised within the last 5 years.</td>
</tr>
<tr>
<td>LOE V</td>
<td><em>Non-research based</em>: Literature reviews, quality improvement programs, case studies, opinions of nationally recognized experts</td>
<td><strong>Literature Review, Expert Opinion, Case Report, Community Standard, Clinician Experience, Consumer Preference:</strong> <strong>High quality:</strong> Expertise is clearly evident; draws definitive conclusions; provides scientific rationale; thought leader(s) in the field. <strong>Good quality:</strong> Expertise appears to be credible; draws fairly definitive conclusions; provides logical argument for opinions. <strong>Low quality or major flaws:</strong> Expertise is not discernable or is dubious; conclusions cannot be drawn.</td>
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Figure 1. PRISMA diagram NM-JS Literature Review
<table>
<thead>
<tr>
<th>Article Information</th>
<th>Study Design, sample, &amp; Level of Evidence and location</th>
<th>Purpose of Article/Study</th>
<th>Findings</th>
<th>Limitations</th>
<th>Implications for Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baird-Simpson, B., Dearmon, V., &amp; Graves, R. (2017).</td>
<td>Quantitative, quasi-experimental Sample: NMs (n=8) from a large urban health care organization LOE: II (good quality) Location: the U.S.</td>
<td>To decrease the negative effects of larger NM Spans of Control (SOC) by adding an administrative assistant along with individual NM transformational leadership (TL). Goals were to increase NM job satisfaction and TL competency</td>
<td>Intervventional study. Post intervention, there were statistically significant improvements for both job satisfaction and likeliness to recommend (LTR) NM as a career choice; satisfaction pretest was 4.50, and posttest was 5.50 ($P=0.021$) and LTR pretest was 4.50 and postintervention was 5.38 ($P=0.006$). The mean LPI scores also improved postintervention. Participants intention to stay (ITS) also increased 6 to 9 postintervention. Intention to leave (ITL) related to burnout also dropped postintervention from 38.5% to 11.1%.</td>
<td>Small sample size makes generalizability challenging. At the time of the study, the tools used to measure NM job satisfaction had not been tested for its validity and reliability.</td>
<td>Study showed that mitigating the negative effects of NM large SOC improved job satisfaction, leadership competency, and intention to stay. NM turnovers represent a loss of human and fiscal capital. Participants in this study had increases in ITS, job satisfaction, and competency. Study provides evidence that the addition of leadership training and adding an assistant can improve NM outcomes.</td>
</tr>
<tr>
<td>Article Information</td>
<td>Study Design, sample, &amp; Level of Evidence and location</td>
<td>Purpose of Article/Study</td>
<td>Findings</td>
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<td>Hewko, S., Brown, P., Fraser, K., Wong, C., &amp; Cummings, G. (2015). Factors influencing nurse managers’ intention to stay or leave: A quantitative analysis. <em>Journal of Nursing Management, 23</em>, 1058-1066.</td>
<td>Quantitative-web based survey approach  <em>Sample:</em> Canadian NMs (<em>n</em>-95)  LOE=III (good quality)  Location-Canada</td>
<td>To examine the factors that may influence NMs’ intention to stay (ITS) or intention to leave (ITL).</td>
<td>Findings:  <em>Organizational and role factors:</em> feeling empowered, satisfaction with orientation, and supervisor relationships correlated with intention (good=ITS, poor=ITL)  <em>Individual factors:</em> emotional exhaustion and cynicism=ITL. Job satisfaction and greater professional efficacy was higher for those with ITS.</td>
<td>The researchers’ initial web-based survey resulted in only a 33% response rate.</td>
<td>Empowerment, JS, work-life-balance (WLB), quality care, and senior leadership, are factors that may influence NMs’ retention intentions. Therefore, organizations must strive to cultivate an environment of trust that empowers NMs, through transformational leadership.</td>
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<td>Huddleston, P. &amp; Gray, J. (2016). Describing nurse leaders’ and direct care nurses’ perceptions of a healthy work environment in acute care settings, Part 2. <em>Journal of Nursing Administration, 46</em>(9), 462-267</td>
<td>Qualitative-exploratory designed study using NM focus groups.  <em>Sample:</em> 72 NMs from 10 acute care units and 75 direct care nurses (DCN)  LOE: III (high quality)  Location: Texas</td>
<td>To examine NMs and DCN perceptions of a healthy work environment (HWE).</td>
<td>Six themes emerged of NMs’ and DCNs’ perception and definitions of an HWE; authentic leadership, proper staffing, recognition, good decision making, communication, collaboration, teamwork, and safety (psychological and physical).</td>
<td>The researchers stated that using only one healthcare facility may have limited the generalizability of their findings.</td>
<td>Findings from this study could help guide the development of new tools used to measure an HWE for NMs and DCN. It offers confirmation of the findings of American Association of Critical-Care Nurses (AACN) and their characteristics of an HWE.</td>
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Sample: NM (n=636) from 36 different hospitals in the Southwestern U.S.  
LOE=III (high quality)  
Location- Southwestern U.S. | To explore factors that may “buffer” or help with the adverse outcomes of NMs’ stress. | Levels of stress for the NMs were found to be above average (M=3.66, SD=0.80), and these stresses correlated positively with mental health issues (r=0.47, p<0.01) and health problems (r=0.45, p<0.01). Stress was inversely correlated with job satisfaction (JS) (r=-0.45, p<0.01), and organizational commitment (r=-0.20, p<0.01).  
Multiple regression testing found JS and organizational commitment to be predictive of intention to quit (ITQ), although ITQ was not high (M=2.57, SD=1.12) for this group.  
Autonomy (M=3.90, SD=0.71) and predictability (M=3.19, SD=0.82) helped to buffer stress.  
JS and had a moderately negative correlation for ITQ (r=-0.42). Good co-worker relationships (r=-0.18), good supervisor relationships (r=-0.20), and strong hospital support (r=-0.317) were all inversely correlated with job stress. | This study only drew participants from the Southwestern portion of the US; therefore generalizability is an issue. Responses were all self-assessments and could show bias. | This study supports claims that the NM role is stressful, but these effects can be buffered. Job predictability and autonomy both moderated the effects of a stressful NM job. There were, however, no variables that helped buffer job stress on organizational commitment, or mental, and physical problems. Organizations should encourage proper physical and mental health maintenance for their NMs, by supporting a good WLB, and by providing avenues to de-stress (i.e. health and fitness programs).  
Job predictability, strong relationships with their supervisors and peers, as well as autonomy in their practice were positively linked to JS for these NMs. |
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<td>Kath, L., Stichler, J, Ehrhart, M. &amp; Sievers, A. (2013). Predictors of nurse manger stress: A dominance analysis of potential work environment stressors. <em>International Journal of Nursing Studies, 50</em>, 1474-1480</td>
<td>Quantitative, cross-sectional survey method. <em>Sample</em>: Convenience sampling of NMs (n=480) from 36 hospitals. LOE=III (high quality). Location: Southwestern U.S.</td>
<td>To measure the importance of five predictors of NMs stress; ambiguity of the role, overload, conflict, organizational restraints, and interpersonal conflict.</td>
<td>Surveys included demographics and several instruments found to be psychometrically strong (Cronbach α=0.65-0.89). Results: In order of importance, regarding predictor to NM job stress. 1. Role overload ($R^2$-0.250) 2. Organizational constraints ($R^2$-0.186) 3. Role conflict ($R^2$-0.153) 4. Interpersonal conflict ($R^2$-0.085) 5. Role ambiguity ($R^2$-0.049)</td>
<td>Two major limitations to this study: causation and generalizability of the findings. As a non-experimental cross-sectional study, causation cannot be determined. Additionally, participants were from the southwestern U.S. and impacts generalizability.</td>
<td>Findings here indicate that nursing leaders should minimize NMs role overload, organizational constraints, and conflict within the role. Supervisors and organizations should help NMs with the daily conflicts and stresses of the job.</td>
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<td>Keys, Y. (2014). Looking ahead to our next generation of nurse leaders: Generation X nurse managers. <em>Journal of Nursing Management, 22</em>, 97-105</td>
<td>Qualitative using semi-structured interviews. <em>Sample</em>: 16 generation X NMs (birth years 1965-1980) from multiple hospitals. LOE=III (good quality). Location: the U.S.</td>
<td>To gain awareness of generation X NMs’ perspectives of success, fulfilment, and organizational characteristics that help improve commitment to the profession.</td>
<td>Professional success included knowing their staff, quality patient care, proper skill development, positive patient outcomes and metrics. Fulfilment included supportive supervisors, flexibility in work hours, good work-life balance, proper function of their unit. Recommendations: Orientation and training, Innovative/flexible scheduling, supervisor support.</td>
<td>Only magnet status hospitals participated in the study, thereby limiting the generalizability of the findings.</td>
<td>At the time of this study, the landscape of the NM world was dominated by boomers. The study offered insights unique to the Generation X NMs and may vary from boomer NMs. It is important for organizations to understand the factors that influence fulfilment and success for generation X NMs to retain them.</td>
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<td>Moore, L., Sublett, &amp; Leahy, C. (2016). Nurse managers’ insights regarding their role highlight the need for practice changes. <em>Applied Nursing Research</em>, 30, 98-103.</td>
<td>Qualitative-descriptive study  &lt;br&gt;<em>Sample:</em> Participants (<em>n</em>= 13) were from an urban Midwestern acute care facility, with at least one year of experience as a NM  &lt;br&gt;LOE=III (good quality)  &lt;br&gt;Location-Midwestern, U.S.</td>
<td>To explore the lived experiences of NM in practice.</td>
<td>Path to becoming a NM  &lt;br&gt;- some planned to and others “fell” into the role and most were not ready  &lt;br&gt;- zero or poor orientation  &lt;br&gt;- learned along the way/learning on their own  &lt;br&gt;Grow in the role  &lt;br&gt;- wished they had had guidance in the beginning, and they still wish for that  &lt;br&gt;- disliked the time constraints on their “mentors” and bosses to help them grow in their role  &lt;br&gt;- want more training</td>
<td>Participants were 85% female. Including more men would add to the richness of findings. The study took place in a Midwestern region of US but including add to the richness of findings and generalizability.</td>
<td>Organizations should entice staff RNs into pursuing leadership roles but provide them with detailed descriptions of the role. Offer more training and certifications. Foster the relationships between expert NMs to help new NMs improve their competencies. Offer flexibility. Make the NM role appealing to younger generations of nurses. Strive to retain their NMs already in practice.</td>
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<td>Saifman, H. &amp; Sherman, R. (2019). The experience of being a millennial nurse manager. <em>Journal of Nursing Administration</em>, 49(7/8), 366-371</td>
<td>Qualitative-interpretive, phenomenological study  &lt;br&gt;<em>Sample:</em> Millennial generation NMs (<em>n</em>=25), from 13 states with ages ranging from 28-36.  &lt;br&gt;LOE=III (good quality)  &lt;br&gt;Location: U.S.</td>
<td>To explore the lived experience of the millennial NM in practice.</td>
<td>Themes that emerged:  &lt;br&gt;- Coming into the role-some were “groomed” others were not. Many expressed that their age felt like a challenge.  &lt;br&gt;- Orientation/training too informal.  &lt;br&gt;- Director support-essential but lacking for most  &lt;br&gt;- To positively influence their staffs’ growth  &lt;br&gt;- Managing change--changes often meant adding to their workload. There was an expressed feeling of being set up to fail.</td>
<td>The cross-sectional design of this study could be a limiter. Also, most of the sample came from a not-for-profit hospital. Expanding this to for-profit could add to the richness of the findings.</td>
<td>The millennial generation NM wants feedback, and a lot of training. This generation of NM need mentoring, guidance, and training to navigate their roles. This new generation of NMs might require role design modification as they will not tolerate being overworked and under satisfied.</td>
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*Sample:* 21 NMs from 3 U.S. acute care hospitals both magnet and non-magnet status.  
LOE=III (high quality)  
*Location:* U.S. | To explore the lived experiences of the NM to better understand their job stress and how they cope with it.  
*Themes:*  
• Role was overwhelming  
• Stressful situations—people, resources, tasks and work, and performance outcomes  
• Poor training for the job.  
• Coping strategies—problem focused, emotional focused, and other strategies  
• Stress of the role causes psychological outcomes such as anxiety, exhaustion, and decreased JS | Researcher bias is always of concern in this type of a study. Also, the use of purposeful selection may have limited generalizability. | Organizations have a responsibility to adequately train new NMs, support them in the role, and offer mentorships and training after they are in the role. |
| Udod, S., Dean-Care, W, Cummings, G., & Jenkins, M. (2017). Impact of role stressors on the health of nurse managers. *Journal of Nursing Administration, 47*(3), 159-164 | Qualitative, exploratory study  
*Sample:*  
• purposeful sampling  
• NMs (*n*-23)  
• one focus group (*n*-5)  
LOE=III (high quality)  
*Location:* rural and urban hospitals in Canada. | To understand NMs’ perception of role stressors, strategies to cope with such stressors, and their own health related to continued exposure to such stressors.  
*Roles stressors:*  
• poor resources  
• constant change  
• supervisors were disconnected from practice.  
*Coping strategies:*  
• taking a pro-active approach to problem solving  
• having social support  
• offering co-managers  
*Health outcomes:*  
• depression  
• weight gain/loss/insomnia | This study may lack generalizability for other areas of North America as Canada has a different healthcare system than the U.S. | Findings suggested that NMs often carry high levels of stress that can impact their health from burdensome workloads, lack of senior support, and poor allocation of resources. Allowing NMs to re-design their roles with such collaborators as co-managers could have positive outcomes in reducing stress for NMs. |
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Sample: NM (n=291) working in U.S. hospitals, who were in their positions 3 months or more  
LOE=III (high quality)  
Location: U.S. | To examine factors that may influence NMs job satisfaction (JS) and intention to leave (ITL) | • 70% had JS,  
• half had ITL in five years  
ITL came from  
• burnout (30%)  
• retirement (22%)  
• promotion (15%) | The study was limited in that it examined only acute care NMs. Adding tertiary and outpatient settings could help make the findings more generalizable. | The study helps highlight the need for leaders to evaluate their NMs satisfaction as well as their ITL, when, and why. Organizations may find that some NM positions need to be revisited and perhaps reconstructed to increase JS and to attract staff nurses |
Sample: 127 NM  
LOE=III (high quality)  
Location: U.S. | Analyze and understand the domains of the NM practice environment.  
leaders should create/provide:  
• culture of patient safety  
• constructive nurse manager-director relationships  
• culture of generativity  
• adequate resources  
• culture of meaning  
• collegial nurse manager-physician relationships  
• effective nurse manager-unit staff relationships  
• fair and manageable workload | Because these are NM perceptions, there could be biases, thus leaving out other pertinent information could be missing. | The collective experience of these participants was that they valued time spent with their staff, but the demands of the NM role simply could not be managed. Organizations need to evaluate expectations of the NM role and be realistic. Leaders must foster trusting relationships with their NMs but coaching them not by micromanaging them. Lastly, organizations need to create a milieu of collaboration and support to promote patient safety. |
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<td>Warshawsky, N., Wiggins, A., Rayens, M. (2016). The influence of the practice environment on nurse managers’ job satisfaction and intention to leave. <em>Journal of Nursing Administration, 46</em>(10), 501-507.</td>
<td>Quantitative, survey approach <em>Sample</em>: NMs (<em>n</em>-348) from 25 hospitals and 9 healthcare systems. LOE=III (high quality) Location: U.S.</td>
<td>To explore the elements of the practice environment on NMs’ job satisfaction (JS) and intention to stay (ITL).</td>
<td><em>Reasons to leave</em>: • burnout (37%) • promotion (20%) • organizational reasons (14%) • career change (13%) • retirement (8%) <em>The NMPES scores</em>: • highest was NM staff relations (5.0) • lowest was adequate resources (3.9)</td>
<td>Cause and effect are difficult to establish due to the use of the cross-sectional survey design.</td>
<td>Organizations must foster practice environments where patient safety is a core value, cultivate NM and staff relationships, have a commitment to career development with mentorships and training, offer fair/balanced workloads, provide adequate resources, and continually examine their NMs’ satisfaction and practice environment.</td>
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<td>Weavers, S., Paliwal, M., Hessels, A., &amp; Wurmser, T. (2019). Administrative supervisors and nursing unit-based managers: Collaboration and job satisfaction. <em>Nursing Economics</em>, 37(2),67-76.</td>
<td>Design: quantitative cross-sectional study <em>Sample</em>: 72 unit based NMs, and 41 supervisors LOE=III (good quality) Location: U.S. Mid-Atlantic region</td>
<td>To describe collaboration between unit based NMs and their supervisors. To examine the influence this relationship has on job satisfaction (JS) and intention to stay (ITS)/intention to leave (ITL).</td>
<td>Findings: (JS-Likert scale 1 lowest to highest 6) • JS of 4.82 NM/4.83 Sup • LTR 61 NMs/68% Supervisors • NM ITS ≤ years 68% • Sup ITS ≤ 5 years 57% • Collaboration was negatively associated with ITL scores for NM-( R = -0.457, P &lt; 0.01 ) and for Sup ( R = -0.562, P &lt; 0.01 )</td>
<td>Cross sectional design makes causation difficult. The sample came from Mid-Atlantic region so generalizability may be difficult.</td>
<td>Organizations must create practice environments where collaboration can be cultivated.</td>
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Results

This review produced four overriding themes that influence NM job satisfaction: workloads, organizational support, the NM-supervisor relationship, and competency and training. These four themes will be discussed in detail. Implications for practice and guidance-based recommendations will follow the discussion section.

Workloads

Ten of the 14 publications in this review emphasized that most NMs carry large spans of control (the number of employees they manage), and often feel overwhelmed by these heavy workloads. This is not surprising, given that the role of the NM is fraught with copious complex duties. Nurse managers must maintain their own clinical skills, develop proper management abilities, and supervise valuable human and financial resources (Moore et al., 2016; Saifman & Sherman, 2019).

The average NM has 50-60 full-time equivalents (FTEs) or workload equivalents, but many of the NMs from these studies reported having to oversee multiple units and hundreds of FTEs (Saifman & Sherman, 2019; Shirey, Fisher, McDaniel, Doebbeling, & Ebright, 2010; Warshawsky & Havens, 2014; Warshawsky et al., 2013a; Warshawsky et al., 2016). These heavy workloads make it difficult for NMs to execute all of their duties such as mentoring staff (Saifman & Sherman, 2019; Warshawsky et al., 2013a; Warshawsky et al., 2016; Warshawsky & Havens, 2014). Such outcomes can affect retention and recruitment. Warshawsky & Havens (2014) found that NMs who carried fewer FTEs ($t = -2.13$, $df=259$, $P=0.03$) intended to stay with their jobs for more than five years and were more likely to recommend management as a career ($\chi^2 = 9.18$, $df=2$, $P=0.01$).
Burdensome workloads also become stressful for NMs physically and mentally (Hewko et al., 2015; Kath, Stichler, & Ehrhart; 2012; Kath, Stichler, Ehrhart, & Sievers, 2013; Shirey et al., 2010; Udod, Dean-Care, Cummings, & Jenkins, 2017). Five studies in this review found that stress from large workloads was equated with negative physical and psychological outcomes such as depression, anxiety, hypertension, sleep pattern disturbances, and even weight changes (Hewko et al., 2015; Kath et al., 2012; Kath et al., 2013; Shirey et al., 2010; Udod et al., 2017). Kath et al (2012) found that NM job satisfaction negatively correlated with stress ($r=-0.45$, $p<0.01$) and intention to quit ($r=-0.42$, $p<0.01$).

Organizational Support

Nine publications emphasized that organizational support strongly influences NMs’ job satisfaction. In these studies supportive organizations fostered the wellbeing of their NMs through leadership that cultivated a healthy practice environment with adequate resources and limited barriers to success (Simpson, Dearmon, & Graves, 2017; Hewko et al., 2015; Kath et al., 2012; Kath et al., 2013; Udod et al., 2017; Warshawsky et al., 2013a). In four studies a supportive organizational environment was found to mediate the effects of NM job stress (Simpson et al., 2017; Hewko et al., 2015; Huddleston & Gray, 2016; Kath et al., 2012). In three studies hospital support and appropriate allocation of resources were found to be predictive of NM job satisfaction and intention to stay (Hewko et al., 2015; Kath et al., 2012; Warshawsky et al., 2016). The NMs from three qualitative studies felt that positive administrative support and adequate resources were foundational to a healthy work environment and job satisfaction (Huddleston & Gray, 2016; Udod et al., 2017; Warshawsky et al., 2013a), and in two studies organizational provision of co-managers and adequate ancillary staff was linked to NM job satisfaction (Simpson et al., 2017; Kath et al., 2012).
Many of the NMs from these studies, however, lacked organizational support and were not satisfied in their jobs (Shirey et al., 2010; Udod et al., 2017; Warshawsky et al., 2013a). Participants from several studies expressed frustration over lack of institutional support and the resources needed to implement organizational initiatives (Moore et al., 2016; Udod et al., 2017; Warshawsky et al., 2013a). There was a shared perception among NM participants that organizational constraints create obstacles to success often exacerbated by frequent policy changes and administrative “red tape” (Kath et al., 2013; Shirey et al., 2010, p. 84; Udod et al., 2017; Warshawsky et al., 2013a).

**The NM-Supervisor Relationship**

Eight studies in this review emphasized the importance of the NM-supervisor relationship in regard to job satisfaction. Hewko et al. (2015) found that NMs with empowering supervisors were more likely to stay ($M=4.06$, $P<0.001$) than those who did not have such support ($M=3.49; P<0.001$). Kath et al (2012) found that supervisor support was positively correlated with NM job satisfaction ($r=0.46$, $P<0.001$) and was negatively correlated with intention to quit ($r=-0.386$, $P<0.01$). Warshawsky et al (2016) found that constructive NM-supervisor relationships negatively correlated with intention to leave ($\beta=-0.405$, $P=0.002$), and Weaver et al. (2019) found that strong supervisor collaboration correlated with increased job satisfaction ($r=0.647$, $P<0.001$). Four qualitative studies emphasized the supervisor relationship as an essential characteristic of a healthy work environment and “key” to job satisfaction (Huddleston & Gray, 2016; Keys, 2014; Saifman & Sherman, 2019, p. 369; Warshawsky et al., 2013a).

Unfortunately, many of the NMs from these publications reported having poor NM-supervisor relationships (Keys, 2014; Saifman & Sherman, 2019; Warshawsky et al., 2013a). Participants with unsupportive supervisors described a practice environment that often felt
punitive (Warshawsky et al., 2013a). Some NMs from these studies expressed frustration with the lack of autonomy in their roles and disliked the feeling of being micro-managed by their directors. For many this type of leadership blocked their success and satisfaction (Keys, 2014; Warshawsky et al., 2013a).

*Competency and Training*

Seven publications stressing the significance of competency and training were found in this review and synthesis. Proficiency and competency were equated with job fulfillment and satisfaction for the NMs in two qualitative studies (Simpson et al., 2017; Keys, 2014). Researchers from a Canadian study found positive correlations between NMs’ intention to stay and the adequacy of their training (Hewko et al., 2015).

Yet many of the NM participants from these studies lacked even basic orientation and felt unprepared for their jobs (Simpson et al., 2017; Hewko et al., 2015; Moore et al., 2016; Saifman & Sherman, 2019; Shirey et al., 2010). Some NMs described their experiences as having “fallen” into their positions and learning was described as “trial by fire” (Moore et al., 2016, p. 100). Participants from two studies said they almost quit in their first year as a NM due to the complexity of the role compounded by a total lack of training (Moore, et al., 2016; Saifman & Sherman, 2019). In one study examining millennial NMs a participant who received no orientation said, “I did not expect to be thrown in this way, I just kind of learn on the go” (Saifman & Sherman, 2019, p.22).

Even after they were no longer novices many NMs expressed feeling like they lacked “foundational knowledge” to execute the duties of their jobs (Moore et al., 2016, p. 101; Saifman & Sherman, 2019). The absence of adequate training and competencies can have serious fiscal ramifications for institutions. In three of these studies participants admitted to having poor
financial management skills because they had no training in this area (Keys, 2014; Moore et al., 2016; Shirey et al., 2010; Saifman & Sherman, 2019). One NM being interviewed said, “I am a millennial, so I don’t even know how to balance a check book, and now I’m in charge of a $1.2 million budget” (Saifman & Sherman, 2019, p.3).

Discussion

Determination of each study’s level of evidence (LOE) followed the Johns Hopkins Nursing Evidence-based Practice guidelines for Levels of Evidence and quality (Dang et al., 2012). Most of the publications in this review were cohort studies and all were of good or high quality. Of the seven, only one quantitative study had LOE of II. Six had a LOE of III. All seven quantitative studies reported strong psychometric properties for their measurement tools, increasing the validity of their findings. Each of the qualitative studies had a LOE of III and demonstrated sufficient validity and credibility through detailed accounts of their process with strict adherence to professional guidelines. This added to their overall trustworthiness. Data were collected from multiple sites in more than half of these 14 studies thus increasing generalizability of the findings.

An in-depth review of the 14 publications was performed to critically synthesize their findings regarding factors that may influence NM job satisfaction. From that synthesis four major themes emerged: 1) burdensome workloads are common among NMs negatively affecting job satisfaction; 2) NMs need organizational support which includes positive work environments and the adequate provision of resources; 3) the NM-supervisor relationship is associated with job satisfaction and retention; 4) NMs often feel overwhelmed with their own lack competency because organizations fail to provide them with proper training.
This review and synthesis revealed that workloads have a major impact on NMs’ perceived job satisfaction. This is consistent with findings from other studies (Loveridge, 2017; Oliver, Gallo, Griffin, White, & Fitzpatrick, 2014; Shirey, 2009; Warshawsky, Lakes, Rayens, & Havens, 2013b). Previous researchers have shown that regulatory changes and large numbers of FTEs have radically increased the duties of the NM (Loveridge, 2017; Oliver et al., 2014; Shirey, 2009; Warshawsky et al., 2013b; Warshawsky, 2018). Evidence also indicates that burdensome workloads cause stress and burnout and are not conducive to job satisfaction (Simpson, Dearmon, & Graves, 2017; Cox, 2019; Loveridge, 2017; Shirey et al., 2010; Warshawsky et al., 2016; Warshawsky & Havens, 2014).

In this review organizational support was important for NMs’ job satisfaction. Supportive organizations foster the success and professional development of their NMs and provide adequate personnel, training, equipment, continuing education, and supplies to do so (Simpson et al., 2017; Hewko et al., 2015; Kath et al., 2012; Kath et al., 2013; Udod et al., 2017; Warshawsky et al., 2013). Other studies had similar outcomes, demonstrating that institutional support is an essential component of a healthy work environment (Cox, 2019; Shirey, 2009, Dols et al., 2019; Oliver et al., 2014; Ulrich et al., 2014). This type of support has also been shown to be predictive of nurse and NM satisfaction and retention (Dols et al., 2019; Martin & Kallmeyer, 2018; Ulrich et al., 2014; Weaver et al., 2019).

The quality of the NM-supervisor relationship was also found to be predictive of NM job satisfaction (Hewko et al., 2015; Kath et al., 2012; Warshawsky et al., 2016), and numerous studies have found this relationship to be associated with engagement and empowerment. Such relationships can also influence retention (Dols et al., 2019; Loveridge, 2017; Martin &
Kallmeyer, 2018; Oliver et al., 2014; Shirey, 2009; Ulrich et al., 2014; Warshawsky et al., 2013c).

Finally, competency and training were found to greatly influence NMs’ job satisfaction (Simpson et al., 2017; Hewko et al., 2015; Shirey et al., 2010; Warshawsky et al., 2016). Despite the importance of this, in this review NMs did not receive adequate preparation and training for their roles (Loveridge, 2017; Oliver et al., 2014; Warshawsky & Cramer, 2019). Mentors, directors, supervisors, and other administrative personnel would benefit from paying close attention to the findings in this study and making appropriate changes in their respective institutions. Millennials place a high value on work proficiency, and they expect and deserve more training in their leadership roles (Anselmo-Witzel et al., 2017; Yarbrough, Martin, Alfred, & McNeill, 2017). This younger generation of NMs may continue to abandon their roles unless they receive at least adequate training and are properly mentored.

Implications and Recommendations for Practice

Many NMs carry heavy workloads and feel overwhelmed and dissatisfied. Healthcare institutions must realistically distribute their NMs’ FTEs and unit responsibilities and provide effective ways to help them handle large and heavy spectrums of responsibilities (Kath et al., 2012; Martin, & Kallmeyer, 2018; Martin & Warshawsky, 2017; Shirey et al., 2010). Younger generations of NMs value work-life-balance and will likely not stay long in jobs with such burdensome workloads (AME Healthcare, 2019; Anselmo-Witzel et al., 2017; Deloitte Global, 2019; Fishman, 2016; Moritz, 2014). Organizations must thus re-examine their core values to ensure they are supporting their NMs’ success and professional growth. Institutions failing to do so may find recruitment and retention increasingly difficult.
The NM-supervisor relationship was found to be a major factor of job satisfaction. Institutions would be wise to foster these connections. Younger generations of NMs expect their leaders to encourage them and provide frequent and positive feedback (Chung & Fitzsimons, 2013; Dorsey & Blanco, 2015; Moritz, 2014). Administrators and supervisors should employ updated mentoring and coaching models of leadership to match the needs of younger, highly collaborative NMs. Organizations should consider offering leadership classes to their directors and senior executives to help them develop such skills (Marshall & Broome, 2017; Sherman, 2019).

Competency is obviously important to NMs, yet many of the NMs from these studies felt woefully unprepared and overwhelmed by being thrust into positions for which they had inadequate training (Saifman & Sherman, 2019; Moore et al., 2016). To improve the competency of their NMs organizations must provide adequate orientation periods, mentorship opportunities, and continuing education to support their NMs’ professional development and success (Martin, & Kallmeyer, 2018; Oliver et al., 2014; Warshawsky & Cramer, 2019). It is also important that their formal training follow the Nurse Manager Competencies guidelines as outlined by the American Organization for Nursing Leadership (Warshawsky & Cramer, 2019). Such competencies could be taught and reinforced in institutionally authorized NM transition to practice programs.

Nursing scientists also recommend that NMs have at least a master’s level of education (Warshawsky & Cramer, 2019; Yoder-Wise, Scott, Sullivan, 2013). The NM is responsible for accounting, managing valuable resources, and rapidly changing healthcare initiatives. Such skills have not traditionally been available in nursing programs but are only taught at the graduate level (Warshawsky & Cramer, 2019). Organizations should consider offering generous tuition
reimbursement incentives for such educational training (Oliver et al., 2014; Warshawsky & Cramer, 2019). See Table 3 for a list of guidance-based recommendations for organizations and leaders.

**Table 3. Guidance-based Recommendations for NM job satisfaction**

<table>
<thead>
<tr>
<th>Themes</th>
<th>Recommendations for organizations and Leaders</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• realistically distribute their NMs’ FTEs and unit responsibilities&lt;br&gt;• provide effective ways to help NMs with large spans of control&lt;br&gt;• allow for creative work options like an occasional work from home alternative&lt;br&gt;• offer NM sabbaticals&lt;br&gt;• give NMs a co-manager and/or an administrative assistant</td>
<td>Simpson et al., 2017; Martin, &amp; Kallmeyer, 2018&lt;br&gt;Martin &amp; Warshawsky, 2017; Simpson et al., 2017&lt;br&gt;Martin &amp; Warshawsky, 2017&lt;br&gt;Warshawsky &amp; Havens, 2014&lt;br&gt;Moore et al., 2016; Simpson et al., 2017</td>
</tr>
<tr>
<td>Workloads</td>
<td>• proper allocation of human and fiscal resources&lt;br&gt;• cultivate a healthy and supportive organizational climate&lt;br&gt;• empower NMs and invest in their success and wellbeing&lt;br&gt;• offer career development pathways and programs&lt;br&gt;• review organizational practices and eliminate barriers to NM support and successes</td>
<td>Simpson et al., 2017; Udod et al., 2017; Martin, &amp; Kallmeyer, 2018&lt;br&gt;Martin, &amp; Kallmeyer, 2018; Warshawsky et al., 2020&lt;br&gt;Simpson et al., 2017; Warshawsky et al., 2020; Weaver et al., 2019&lt;br&gt;Martin, &amp; Kallmeyer, 2018; Warshawsky et al., 2020; Weaver et al., 2019&lt;br&gt;Martin, &amp; Kallmeyer, 2018; Saifman &amp; Sherman, 2019&lt;br&gt;Cox, 2019; Dols et al., 2019; Saifman &amp; Sherman, 2019</td>
</tr>
<tr>
<td>Organizational Support</td>
<td>• Provide frequent and positive feedback&lt;br&gt;• encourage autonomy&lt;br&gt;• be encouraging and empowering&lt;br&gt;• avoid punitive actions&lt;br&gt;• develop a culture of coach leadership&lt;br&gt;• offer leadership classes to senior executives and directors</td>
<td>Cox, 2019; Martin, &amp; Kallmeyer, 2018&lt;br&gt;Martin, &amp; Kallmeyer, 2018; Saifman &amp; Sherman, 2019&lt;br&gt;Cox, 2019; Sherman, 2019; Weaver et al., 2019; Marshall &amp; Broome, 2017; Sherman, 2019&lt;br&gt;Bees, 2017; Faller &amp; Gogek, 2019; Sherman, 2019; Warshawsky et al., 2020&lt;br&gt;Bees, 2017; Dols et al., 2019; Martin &amp; Kallmeyer, 2018; Warshawsky et al., 2020</td>
</tr>
<tr>
<td>The NM-Supervisor Relationship</td>
<td>• establish pathways and training programs for improving NM professional development and proficiency&lt;br&gt;• assess the effectiveness of the onboarding process and provide adequate formal orientations&lt;br&gt;• develop and implement mentorship and coaching programs&lt;br&gt;• provide continuing education opportunities such as graduate studies and certifications&lt;br&gt;• offer competitive tuition reimbursements</td>
<td>Martin, &amp; Kallmeyer, 2018; Warshawsky &amp; Cramer, 2019; Warshawsky et al., 2020&lt;br&gt;Martin, &amp; Kallmeyer, 2018; Warshawsky et al., 2020&lt;br&gt;Martin, &amp; Kallmeyer, 2018; Saifman &amp; Sherman, 2019; Warshawsky &amp; Cramer, 2019&lt;br&gt;Warshawsky et al., 2020&lt;br&gt;Simpson et al., 2017; Martin, &amp; Kallmeyer, 2018; Warshawsky et al., 2020</td>
</tr>
</tbody>
</table>
Conclusions

The NM plays an essential role in staff-nurse outcomes, quality patient care, and healthcare transformation. For these reasons organizations and nursing leaders must protect and expand the supply of such valuable employees. This review outlined factors that influence NMs’ job satisfaction, both positively and negatively. Many of the publications from this study indicated that negative factors (e.g. overwhelming NM workloads) dominate the practice. These findings should alarm healthcare organizations and encourage many to reduce managerial spans of control for NMs. Other factors influencing NMs satisfaction were organizational support, the NM-supervisor relationship, and training and competency. To improve NM satisfaction institutions should cultivate a supportive practice environment that promotes their NMs’ interorganizational relationships, professional growth, and competency.

Knowledge Gap and Future Research

This review of the literature found only a limited number of studies dedicated to NM job satisfaction. This underscores the need for more research dedicated to all relevant aspects of NM job satisfaction. Within this category, there is a subset that posits an even bigger gap in the literature; research regarding differing generations NM perceptions of their work environments and related job satisfaction. In this area, the research is sparse at best, despite current research indicating that NM expectations for acceptable organizational practices differ by generation (Christensen, Wilson, & Edelman, 2017; Dols et al., 2019; Faller & Gogek, 2019). Generation Xers and millennials now make up the bulk of NMs, yet little is known about these two groups in this role. For these reasons researchers must examine the effects of generational membership on NMs’ expectations for practice and job satisfaction. Such research findings would help organizations to improve work environments, construct retention strategies to meet generational
expectations, and create better recruitment approaches to attract generation Xers and millennials nurse management roles as a long-term career option.
References


36
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Udod, S., Dean-Care, W., Cummings, G., & Jenkins, M. (2017). Impact of role stressors on the health of nurse managers. *Journal of Nursing Administration, 47*(3), 159-164. doi: 10.1097/NNA.0000000000000459


CHAPTER 3: NURSE MANAGER JOB SATISFACTION: METHODOLOGY

Abstract

The nurse manager (NM) is an indispensable part of healthcare delivery team. They influence patient care, impact the retention of staff-nurses, and helps to employ complex policy changes and initiatives. Poor job satisfaction, retention, and recruitment outcomes are threatening the supply of NMs. Today, there are three different generations of NMs, boomers, generation Xers, and millennials, each with their own perception and expectations of a healthy practice environment and job satisfaction. However, not much research has focused on the these differences. The purpose this cross-sectional, study was to determine the effects of generational membership on NMs’ perception of their work environment and their job satisfaction. A secondary analysis of survey data from a national sample of 647 NMs was used to explore the relationship among generational membership, NMs’ perception of the practice environment, and their job satisfaction. General linear multiple regression analysis found no significant differences in practice environment or job satisfaction ($R^2 = .404, p = .58$) by generational membership. The only significant predictor of job satisfaction was the NMPES ($\beta = .633; p < .001$). Though generational membership did not impact NMs job satisfaction for this sample, the NMPES was predictive of satisfaction. Further study is needed to explore other factors that influence NMs satisfaction and retention.
Nurse Manager Job Satisfaction

The considerable exodus of baby boomer nurses and nurse managers (NMs) to retirement over the past decade has impacted the national supply. Generation Xers and millennials are now in the majority for the profession, so boomer retirements may no longer be the primary cause for the shortages (Dols, Chargualaf, & Martinez, 2019; Warshawsky & Cramer, 2019). Though the magnitude of NM shortages is not fully known, recent studies show that turnovers are rising, the number of experienced NMs has declined, and recruitment remains problematic (Martin, & Kallmeyer, 2018; Parchment & Andrews, 2019; Warshawsky & Cramer, 2019).

The NM is one of the most influential members of the healthcare team overseeing vital daily functions such as staffing, recruiting, implementing healthcare changes, and supervises large budgets and valuable resources (Saifman & Sherman, 2019; Warshawsky, Lake, & Brandford, 2013a; Warshawsky, Rayens, Stefaniak, & Rahman, 2013b). They are responsible for creating an environment that cultivates positive organizational, nursing, and patient outcomes (Hewko, Brown, Fraser, Wong, & Cummings, 2015; Ulrich, Lavandero, Wood, & Early, 2014). Organizations must, therefore, retain their seasoned NMs and improve recruitment to avoid negative outcomes (Simpson, Dearmon, & Graves, 2017; Warshawsky et al, 2013b; Warshawsky & Havens, 2014).

Background

Retaining NMs is a multifaceted phenomenon that often includes their practice environment and job satisfaction (Hewko et al., 2015; Kath, Stichler, & Ehrhart, 2012; Warshawsky et al., 2013a; Warshawsky, Wiggins, Rayens, 2016). These concepts among staff-nurses have been examined extensively, but not in the NM population. Research also indicates that expectations, perceptions of work environments, and job satisfaction differ by generation for
all professions (Christensen, Wilson, & Edelman, 2017; Chenkovich & Cates, 2016; Deloitte Global, 2019; Dols et al., 2019). Sparse research efforts, however, have examined generational differences, NM’s perceptions of their practice environments and job satisfaction in tandem. The purpose of this study, therefore, was to determine the relationship among generational membership, NM perception of the practice and job satisfaction.

The Nurse Manager Practice Environment

Most NMs attribute a strong organizational commitment to the core values of patient safety and quality care as fundamental to the practice environment (Hewko et al., 2015; Warshawsky et al., 2013a; Warshawsky et al., 2013b; Warshawsky et al., 2016). Another key aspect to the NM practice environments is the proper organizational appropriations of fiscal and human resources, innovative technology, modern equipment, and adequate supplies (Hewko et al., 2015; Warshawsky et al., 2013a). Most NMs would say that their inter-professional relationships with supervisors, co-workers, and staff are essential to a healthy practice environment (Hewko et al., 2015; Kath et al., 2012; Simpson et al., 2017; Warshawsky et al., 2013a; Warshawsky et al., 2016; Weavers, Paliwal, Hessels, & Wurmser, 2019). Lastly, a practice environment that offers NMs manageable workloads and a balanced work-life can improve their morale, satisfaction, and retention (Kath et al., 2012; Martin & Kallmeyer, 2018; Warshawsky et al., 2013a; Warshawsky et al., 2016).

Job Satisfaction

Job satisfaction is defined as a positive, psychological reaction people have to their jobs as part of their perception, awareness, feelings, conduct, and performance (Castaneda & Scanlan, 2014; Holmberg, Caro, & Sobis, 2018). As a concept, it has been widely studied by nursing and social scientists (Castaneda & Scanlan, 2014; Mueller & McCloskey, 1991; Warshawsky &
Havens, 2014). One important antecedent to job satisfaction is the work environment and some of the consequences include enhanced performance, engagement, personal wellbeing, reduced burnout, and improved retention for nurses and NMs (Castaneda & Scanlan, 2014; Ulrich et al. 2014; Warshawsky et al., 2016; Warshawsky & Havens, 2014; Weavers et al., 2019).

Generational Membership

*Generation* is defined as a group of people who are about the same age and were raised in the same time period or era (Dictionary.com, 2020). Generational cohorts often have similar life encounters that influence and shape their attitudes and expectations of the world (Pew Research Center, 2015). There are three generations in nursing management today: boomers, generation Xers, and millennials (Martin & Kallmeyer, 2018). Much of the literature asserts that the characteristics and attitudes of both Xers and millennials differ greatly from boomers (AMN Healthcare, 2018; Christensen et al., 2017; Deloitte Global, 2019; Dols et al., 2019; Faller & Gogek, 2019).

Boomers (born 1945-1964) have been described as individualistic, competitive, loyal, driven by financial security, and they live to work (Christensen et al., 2017; Christopher et al., 2017; Dimock, 2018; Hendricks & Cope, 2013). Generation Xers (born 1965-1980) value autonomy, they are results-oriented, skeptical, and work to live (Christensen et al., 2017; Christopher et al., 2017; Dimock, 2018). Millennials (born 1981-1996) are often characterized as technically savvy, group-oriented, values-driven, and needful of frequent, positive feedback. This generation expects to have a healthy work-life balance, they value experiences over possessions, tend to live their lives for the here and now, and they want to have identities that are not solely defined by their work (AMN Healthcare, 2018; Anselmo-Witzel et al., 2017; Chenkovich & Cates, 2016; Christensen et al., 2017; Dimock, 2018; Deloitte Global, 2019;
Fishman, 2016). Organizations who understand the differences between these three groups can improve their NMs’ satisfaction by designing management strategies from a generational perspective rather than a one-size-fits-all approach (Fishman, 2016).

Theoretical Model

The Conceptual Framework for Predicting Nurse Retention (CFPNR) was selected to examine the organizational and work characteristics that influence NM job satisfaction (Sawatzky & Enns, 2012). This framework asserts that there are two major factors that influence nurses’ intention to stay: influencing factors and intermediary factors, seen in Figure 1 (Sawatzky & Enns, 2012). These have been factors predict nurse and NM retention (Sawatzky, Enns, & Legare, 2015)

![Figure 2. The CFPNR (Sawatzky & Enns, 2012)](image-url)
Influencing factors includes organizational climate (staffing and resources, nursing management, nurse/MD collaboration, nursing competence, and scheduling) and person factors include age, marital status, finances, family, health, divorce, or death of a family member and are highly predictive of retention (Sawatzky & Enns, 2012; Sawatzky et al., 2015). Intermediary factors include job satisfaction, engagement, professional quality of life, and caring (Sawatzky & Enns, 2012). Such factors can help predict nurse and NM retention (Havens, Warshawsky, & Vasey, 2013; Kelly & Todd, 2017; Sawatzky et al., 2015; Warshawsky et al., 2016). The purpose of this study was to examine the relationship among organizational context, generational membership, nurse managers’ (NM) perception of the practice environment, and job satisfaction.

**Methodology**

This quantitative study was a secondary analysis of cross-sectional data from previously completed electronic surveys from NMs across the US (Warshawsky & Cramer, 2019).

*Human Subject Review*

The Institutional Review Board at the University of Central Florida reviewed this study and deemed it not human subjects research.

*Data Collection*

Data for this study were obtained from electronic surveys completed by NM participants (Warshawsky & Cramer, 2019). In the original study, researchers employed Press Ganey to recruit members who participated in the National Database of Nursing Quality Indicators® (NDNQI®) survey of their nursing staff. Three hundred hospitals who had taken part in the 2016 and 2017 NDNQI® annual nurse survey were invited, and 150 hospitals expressed interest in participating. A stratified sampling frame was used by Press Ganey to achieve a final sample of 80 hospitals meeting the inclusion criteria. A final count of 647 surveys were completed by
NMs, representing 964 NDNQI® units in 53 hospitals (Warshawsky & Cramer, 2019). For this secondary analysis, a power analysis (Cohen, 1988) was performed using a preferred power of 90%, a small effect size ($d=0.20$), and standard statistical significance ($p=0.05$). This produced a recommended sample size of at least 211.

Sample

The first study collected 647 completed surveys from nurse managers across the US (Warshawsky & Cramer, 2019). Accounting for participants who omitted their age ($n=15$), interim NMs ($n=33$), and missing answers ($n=11$), the total sample for this secondary analysis study was 588.

Inclusion and Exclusion Criteria

The original study required inclusion criteria for hospitals as well as participants. At the hospital level only those with at least seven NMs in their organization who had completed the Practice Environment Scale-Nurse Work Index (PES-NWI) version of the Nurse Survey in 2015-2017 were invited to participate. Of these, only NMs responsible for around-the-clock care and oversight of one or more acute patient care units were included. Managers in charge of outpatient settings or clinics were excluded (Warshawsky & Cramer, 2019). For this secondary analysis study, only data from NMs born between 1945-1996 were included, thereby capturing baby boomer, generation X, and millennial NMs (Pew Research Center, 2015). Interim NMs were excluded from the analysis because their practice environment might have been new to them, potentially skewing findings.
Instruments

Nurse Manager Practice Environment Scale

The Nurse Manager Practice Environment Scale (NMPES) was used to measure NM participants’ perceptions of their practice environments. This scale contains 44 items in eight domains: patient safety culture, culture of generativity, culture of meaning, NM-director relationship, NM-physician relationship, NM-unit staff relationship, adequate budgeted resources, and fair and balanced workload. Participants are asked to rate each item on 6-point scale (1= strongly disagree to 6 = strongly agree) to indicate their level of agreement that the item is present in their organization. Sample items include: “My nursing administrators encourage creativity and innovative solutions to problems.” The NMPES total scale scores were determined by creating item level mean scores then averaging item level mean scores to create item-level mean scores. The subscale mean scores were averaged to create a total scale mean score. Higher total scores indicated better perceptions of the participants’ practice environment (Warshawsky et al., 2016). For this secondary study, Cronbach alpha scores for each of the NMPES subscales were very good and ranged from .69 (NM-staff relationships) to .93 (culture of patient safety). Definitions of the domains can be found in Appendix A, Table 13A.

Nurse Manager Job Satisfaction Questionnaire

Job satisfaction was measured using two questions in the original survey. Question One asked “How satisfied are you with being an NM?” The response options included a Likert scale ranging from 1=very dissatisfied to 6=very satisfied. Question Two asked “How likely are you to recommend nurse management as a career choice for other nurses?” The response options were scored using a 6-point Likert scale of 1=very unlikely to 6=very likely (Warshawsky et al., 2016). Responses were averaged across the two items to create a mean total job satisfaction
score, wherein the higher the total score, the higher total NM job satisfaction (Warshawsky et al., 2016). For this study, Cronbach’s alpha score for total job satisfaction was also very good ($\alpha$=.84) for this sample.

**Generational Membership Measurement**

Participants’ generational membership was determined from their age found in the demographic data. The three generations represented in this sample were defined from criteria set by the Pew Research Center (2020). These nominal level variables are defined as follows: boomers (born 1945-1964), generation X (born 1965-1980), and millennials (born 1981-1996).

**Control Variables**

Three hospital-level characteristics were used to control for hospital level effects. Hospital American Nurses Credentialing Center (ANCC) certification status this included being designated Magnet hospital, Magnet seeking, or non-Magnet hospital. The ANCC status also included Pathway to Excellence certification or non-Pathway certified. Hospital size was measured by the number of patient care beds reported ($\leq$100, 100-299, 300-399, 400-499, and $\geq$500). Teaching status included academic/university medical center, teaching hospitals, and non-teaching hospital.

**Analysis**

All study data were analyzed using descriptive statistics, including means, standard deviations, and frequency distributions with histograms and bar graphs using IBM’s Statistical Package for Social Sciences (SPSS) version 26.0. Pearson’s correlation was used to determine bivariate relationships. General linear model (GLM) regression analysis was sued to determine the effects of NMPES by generational membership on job satisfaction where assumptions were met (Knapp, 2017). The individual hospital-level characteristics were treated as control variables
and dichotomized into binary options: ANCC certification status (certified or not certified), Hospital size (<300 beds or ≥300) and teaching status (teaching hospital/academic medical center or non-teaching hospital).

Results

Demographics

Most of the NMs from this study were female (86.9%), white/non-Hispanic (85.4%), with an average age of 45.29 years (SD=10.1). Nurse managers from Generation X accounted for 44% (n=249) of the total sample (Table 4). A majority of participants held a bachelor’s degree (61.7%) as their highest academic degree with 30.4% reporting a master’s degree. On average these NMs had 6.74 (SD=7.01) years as an NM with 4.33 years (SD=5.47) in their current position (Table 4).
Table 4. Nurse Manager Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>511</td>
<td>86.9</td>
</tr>
<tr>
<td>Male</td>
<td>65</td>
<td>11.1</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>0.9</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>15</td>
<td>2.6</td>
</tr>
<tr>
<td>Black/African American</td>
<td>18</td>
<td>3.1</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>20</td>
<td>3.4</td>
</tr>
<tr>
<td>White/Non-Hispanic</td>
<td>502</td>
<td>85.4</td>
</tr>
<tr>
<td>Native American</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>1.5</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>13</td>
<td>2.2</td>
</tr>
<tr>
<td>Generational Membership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Millennials (ages 24-38)</td>
<td>173</td>
<td>29.4</td>
</tr>
<tr>
<td>Generation Xers (ages 39-53)</td>
<td>259</td>
<td>44</td>
</tr>
<tr>
<td>Baby Boomers (ages 54-74)</td>
<td>141</td>
<td>24</td>
</tr>
<tr>
<td>Highest Level of Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>6</td>
<td>1.0</td>
</tr>
<tr>
<td>ADN</td>
<td>28</td>
<td>4.8</td>
</tr>
<tr>
<td>BSN</td>
<td>363</td>
<td>61.7</td>
</tr>
<tr>
<td>MSN</td>
<td>179</td>
<td>30.4</td>
</tr>
<tr>
<td>DNP</td>
<td>10</td>
<td>1.7</td>
</tr>
<tr>
<td>Years in practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years in practice as a nurse</td>
<td>19.86</td>
<td>10.58</td>
</tr>
<tr>
<td>Years as a NM</td>
<td>6.74</td>
<td>7.01</td>
</tr>
<tr>
<td>Years in current position (CP)</td>
<td>4.33</td>
<td>5.47</td>
</tr>
</tbody>
</table>

*Note. Based on certain missing data NMs n does not always equal 588.

Among the 53 hospitals in this sample 47.3% (n=24) had achieved ANCC certification.

Teaching hospitals and academic medical centers (AMC) accounted for 62.1% of the total, and most hospitals (n=33, 59.4%) had fewer than 300 beds. (Table 5).
Table 5. Descriptive Statistics of Participating Hospital Characteristics (n=53)

<table>
<thead>
<tr>
<th>Specific Hospital Characteristics</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANCC Certification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>24</td>
<td>47.4</td>
</tr>
<tr>
<td>No</td>
<td>29</td>
<td>52.6</td>
</tr>
<tr>
<td>Teaching Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching/Academic</td>
<td>33</td>
<td>62.2</td>
</tr>
<tr>
<td>Non-teaching</td>
<td>20</td>
<td>37.8</td>
</tr>
<tr>
<td>Hospital Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;300 beds</td>
<td>36</td>
<td>59.4</td>
</tr>
<tr>
<td>≥300 beds</td>
<td>17</td>
<td>40.6</td>
</tr>
</tbody>
</table>

NMPES and Job Satisfaction Scores

The mean NMPES score was 4.789 (SD=0.63), indicating these NM were satisfied or very satisfied with their practice environments. The mean job satisfaction scale score for the total sample was 4.78 (SD=0.98). These findings indicating that these NM were either satisfied or very satisfied with their jobs (Table 6).

By generational cohort, the mean NMPES scores and job satisfaction scores were very similar (Table 6). The NMPES mean scores were millennials (M=4.81, SD=.59), generation Xers (M=4.74, SD=.61), and boomers (M=4.83, SD=.67). Mean job satisfaction for millennials was 4.73 (SD=.87), generation Xers 4.78 (SD=.98), and boomers 4.88 (SD = 1.07).
Table 6. Means of NMPES and Job Satisfaction for Total Sample and by Age Group

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NMPES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GenY</td>
<td>173</td>
<td>2.70</td>
<td>5.98</td>
<td>4.805</td>
<td>0.59</td>
</tr>
<tr>
<td>GenX</td>
<td>259</td>
<td>2.76</td>
<td>6.00</td>
<td>4.744</td>
<td>0.61</td>
</tr>
<tr>
<td>Boomer</td>
<td>141</td>
<td>1.66</td>
<td>6.00</td>
<td>4.834</td>
<td>0.68</td>
</tr>
<tr>
<td><strong>Total Sample</strong></td>
<td>588</td>
<td>1.66</td>
<td>6.00</td>
<td>4.775</td>
<td>0.63</td>
</tr>
<tr>
<td><strong>Job satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Millennials</td>
<td>173</td>
<td>2.00</td>
<td>6.00</td>
<td>4.725</td>
<td>0.87</td>
</tr>
<tr>
<td>GenX</td>
<td>259</td>
<td>1.50</td>
<td>6.00</td>
<td>4.776</td>
<td>0.98</td>
</tr>
<tr>
<td>Boomer</td>
<td>141</td>
<td>1.00</td>
<td>6.00</td>
<td>4.883</td>
<td>1.07</td>
</tr>
<tr>
<td><strong>Total Sample</strong></td>
<td>588</td>
<td>1.00</td>
<td>6.00</td>
<td>4.781</td>
<td>0.98</td>
</tr>
</tbody>
</table>

*Note. NMPES=the Nurse Manager Practice Environment Scale.
*Based on missing data n does not always equal 588.

Correlations

Table 7 presents NMPES and job satisfaction scores which were highly correlated at $r = .643$ ($p = .01$) for the total sample. In general, as the NMPES scores increased so did the total satisfaction scores. Job satisfaction scores by generational membership were also highly correlated with NMPES scores (ranging from $r = .614$ to $r = .644$) seen in Table 7.

Table 7. Pearson’s Correlation between total job satisfaction and NMPES by generation

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Pearson’s Correlation</th>
<th>NMPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Millennials</td>
<td>Sig. (2-tailed)</td>
<td>.614**</td>
</tr>
<tr>
<td>N</td>
<td>173</td>
<td></td>
</tr>
<tr>
<td>GenX</td>
<td>Sig. (2-tailed)</td>
<td>.636**</td>
</tr>
<tr>
<td>N</td>
<td>259</td>
<td></td>
</tr>
<tr>
<td>Boomer</td>
<td>Sig. (2-tailed)</td>
<td>.644</td>
</tr>
<tr>
<td>N</td>
<td>141</td>
<td></td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).

Generational Analysis

General linear model (GLM) multiple regression analysis was employed to determine the effects of NMPES by generational membership on job satisfaction, controlling for hospital level characteristics. The multiple regression was conducted in 3 blocks. In block one, hospital
characteristics were entered into the model as control variables on job satisfaction. In block two, NMPES and generational membership were added to the model. In block three, the full model was examined to include the interaction of generational membership with NMPES on job satisfaction to evaluate a potential moderated effect.

Model one which included the hospital control variables was not significant ($R^2 = .012$, $p = .08$) and only accounted for 1% of the variance in total job satisfaction. Model two which included the addition of the NMPES and generational membership to Model one, significantly improved the model fit ($R^2 = .403$, $p < .001$). Model two explains 40% of the variance in total job satisfaction. Model three added the interaction between NMPES and generational membership; however, the interaction was not significant ($R^2 = .404$, $p = .58$). Therefore, model two was retained. The only significant predictor of job satisfaction was the NMPES ($\beta = .633; p < .001$). See Tables 8 and 9.

Table 8. Model of Summary of Job Satisfaction

<table>
<thead>
<tr>
<th>Model</th>
<th>$R$</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>SD error of estimate</th>
<th>Change Statistic</th>
<th>$F$ Change</th>
<th>Df 1</th>
<th>Df 2</th>
<th>Sig. $F$ Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.109a</td>
<td>0.012</td>
<td>0.007</td>
<td>0.9684</td>
<td>0.012</td>
<td>2.268</td>
<td>3</td>
<td>569</td>
<td>0.080</td>
</tr>
<tr>
<td>2</td>
<td>.635b</td>
<td>0.403</td>
<td>0.397</td>
<td>0.7548</td>
<td>0.391</td>
<td>123.592</td>
<td>3</td>
<td>566</td>
<td>0.000</td>
</tr>
<tr>
<td>3</td>
<td>.636c</td>
<td>0.404</td>
<td>0.396</td>
<td>0.7554</td>
<td>0.001</td>
<td>0.539</td>
<td>2</td>
<td>564</td>
<td>0.584</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), ANCCRec, New Teach, New Bed Size
b. Predictors: (Constant), ANCCRec, New Teach, New Bed Size, Boomers, NMPES, GenX
c. Predictors: (Constant), ANCCRec, New Teach, New Bed Size, Boomers, NMPES, GenX, Boomers By NMPES, GenX by NMPES

Dependent Variable: job satisfaction
Table 9. GLM Coefficients on Job Satisfaction

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Beta</th>
<th>Standardized Coefficients</th>
<th>95.0% C.I. for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta )</td>
<td>( t )</td>
<td>Sig.</td>
</tr>
<tr>
<td>(Constant)</td>
<td>4.890</td>
<td>54.165</td>
<td>0.000</td>
</tr>
<tr>
<td>NewTeach</td>
<td>-0.0281</td>
<td>-2.497</td>
<td>0.013</td>
</tr>
<tr>
<td>New Bed Size</td>
<td>0.144</td>
<td>1.455</td>
<td>0.146</td>
</tr>
<tr>
<td>ANCC Rec</td>
<td>0.083</td>
<td>1.004</td>
<td>0.316</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-0.054</td>
<td>-0.202</td>
<td>0.840</td>
</tr>
<tr>
<td>NewTeach</td>
<td>-0.017</td>
<td>-0.195</td>
<td>0.846</td>
</tr>
<tr>
<td>New Bed Size</td>
<td>0.078</td>
<td>1.006</td>
<td>0.315</td>
</tr>
<tr>
<td>ANCC Rec</td>
<td>0.022</td>
<td>0.335</td>
<td>0.738</td>
</tr>
<tr>
<td>Generation Xers</td>
<td>0.110</td>
<td>1.471</td>
<td>0.142</td>
</tr>
<tr>
<td>Boomers</td>
<td>0.130</td>
<td>1.515</td>
<td>0.130</td>
</tr>
<tr>
<td>NMPES</td>
<td>0.988</td>
<td>19.173</td>
<td>0.455</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.362</td>
<td>0.747</td>
<td>0.455</td>
</tr>
<tr>
<td>NewTeach</td>
<td>-0.021</td>
<td>-0.233</td>
<td>0.816</td>
</tr>
<tr>
<td>New Bed Size</td>
<td>0.082</td>
<td>1.062</td>
<td>0.289</td>
</tr>
<tr>
<td>ANCC Rec</td>
<td>0.020</td>
<td>0.311</td>
<td>0.756</td>
</tr>
<tr>
<td>Gen X</td>
<td>-0.473</td>
<td>-0.789</td>
<td>0.430</td>
</tr>
<tr>
<td>Boomers</td>
<td>-0.417</td>
<td>-0.632</td>
<td>0.528</td>
</tr>
<tr>
<td>NMPES</td>
<td>0.901</td>
<td>9.197</td>
<td>0.000</td>
</tr>
<tr>
<td>Gen Xer by NMPES</td>
<td>0.122</td>
<td>0.979</td>
<td>0.328</td>
</tr>
<tr>
<td>Boomers by NMPES</td>
<td>0.114</td>
<td>0.836</td>
<td>0.403</td>
</tr>
</tbody>
</table>

Discussion

Nurse Manager Characteristics

Most of the participants in this study were generation Xers (44%), followed by millennials (29.4%), which highlights the fact that boomer NMs are no longer in the majority. Graduate-level education was underrepresented in this sample as only 30.4% (\( n=179 \)) of the NMs held a master’s degree or higher. These findings are consistent with other national studies wherein graduate school preparation for NMs continues to be low despite appeals from experts that a master’s degree or higher be required for management positions (Martine & Kallmeyer, 2018; Sherman & Saifman, 2018; Warshawsky, 2020; Warshawsky & Cramer, 2019; Fennimore & Warshawsky, 2019).
**Practice Environment and Job Satisfaction**

A healthy practice environment was positively correlated with increased levels of job satisfaction among NMs in this study. These findings add to the growing body of work demonstrating the relationship between a healthy work environment and NMs’ job satisfaction (Simpson et al., 2017; Warshawsky et al., 2013a; Warshawsky et al., 2013c; Warshawsky et al., 2016). Building a strong healthy work environment is critical to nurse manager satisfaction and retention.

Findings from this study indicate that job satisfaction may have implications for recruitment. For this study NMs’ job satisfaction scores were averaged together with their likeness to recommend management scores to create a total job satisfaction score. Given the high mean job satisfaction scores, the majority of this sample were both satisfied with their jobs and likely to recommend nursing leadership as a career option. By extension, it could be postulated that those NMs who are dissatisfied with their jobs may also be unlikely to recommend management to nurses, thus impacting recruitment. Organizations must, therefore, design practice environments that support and foster their NMs’ success and satisfaction to increase their chances of retaining their NMs and improve their recruitment outcomes (Spence-Laschinger, Wong, Grau, Read, & Pineau-Stam, 2013; Warshawsky et al., 2013; Warshawsky et al., 2016; Wong et al., 2015).

**Generational Membership**

The primary purpose of this study was to explore the effect of generational membership on NMs’ perception of their practice environments and their job satisfaction. However, no statistically significant relationships were found between the generations and mean NMPES scores or between generations and mean total job satisfaction scores. These findings challenge
the prevailing literature asserting that work environment preferences are different among
generations (AMN Healthcare, 2018; Christensen et al., 2017; Deloitte Global, 2019; Dols et al.,
2019; Faller & Gogek, 2019; Sherman & Saifman, 2018). Driven largely by concerns over high
turnover rates among millennials in nearly all professions, researchers have focused heavily on
generational differences in the workforce (Chenkovich & Cate, 2016). Although generational
differences exist, they may not be as impactful on satisfaction and retention for NMs as
previously hypothesized.

**Implications for Practice**

Nearly half of the NMs from this study had been in their current job for less than three
years. Such findings are reflective of an alarming deficit of experienced NMs and underscores
the need for organizations to invest in retaining their current managers (Huddleston & Gray,
2016; Warshawsky & Cramer, 2019). Similarly, less than a third of the participants held a
master’s degree or higher, despite petitions from experts to require advanced degrees for such
positions (Fennimore & Warshawsky 20219). The complex skills needed in the job of NM are
not typically offered at the undergraduate level. Lack of experience combined with insufficient
education among NMs results in reduced competence in their roles and negatively impacts
organizational, staff, and patient outcomes (Phillips, Evans, Tooley, & Shirey, 2018;
Warshawsky, Caramanica, Cramer, 2020). To recruit high-quality applicants, healthcare
organizations have a duty to offer scholarships, tuition reimbursement programs, and
compensation for certifications (Warshawsky, Caramanica, Cramer, 2020). To improve the
onboarding of novice NMs, institutions should provide adequate orientation, role transition
support, and invest in the professional development of their novice and experienced NMs
(Warshawsky, Caramanica, Cramer, 2020).
In this study, participants’ NMPES scores were strongly correlated with their job satisfaction scores. Such findings further highlight the effectiveness of the NMPES to predict NM satisfaction, demonstrates the significance of a healthy work environment to improve NM satisfaction and recruitment, and adds to the growing body of evidence supporting such claims (Hewko et al., 2015; Huddleston & Gray, 2016; Moore, Sublett, Leahy, 2016; Warshawsky et al., 2016). As such the NMPES provides a blueprint for improving practice norms for NMs. Organizations should, therefore, cultivate an environment that supports its three main features: relationships (director, physician, and staff relationships), culture (patient safety, meaning, and generativity), and other (allocation of resources and workloads) (Warshawsky, 2020). The return on investment for such actions will be substantial. Studies show that nursing managers working for organizations who make reasonable efforts to foster their wellbeing, success, professional development, and interprofessional relationships are often more satisfied, engaged, productive, feel empowered, enjoy better health, employ constructive leadership practices, and plan to stay longer in their position (Hewko et al., 2015; Kath et al., 2012; Moore et al., 2016; Oliver, Gallo, Griffin-Quinn, White, & Fitzpatrick, 2014; Shirey, 2009; Warshawsky et al., 2016; Warshawsky, Havens, & Knafl, 2012; Warshawsky & Havens, 2014; Warshawsky et al., 2013a; Weavers et al., 2019).

Though this study found no correlation between generational membership and job satisfaction for NMs, understanding the differences among the cohorts remains important for nursing leaders. Researchers Zemke, Raines, & Filipczak (2013) created a set of guiding principles asserting that generational differences exist and can be used positively within the nursing profession and leadership. The American Organization of Nurse Leadership (AONL)
adopted these five principles (acknowledge generational differences, create choices to promote harmony and work-life-balance, operate from a sophisticated management style, respect competence, and nourish retention) as requisite for retaining NMs and recruiting younger nurses into leadership (AONL, 2014; Martin & Warshawsky, 2017, p.419; Zemke et al., 2013, p. 222-227).

Study Limitations

A primary limitation to a secondary analysis is the strength of the previous researchers sampling and data collection methods process. The original study researcher, however, gave detailed descriptions of their sample selection, data collection methods, and used survey instruments with strong psychometric properties, adding to the overall strength of their findings and findings from this study. Additionally, the cross-sectional design of this study should be seen as a limitation due to potential sample selection biases (Creswell & Guetterman, 2019; Nardi, 2018). For example, only Press Ganey client hospitals using the NDNQI survey were included in the data collection of the original study. These types of institutions are often pursuing ANCC accreditation and may reflect a more positive practice setting. Including more hospitals not certified or pursuing such certifications might provide better representation of US hospitals.

Future Research

Generational membership did not influence NMs’ perception of their practice environment or satisfaction for this sample, but the growing shortages in the nation’s supply of experienced NMs make it imperative for nursing researchers to explore this phenomenon. In 2020, a committee of experts from the National Academy of National Academies of Sciences (NAS), Engineering (NAE), and Medicine (NAM) examined hundreds of research studies focused on generations in the workforce. The committee found that much of the literature on this
topic were not rigorous or of high quality. They reported an overabundance of cross-sectional studies, overuse of convenience sampling, surveys studies that lacked reliability and validity measurements, and a limited number of high-caliber qualitative studies (NASAM, 2020). Future research endeavors must, therefore, have more robust study designs, increased use of qualitative studies with high-quality designs and analysis techniques, and psychometrically stronger measurement tools (NASEM, 2020).

Among the limited number of studies focused on generational differences in nursing management, few are experimental in method. There is also a lack of well tested survey instruments focused on this topic. Nursing scientists should consider performing more interventional studies and combine these with theory-guided research to develop and test new survey instruments focused on constructs of the phenomenon.

Conclusions

The NM role has expanded into a very complicated and multifaceted job that requires complex skills and knowhow. The NM wields significant influence over patient, staff, fiscal, and organizational outcomes (Hewko et. al, 2016; Ulrich et al., 2014). Thus the growing shortage of well-prepared and seasoned NMs in the field necessitates an urgent response from leaders to address the issues of NM job satisfaction and retention in a multi-cultural and multi-generational workforce.

This study may be the first to examine the effects that generational differences have on NMs’ view of their practice environments and job satisfaction. Analysis, however, produced no significant differences between the groups. The study did find strong correlations between NMs’ perception of their practice environment and satisfaction for all three generations. Cultivating healthy work environments, thus remains a key strategy for organizations to improve NM
satisfaction and retention for all cohorts and help entice frontline staff-nurses into leadership positions (Hewko et al., 2015; Warshawsky et al., 2016).

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https://www.dictionary.com/browse/generation

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CHAPTER 4: CRITICAL APPRAISAL OF ELECTRONIC SURVEYS: AN INTEGRATED LITERATURE REVIEW

Abstract

Electronic surveys have become an essential data collection method in survey research. Advances in technology have improved this data collection method. A search of the EBSCOhost Research Databases using search terms online surveys, survey research, internet surveys, and electronic surveys produced twenty articles reporting on the advantages and disadvantages of electronic survey methods. Several themes were identified. Advantages of electronic surveys include speed, cost, convenience, flexibility, ease of analyses, global reach, reduced data entry errors, and question diversity. Disadvantages included response outcomes (nonresponse, item-nonresponse/poor completion rates, and careless responding errors) and digital literacy requirements. Studies from this review also offered valuable solutions for mitigating these problems. The advantages of electronic surveys seem to far outweigh their disadvantages, but researchers must understand the problems associated with electronic surveys and avoid them.

Keywords online surveys, survey research, internet surveys, and electronic surveys.
Critical Appraisal of Electronic Surveys: An Integrated Literature Review

Surveys have long been an essential part of data collection for researchers and business organizations from every conceivable venue. Survey research is designed to acquire relevant information about a phenomenon within a specific population of interest using pen-and-paper surveys, personal or phone interviews, and electronic surveys (Ball, 2019; Maymone, Venkatesh, Secemsky, Reddy, & Vashi, 2018). Electronic survey use in research has mushroomed in the past decade because they cost less than traditional postal-mailed surveys or phone interviews, they can be rapidly deployed with fewer data errors (Ball, 2019; Cope, 2014). They do, however, have a few disadvantages (Ball, 2019; Cope, 2014; Maymone et al., 2018). The purpose of this review was to examine the literature to understand the advantages and disadvantages associated with electronic surveys in research.

Background and Pertinent Terms

Today, substantial advancements in technology have made personal computers (PCs), laptops and smart devices are commonplace for much of the industrialized world. A robust and evolving internet augmented by such advancements in technology allow people access to limitless information (Dillman, 2007; Pan, Woodside, & Meng, 2013). Such advances have spawned the development of more efficient data collection methods such as electronic surveys often replacing the hand-written ones (Greenlaw & Brown-Welty, 2009; Manfreda, Bosnjak, Berzelak, Haas, Vehovar, & Berzelak, 2008; Shih & Rao, 2012).

Email-based surveys were first introduced in the 1980’s as data collection tools delivered in electronic-mail applications (Solomon, 2007; Sproull & Kiesler, 1987) followed by web-based surveys in the 1990’s (Kehoe & Pitkow, 1996). These employed hypertext markup language (HTML), the formatting language for the web, and hypertext transfer protocol (HTTP), which
allows information to be retrieved from linked resources across the internet (World Wide Web Foundation, 2020). These survey tools physically reside on a network server via a company’s intranet or the internet and are made accessible through a web browser (Jansen, Corley, & Jansen, 2007). Web browsers such as Internet Explorer, Google, Chrome, and Apple Safari are most often used to access websites (Web Browser, 2021).

As the internet evolved in the late 1990’s and early 2000’s, it became more interactive and intuitive, making web-based surveys popular among researchers (Cook, Heath, Thompson, 2000; Dillman, Tortora, & Bowker, 1999). Creating web-based applications in the early days, however, was so difficult that most social scientists had to rely on information technology (IT) professionals instead of research experts to design their surveys (Shannon, Johnson, Searcy, & Lott, 2002). With the inception of do-it-yourself platform online survey platforms such as SurveyPlanet, Qualtrics, SurveyMonkey, and SurveyGizmo, researchers no longer required expensive IT personnel (Maymone et al., 2018; Saleh & Bista, 2017).

Methods

An integrated review design was performed using the following EBSCOhost Research Databases: CINAHL Plus with Full Text; APA PsycInfo; Health Source: Nursing/Academic Edition; MEDLINE. Only articles relevant to the subject matter, in English, from scholarly peer-reviewed journals, and from 2010 to 2020 were included. Search terms were online surveys, survey research, internet surveys, and electronic surveys. Expert opinions were only included if the authors were respected authorities on the topic. Literature reviews, dissertations, and editorials were excluded. Using this search criteria produced an initial 7,710 articles. Excluding duplicate publications left 6,290 remaining. A review of titles for inclusion criteria was performed, leaving 111 articles. Assessing all abstracts, 28 remained. After several in-depth-
reviews of the publications only 20 met inclusion criteria: 15 quantitative studies and five expert opinion articles.

Figure 3. PRISMA diagram electronic surveys literature review

Data Analysis

Articles were closely examined and critiqued with professional standards, the Johns Hopkins Nursing guidelines for level-of-evidence (LOE), and the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) method (Shamseer et al., 2015; Dang & Dearholt, Sigma Theta Tau, 2012; Galvan & Galvan, 2017). Figure 1 shows the PRISMA diagram. To summarize and analyze these 20 publications, the Matrix Method (Table 1) was used for a summary of the evidence (Garrard, 2017).
<table>
<thead>
<tr>
<th><strong>Design/Author/Year/Country</strong></th>
<th><strong>Purpose/Aims</strong></th>
<th><strong>Sample size</strong></th>
<th><strong>Method</strong></th>
<th><strong>Outcomes</strong></th>
<th><strong>LOE and Quality Assessment</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative</td>
<td>Compare survey completion times (CTs) of two devices: personal computers (PCs) and smartphones</td>
<td>Participants ($N=895$) were from a national database</td>
<td>Comparative study of PCs and smart phones in two different groups</td>
<td>Respondent response times were 1.4 times longer on smartphones than on a PC, but respondent multitasking was associated with slower CTs.</td>
<td>LOE II High quality</td>
</tr>
<tr>
<td>Quantitative, Quasi-experimental</td>
<td>Determine if text message reminders increase completion rates of web-based surveys related to (a) message content and (b) initial level of survey engagement</td>
<td>State of Florida case workers at Department of Children and Families ($N=345$)</td>
<td>Quasi-experimental: surveys were emailed to participants and text reminders were deployed at Day 3</td>
<td>Those in the study who completed 50% or more of the survey before the reminders were statistically significantly more likely to finish surveys ($OR = 3.16, 95% CI = 1.13 – 8.83, p = .029$) compared to those who completed &lt;50%.</td>
<td>LOE II High quality</td>
</tr>
<tr>
<td>Quantitative, Quasi-experimental</td>
<td>Examine feasibility voice input (VI) options among iPhone and Android devices</td>
<td>Participants using Netquest with smart devices and meeting criteria; 1,205 completed the survey.</td>
<td>Quasi-experimental. Control group=iPhone users with the dictation method; “treatment group” was android participants who used VI option.</td>
<td>CT was significantly reduced for VI users, but they had higher nonresponse rates. For open-ended questions, voice recorded surveys resulted in longer and more detailed answers.</td>
<td>LOE II High quality</td>
</tr>
</tbody>
</table>
| Expert Opinion                | Present advantages and disadvantages of electronic/online surveys | No sample | Expert opinion of a well-respected anthropologist and researcher | **Advantages:** Rapid deployment, cost, flexibility, less data entry errors, ease of analysis
**Disadvantages:** (reliability/validity/sample errors/proper statistical analysis), lack of internet or proficiency of technology may introduce sampling errors. | LOE V High quality |
<table>
<thead>
<tr>
<th><strong>Design/Author/Year/Country</strong></th>
<th><strong>Purpose/Aims</strong></th>
<th><strong>Sample size</strong></th>
<th><strong>Method</strong></th>
<th><strong>Outcomes</strong></th>
<th><strong>LOE and Quality Assessment</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative, Quasi-experimental Lee, Sunwoong, Couper, &amp; Woo (2019) South Korea</td>
<td>Comparisons of a computer-based web survey, a smartphone web-survey, and a computer-assisted telephone interviewing (CATI) survey.</td>
<td>South Korean university students (n=2,500), smartphone users</td>
<td>Web-based surveys, smartphone surveys, and CATI interviews were performed</td>
<td>CATI surveys had higher response rates, lower nonresponse items, less margin-of-error, and higher representation of sample population compared to web modes but much higher costs.</td>
<td>LOE II High quality</td>
</tr>
<tr>
<td>Quantitative secondary analysis of survey data Couper, M. &amp; Peterson, G. (2018). US</td>
<td>Secondary analysis of web survey data from a three-year survey</td>
<td>Students, staff, and faculty of a university (N=4,723)</td>
<td>Secondary analysis of web survey, correlation studies</td>
<td>Smartphone users had slower coverage due to cellular/WiFi; they had difficulty reading questions on phones (small print), and distractions were an issue.</td>
<td>LOE III Good quality</td>
</tr>
<tr>
<td>Quantitative Dodge, N. &amp; Chapman, R. (2018) New Zealand</td>
<td>Compare recruitment of participants and survey competitions through emails (via internet) and door-to-door with use of tablets or internet to complete survey.</td>
<td>total of 251 completed surveys via email and 201 completed via door-to-door.</td>
<td>Comparative survey study</td>
<td>Email-recruited group had response rate 8.5 percentage points lower than door-to-door (155) recruited group: ( \chi^2 = 10.54, \text{df} = 1, p )</td>
<td>LOE II High quality</td>
</tr>
<tr>
<td>Expert opinion Evans &amp; Mathur (2018) US</td>
<td>Present details of evolution of and pros and cons of online surveys over past 15 years.</td>
<td>No sample</td>
<td>Review/Expert opinion paper</td>
<td><em>Strengths:</em> Global reach, flexibility, speed/timeliness, convenient, less data entry errors, easy follow-up, controlled sampling, control of answer order, completion of answers to exit the survey. <em>Weaknesses:</em> Perceived as junk-mail, computer illiteracy, digital access, sampling, and implementation concerns</td>
<td>LOE V High quality</td>
</tr>
<tr>
<td>Design/Author/Year/Country</td>
<td>Purpose/Aims</td>
<td>Sample size</td>
<td>Method</td>
<td>Outcomes</td>
<td>LOE and Quality Assessment</td>
</tr>
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</tr>
<tr>
<td>Quantitative, Liu, M. &amp; Wronski, L. (2018) California, US</td>
<td>Examine predictors of completion rates (CR) in web-based survey studies</td>
<td>25,080 completed SurveyMonkey surveys</td>
<td>Correlation study/ regression analysis</td>
<td>CRs declined with increased number of pages, open-ended questions, difficult questions, long first questions. Higher CRs were associated with lack of a progress bar (design), shorter survey length, fewer words used, multiple choice options.</td>
<td>LOE II High quality</td>
</tr>
<tr>
<td>Quantitative, Quasi-experimental Schlosser &amp; Mays (2018) Germany</td>
<td>Examine data quality and response methods of online surveys: mobile vs. computer.</td>
<td>Randomly-selected German university students; 526 PC users and 294 mobile device users</td>
<td>Survey of two different user groups</td>
<td>After accounting for internet speed, there were no statistically significant differences in speed, completion rates, or quality of answers for open-ended question replies.</td>
<td>LOE II High quality</td>
</tr>
<tr>
<td>Quantitative, survey study (cross-sectional) Saleh, A. &amp; Bista, K. (2017) US</td>
<td>Analyze factors that may influence graduate students’ survey response rates via email.</td>
<td>Graduate students (N=454) from American Educational Research Association list of subscribers</td>
<td>Cross-sectional survey method to analyze factors influencing participants’ email survey response rate.</td>
<td>Participants were more likely to complete it surveys if they were interested in the topic, it came from colleagues or department heads’ or organizations they cared about, they were short (no more than 15 mins to complete), and privacy (answers and identity) could be assured.</td>
<td>LOE III Good quality</td>
</tr>
<tr>
<td>Design/Author/Year/ Country</td>
<td>Purpose/Aims</td>
<td>Sample size</td>
<td>Method</td>
<td>Outcomes</td>
<td>LOE and Quality Assessment</td>
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<tr>
<td>Quantitative, quasi-experimental Ward &amp; Meade (2017) South-Eastern US</td>
<td>Develop and test prevention strategies to increase motivation to prevent careless responding (CR) in online surveys.</td>
<td>Students enrolled in psychology courses ($N=614$) at a large university</td>
<td>Survey study to examine careless responding</td>
<td>Participant’s interest somewhat improved when asked to be careful and accurate in responses and write out why this is important.</td>
<td>LOE II High quality</td>
</tr>
<tr>
<td>Quantitative, survey study Aerny-Perreten, N. Dominguez-Berjón, F., Esteban-Vasallo, M., &amp; Garcia-Riolobos, C. (2015). Spain</td>
<td>Examine changes in response rate of participants after email reminders and factors associated with late or non-responses.</td>
<td>Stratified random sampling of nurses and MDs ($N=3,586$) in Madrid</td>
<td>Surveys were sent out with three consecutive reminders.</td>
<td>Response rate increased with reminders. Women had a higher response rate than men ages 40-50, and professionals with higher workloads required the most reminders.</td>
<td>LOE II High quality</td>
</tr>
<tr>
<td>Quantitative, Randomized study experimental Buskirk &amp; Andrus (2014) US</td>
<td>Conduct randomized experiment comparing survey taken on iPhone browser and online from computer web browser.</td>
<td>Got Healthy Apps Study (GHAS), with 209 computer surveys and 221 iPhone surveys completed.</td>
<td>Randomized, experimental (two different groups)</td>
<td>Completion rates were 2.6 times better among computer survey mode than iPhone users. Completion times and missing item rates were similar among both.</td>
<td>LOE I High quality</td>
</tr>
<tr>
<td>Quantitative, Quasi-experimental LaRose &amp; Tsai (2014) Midwestern US</td>
<td>Evaluate effectiveness of incentives and modes of contact for completion of surveys</td>
<td>A total of 1522 first-year college students</td>
<td>Intervention method to measure effect of incentives on response.</td>
<td>Post mailed with small cash incentives produced more completed surveys and less non-response error.</td>
<td>LOE II High quality</td>
</tr>
<tr>
<td>Methodology paper McPeake, Bateson, &amp; O’Neill (2014) UK</td>
<td>Discuss advantages/disadvantages of electronic surveys in healthcare research and techniques to improve response rates.</td>
<td>No sample</td>
<td>Expert opinion</td>
<td>Electronic surveys are fast, efficient, and cheap. Adding reminder emails, personalize emails, and let them know how long the survey will take to complete in the title of the email can help to improve response rates.</td>
<td>LOE IV Good quality</td>
</tr>
<tr>
<td>Design/Author/Year/Country</td>
<td>Purpose/Aims</td>
<td>Sample size</td>
<td>Method</td>
<td>Outcomes</td>
<td>LOE and Quality Assessment</td>
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<tr>
<td>Quantitative, Quasi-experimental Pan, Woodside, &amp; Meng (2013) US</td>
<td>Investigate how contextual cues might impact response rates and conversion rates for online surveys.</td>
<td>Email recipients ($N=71$) from eight different cities’ Convention and Visitors Bureaus</td>
<td>Online surveys</td>
<td>Recommendations: 1. Researchers identify themselves from outset (and be trustworthy and possibly expert in the field and/or the topic). 2. Contact via email first with follow-up emails and end with postal requests for participation. 3. Use researchers with culturally similar names to population being researched.</td>
<td>LOE II Good quality</td>
</tr>
<tr>
<td>Quantitative, survey study Yan, T., Conrad, F., Tourangeau, R., &amp; Couper, M. (2010) Chicago, IL</td>
<td>Explore three factors in a web survey and breakoff rates: • task duration promised in the survey invitation • length of questionnaire • whether or not a progress indicator is displayed.</td>
<td>Respondents were from a web survey company, Market Strategies Inc.; 2,931 respondents started the survey, and 2,385 completed.</td>
<td>Hypothesis-testing</td>
<td>• Effect of promise duration was significant ($X^2 (1) = 56.4, p &lt; .0001$); promise of shorter task equated to more participants. • 16.8% broke off with long surveys compared to 10.6% for shorter ones (a significant effect measured by two-way logit analysis ($X^2 (1) = 56.4, p &lt; .0001$). • Progress indicators had no significant effect.</td>
<td>LOE II High quality</td>
</tr>
</tbody>
</table>
Results

The Johns Hopkins Nursing Evidence-Based Practice guidelines for publication quality and LOE were used to evaluate each of the 20 articles included in this review (Dang et al., 2012). These ranged from LOE I to V and were either good or high quality (seen in table 12). Several themes emerged from this review and have been categorized into advantages and disadvantages of electronic. Evidence-based recommendations for mitigating the problems with electronic surveys are outlined in Table 13.

Advantages of Electronic Surveys

In this review seven themes were found regarding the advantages of using electronic surveys in research: speed, cost, convenience and flexibility, ease of analyses, global reach, reduced data entry errors and reduced response bias, and survey question diversity and completion.

Speed. Ten of the 20 publications in this study identified speed as one of the biggest benefits of electronic surveys and internet-based methods of survey data collection (Aerny-Perreten et al., 2015; Antoun & Cernat, 2020; Ball, 2019; Cope, 2014; Dodge & Chapman, 2018; Evans & Mathur, 2018; Lee, Sunwoong, Kim, Couper, & Woo, 2019; Pan et al., 2013; Maymone et al., 2018; McPeake, Bateson, & O’Neill, 2014; Saleh & Bista, 2017). Electronic surveys are deployed quickly and completed surveys available to researchers instantaneously (Ball, 2019; Evans & Mathur, 2018; Maymone et al., 2018). Traditional postal distribution and response can take weeks (Cope, 2014; Maymone et al., 2018).

Cost effectiveness. Ten publications agreed that electronic surveys are far cheaper than mailed surveys (Antoun & Cernat, 2020; Ball, 2019; Cope, 2014; Evans & Mathur, 2018; LaRose & Tsai, 2014; Maymone et al., 2018; McPeake et al., 2014; Pan et al., 2013; Saleh &
Bista, 2017; Ward & Meade, 2017). Many web-based applications are automatic and takes less time to process the surveys (Ball, 2019; Evans & Mathur, 2018). As such, less manpower is needed thus saving research teams money (Ball, 2019; Evans & Mathur, 2018; Maymone et al., 2018).

Convenience and flexibility. Ten publications said that electronic surveys offer convenience and flexibility to the researcher and the participant (Antoun & Cernat, 2020; Ball, 2019; Buskirk & Andrus, 2014; Evans & Mathur, 2018; Lee et al., 2019; Maymone et al., 2018; McPeake et al., 2014; Pan et al., 2013; Revilla, Couper, Bosch, & Asensio, 2020; Schlosser & Mays, 2018). They are easily deployed through web-based applications to respondents, who can then use their PCs, smart phones, or tablets (Buskirk & Andrus, 2014; Lee et al., 2019; Schlosser & Mays, 2018). Smart phone users can employ voice input and voice recording to complete surveys (Revilla et al., 2020). Such accessibilities improve response rates since participants can complete the questionnaires on their own timetable (Ball, 2019; Buskirk & Andrus, 2014).

Ease of analysis. Most electronic surveys or web-based applications perform analyses of completed surveys automatically, making the process of cleaning or coding most of the data unnecessary (Ball, 2019; Cope, 2014; Couper & Peterson, 2017; Buskirk & Andrus, 2014; Evans & Mathur, 2018; Langenderfer-Magruder & Wilke, 2020; Maymone et al., 2018; McPeake et al., 2014). Many applications can even help researchers calculate and track response rates (the number of completed surveys divided by the number of surveys distributed) compared to view rates (the number of people viewing the survey divided by the number of site visitors) to ascertain effectiveness of their distribution process (Fincham, 2008; Maymone et al., 2018). Some even offer Health Insurance Portability and Accountability Act (HIPAA) compliance within their software (Maymone et al., 2018).
Global reach. Seven of the publications liked the global reach of electronic surveys (Ball, 2019; Cope, 2014; Evans & Mathur, 2018; LaRose & Tsai, 2014; Pan et al., 2013; Maymone et al., 2018; McPeake et al., 2014). The internet provides researchers access to nearly every part of the world and they can reach large and even remote populations (Ball, 2019; Maymone et al., 2018). Electronic surveys can be launched via social media outlets, emails, or web-based applications, making it easier to contact a broader audience than with traditional mailed surveys (Ball, 2019; Pan et al., 2013; Maymone et al., 2018; McPeake et al., 2014).

Reduced data entry errors and reduced response bias errors. Seven publications listed reduced errors a major benefit of electronic surveys (Ball, 2019; Buskirk & Andrus, 2014; Cope, 2013; Evans & Mathur, 2018; Maymone et al., 2018; McPeake et al., 2014; Revilla et al., 2020). Web-based electronic surveys record and send response information automatically to a server, eliminating the need for humans to enter large quantities of information, thus reducing data entry errors (Ball, 2019; Evans & Mathur, 2018; Maymone et al., 2018). Electronic and web-based surveys may also decrease such errors as social desirability bias. This type of bias occurs when respondents give answers they think are expected or withhold information that might be embarrassing (Ball, 2019; Evans & Mathur, 2018; Maymone et al., 2018; McPeake et al., 2014). In fact, some studies have found that people give computers more honest and detailed answers to sensitive information than to a human since a computer cannot judge their responses (Lucas, Gratch, King, & Morency, 2014; McInroy, 2016).

Survey question diversity and completion. Electronic surveys make it far easier to design a high-quality measurement tool than with written surveys (Ball, 2019; Buskirk & Andrus, 2014; Evans & Mathur, 2018; Lee et al., 2019; Liu & Wronski, 2018; Revilla et al., 2020). Most survey software provides researchers user-friendly ways of creating surveys with intuitive question
arrangement, easy-to-use reply categories, and visually appealing graphics (Ball, 2019; Evans & Mathur, 2018; Lee et al., 2019; Revilla et al., 2020). Some applications offer question diversity and adaptive questioning, wherein computer testing techniques reduce the number of items each respondent must answer (Montgomery & Rossiter, 2020). This method automatically re-directs participants to specific sections of the questionnaire based on how they answered previous items and can improve completion rates (Ball, 2019; Evans & Mathur, 2018; Lee et al., 2019; Revilla et al., 2020). Some applications restrict invalid responses to survey questions or require respondents to complete before logging out, thereby decreasing the number of missing answers (Evans & Mathur, 2018).

Disadvantages of Electronic Surveys

There were major themes outlining the problems associated with electronic surveys. These can be classified as response outcomes (nonresponse outcomes, item-nonresponse outcomes and completion rates, and careless responding errors) and digital literacy requirements. Expert recommendations to help mitigating many of these problems is found in Table 13. Although these issues are common with traditional pen-and-paper surveys, this section will address response outcomes unique to electronic surveys.

Nonresponse outcomes. Fifteen publications in this review cited nonresponse errors as a major concern regarding electronic surveys (Aerny-Perreten et al., 2015; Ball, 2019; Buskirk & Andrus, 2014; Cope, 2014; Couper & Peterson, 2017; Dodge & Chapman, 2018; Evans & Mathur, 2018; LaRose & Tsai, 2014; Lee et al., 2019; Liu & Wronski, 2018; Maymone et al., 2018; McPeake et al., 2014; Saleh & Bista, 2017; Schlosser & Mays, 2018; Ward & Meade, 2017; Yan et al., 2010). Nonresponse is a phenomenon wherein information is not acquired from the population of interest because participants refuse or cannot take part in the study (Ball, 2019;
Cope, 2014; Maymone et al., 2018). Other nonresponses are dropout or break-off wherein respondents begin a survey but then quit (“dropout” or “break-off”) before completing it and never return (Liu & Wronski, 2018; Schlosser & Mays, 2018, p. 231). Researchers report this issue as response rates; the number of completed surveys divided by the number of surveys distributed (Fincham, 2008). Low response rates or high nonresponse errors impact sample size, introduce unintended bias, and undermine a study’s validity (Ball, 2019; Cope, 2014; Maymone et al., 2018).

In general, experts agree that nonresponse is a common concern for all forms of survey studies (Glen, 2015; Polit & Beck, 2017; Lavrakas, 2008b; Timmins, 2015), the causes, however, are different for electronic surveys (McPeake et al., 2014; Pan et al., 2013). Distribution of electronic surveys to populations without adequate access to internet services or devices, for example, could inadvertently omit portions of the total sample, creating a coverage error or nonresponse bias (Ball, 2019; Couper & Peterson, 2017; Dodge & Chapman, 2018; Evans & Mathur, 2018; McPeake et al., 2014; Pan et al., 2013). Anti-virus software can also cause nonresponse errors. Such software is intended to protect against spam and malware by flagging bulk emailed electronic surveys as junk mail (Ball, 2019; Cope, 2014; Evans & Mathur, 2018; Pan et al., 2013). Skepticism over cyber security or concerns about personal privacy, may also cause reluctance to participate (Couper & Peterson, 2017; Evans & Mathur, 2018; Maymone et al., 2018; McPeake et al., 2014; Saleh & Bista, 2017). Lastly, Survey fatigue, wherein people get tired of receiving copious amounts of electronic surveys via emails, can be a cause of nonresponse issues. (Evans & Mathur, 2018; Pan et al., 2013; Maymone et al., 2018).

Item-nonresponse/completion rates. Fifteen publications underscored the problem of item-nonresponse errors and completion rates for electronic surveys (Antoun & Cernat, 2020;
Item-nonresponse occurs when participants return a survey with some but not all of the questions answered (Schlosser & Mays, 2018). Completion rates are a calculation of the total number of completed surveys in a study divided by the total number of people who actually began the survey (Antoun & Cernat, 2020). These issues can threaten data quality and impact sample size when analysis software excludes incomplete surveys from a study (Ball, 2019; Cope, 2014; LaRose & Tsai, 2014).

Poor completion rates can be reflective the quality of an electronic survey tool (Ball, 2019; Cope, 2014; Evans & Mathur, 2018; Maymone et al., 2018; McPeake et al., 2014; Ward & Meade, 2017). Surveys with long completion times often have lower completion rates (Antoun & Cernat, 2020; Schlosser & Mays, 2018; Yan et al., 2010). One study examining electronic survey completion rates found increased page numbers were associated with decreased completion rates ($\beta = -.005, t = -45.65, p < .001$), and word counts were inversely correlated with completion rates ($\beta = -.005, t = -45.65, p < .001$) (Liu & Wronski, 2018). Yan et al. (2010) found statistically significant higher participant break-off rates for longer questionnaires (16.8%) compared to shorter ones (10.6%), as measured by two-way logit analysis ($X^2 (1) = 14.7, p < .0001$).

Careless responding. Seven articles in this review identified careless responding as problematic with electronic surveys (Antoun & Cernat, 2020; Ball, 2019; Couper & Peterson, 2017; Maymone et al., 2018; Liu & Wronski, 2018; Saleh & Bista, 2017; Ward & Meade, 2017). This type of response error happens when participants answer questions without intent, read
items too quickly or inaccurately, thus, their responses may not reflect their true views on the
topic (Saleh & Bista, 2017; Ward & Meade, 2017). Questions requiring a lot of focus may feel
burdensome to respondents, so they will give random answers to use reduce their intellectual
efforts (Antoun & Cernat, 2020; Yan et al., 2010). While using a smartphones for surveys is
convenient it can lead to careless responding. For example, questions requiring a long-texted
answer are difficult, the print may be too small to read, or people answering on-the-go become
distracted then carelessly respond (Antoun & Cernat, 2020; Couper & Peterson, 2017; Saleh &
Bista, 2017).

*Technological and digital literacy requirements.* Nine publications in this review stressed
the technical and digital literacy requirements of electronic surveys as a major disadvantage
(Ball, 2019; Cope, 2014; Couper & Peterson, 2017; Dodge & Chapman, 2018; Evans & Mathur,
2018; LaRose & Tsai, 2014; Maymone et al., 2018; McPeake et al., 2014; Pan et al., 2013).

*Digital literacy* is defined as a person’s ability to acquire, understand, and converse with
information in a completely digital situation or environment (Evans & Mathur, 2018). Lack of
this type of technological skill can inadvertently exclude people from taking part in a study.
Populations from rural areas where internet service is absent, limited, unpredictable, or too
expensive may be unable to participate (McPeake et al., 2014). People without access to an
electronic device such as a PC, a smartphone, or a tablet may also be unintentionally excluded
(Ball, 2019; Evans & Mathur, 2018; McPeake et al., 2014). These issues can introduce produce
sample bias if these things are prevalent among a target population (Maymone et al., 2018;
McPeake et al., 2014).
Discussion and Recommendations

The Johns Hopkins Nursing Evidence-Based Practice guidelines for publication quality and LOE were used to evaluate each of the 20 articles included in this review (Dang et al., 2012). They were all found to be of either good or high quality. There was one randomized control study (LOE I) and seven quasi-experimental (LOE II) studies in this review. The survey studies all reported psychometrically strong properties for their measurement tools (LOE II or III) thus adding to the validity to their findings. Two expert opinion articles were written by a panel of authorities who provide guidelines for research in their respective disciplines (LOE IV), and the others were all nationally known experts in their fields (LOE V).

This review explored many advantages and overlapping themes regarding the use of electronic surveys for social science research. Electronic surveys are often available to users instantly, and participants can complete surveys anytime, anywhere, and on multiple devices (Ball, 2019; Cope, 2014; Dodge & Chapman, 2018; Evans & Mathur, 2018; LaRose & Tsai, 2014; Pan et al., 2013). They are cheaper because there is no need for expensive postage and often require less manpower to process distribution, collection, and analysis (Dodge & Chapman, 2018; Evans & Mathur, 2018).

Special survey software helps researchers to create interactive designs that improve the diversity of the questions and make the surveys more interesting for participants. Such software also allows researchers to perform high-level statistical analysis on completed surveys with fewer errors caused by manual data entry (Buskirk & Andrus, 2014; Evans & Mathur, 2018; Langenderfer-Magruder & Wilke, 2020; Maymone et al., 2018; McPeake et al., 2014). Such findings are similar to other research demonstrating that the proper use of electronic surveys can improve research practices and outcomes within a discipline (Faggiano & Carugo, 2020; Rice &
Winter, 2020; Smith, Reiter, Crist, Schultz, & Choma, 2016). Some researchers have even found that the use of special electronic survey software can improve clinical practice and patient satisfaction scores (Basso-Williams, Fletcher, Gornick, Kwan, & Schlechter, 2020; Faggiano & Carugo, 2020).

There are also important limitations that researchers must consider when choosing electronic surveys as a method of data collection. Antivirus software, for example, may place a survey invitation directly into a potential participants’ junk mailboxes where they never see it (Dodge & Chapman, 2018; Evans & Mathur, 2018; McPeake et al., 2014; Pan et al, 2013). People may also feel overloaded with emailed survey requests. Sending out personalized emails outlining the goals of the study, however, may help solve some of these issues (McPeake et al., 2014; Ward & Meade, 2017). Survey researchers have also found that using incentives such as cash offerings, gift cards, or lotteries with higher payouts can significantly improve response and completion rates (Evans & Mathur, 2018; Maymone et al., 2018; LaRose & Tsai, 2014). The concern over cyber security is also quite prevalent today and may cause people to opt out of a study (Evans & Mathur, 2018; Maymone et al., 2018; Pan et al., 2013). Reassuring participants that their identities will be safeguarded through special security software and that their personal information and IP address will remain anonymous may alleviate some of these concerns (Ball, 2019; Helms et al., 2017).

Electronic surveys can also produce high item-nonresponse outcomes. The use of mobile technology, for example, may increase participation in survey studies (improved response outcomes), but people can become distracted and give careless responses or skip items when answering a questionnaire on the go (Antoun & Cernat, 2020; Couper & Peterson, 2017; Liu & Wronski, 2018; Maymone et al., 2018; Saleh & Bista, 2017). Some of these issues, however, can
be resolved with properly designed surveys. Electronic surveys (like their paper counterparts) should be concise, have detailed instructions, and be easy to read (Brady, 2016). When possible, researchers should design shorter surveys with fewer words and questions per page to increase completion rates (Maymone et al., 2018; Ward & Meade, 2017; Yan et al., 2010). Additionally, using multiple-choice questions only and not long text-written answers may prove helpful for smartphone users (Liu & Wronski, 2018; Schlosser & Mays, 2018; Yan et al., 2010). Whenever possible researchers should utilize high-tech commercial grade survey application software to produce a quality product that is user-friendly, visually attractive, with question diversity that it intuitive and adapts to participant’s answers (Maymone et al., 2018).

Technological and digital literacy requirements present their own serious issues. For example, people who lack computers or smart devices, live in rural locations with poor internet access, or do not possess the digital literacy to navigate such technology may be inadvertently excluded from studies, which causes sampling biases (Ball, 2019; Couper & Peterson, 2017; Dodge & Chapman, 2018; Evans & Mathur, 2018; McPeake et al., 2014; Pan et al, 2013). To combat these issues, researchers might consider offering other options such as interviewer-assisted computer-assisted telephone interviews (CATI) when possible or paper versions of the survey for those who may need it (Ball, 2019; Lee et al., 2019; McPeake et al., 2014). If these issues are common for participants from a target population, however, it may be necessary to choose another data collection method (Ball, 2019; McPeake et al., 2014). See Table 4 for detailed recommendations for mitigating the problems with electronic surveys.
Table 11. Evidence-Based Recommendation to Mitigate Issues with Electronic surveys

<table>
<thead>
<tr>
<th>Threats to Quality in Electronic Survey Studies</th>
<th>Problems Associated with Quality</th>
<th>Strategies to Mitigate Problems</th>
</tr>
</thead>
</table>
| Nonresponse Errors                            | Disinterest or break-offs       | • Make the topic as interesting as possible (Liu & Wronski, 2018; Schlosser & Mays, 2018).  
|                                               |                                 | • Add incentives such as gift cards and/or lotteries for bigger prizes (LaRose & Tsai, 2014; Liu & Wronski, 2018). |
|                                               | Survey fatigue                  | • Offer incentives such as gift cards or lotteries with higher-stake prizes for participation (Cope, 2014; LaRose & Tsai, 2014).  
|                                               |                                 | • Tell participants the expected completion time up front (Saleh & Bista, 2017).  
|                                               |                                 | • Outline study goals for participants and explain how their input helps; encourage a sense pride in taking part (Saleh & Bista, 2017). |
|                                               | Antivirus kicks email to junk mailbox | • Send personalized email invitations to participants, avoiding bulk email send-outs (McPeake et al., 2014; Ward & Meade, 2017). |
|                                               | Concern over security           | • Assure participants their IP addresses will remain anonymous, and their identities will be safeguarded by way of special security software (Ball, 2019; Helms et al., 2017). |
|                                               | Technological access and literacy | • Consider providing paper surveys or phone call surveys when possible for participants without reliable internet, devices, or technological skills technology (Ball, 2019; McPeake et al., 2014). |
| Item-nonresponse and Completion Rates          | Survey length and design and/or the platform | • Surveys should be brief, appealing, and easy to complete (Brady, 2016).  
|                                               |                                 | • Create shorter surveys with fewer words and questions per page (Maymone et al., 2018; Ward & Meade, 2017; Yan et al., 2010).  
|                                               |                                 | • Use multiple-choice questions only, if possible (Liu & Wronski, 2018; Yan et al., 2010).  
|                                               |                                 | • Avoid text-written answers, especially when considering smart phone users (Liu & Wronski, 2018; Schlosser & Mays, 2018).  
|                                               |                                 | • Consider using commercial grade survey applications/software to create a user-friendly, visually attractive product with diversity/adaptive questions (Maymone et al., 2018). |
|                                               | Technology                      | • Survey should be easy to navigate and easy to see/read with large enough print (Schlosser & Mays, 2018).  
|                                               |                                 | • Offer links for participants to print out a paper copy if they prefer this alternative (Antoun & Cernat, 2020).  
|                                               |                                 | • Offer voice input (VO) for smartphone users to say their answers (Couper & Peterson, 2017). |
|                                               | Forgetfulness                   | • Send out reminder emails (Langenderfer-Magruder & Wilke, 2020; Schlosser & Mays, 2018; Timmons, 2015). |
|                                               | Not motivated to finish         | • Consider offering higher-stake lottery prizes as these have been shown to be more effective than cash or gift card incentives for increasing completion rates (LaRose & Tsai, 2014). |
| Careless Responding                            | Boredom, disinterest, or rushing through the survey to save time | • Provide clear and concise instructions on how the survey should be answered (Brady, 2016).  
|                                               |                                 | • Use basic vocabulary and short sentences (Brady, 2016).  
|                                               |                                 | • Reinforce purpose of the study and why participation is so important (Ward & Meade, 2018; Pan et al., 2013).  
|                                               |                                 | • Offer video-recorded instructions by the researchers, themselves, to increase participant confidence in study validity (Pan et al. 2013).  
|                                               |                                 | • Offer shorter surveys with multiple choice questions and easier questions when possible (Maymone et al., 2018; Schlosser & Mays, 2018). |
|                                               | Insufficient effort responses   | • Consider using high-tech survey software that can detect careless, low-effort, straight-lining, and random responses (Maymone et al., 2018). |
| Technological and digital literacy requirements | Lack of devices, access to reliable internet, and/or digital literacy | • Consider using computer-assisted telephone interviews/CATI or offer paper versions of the survey (Ball, 2019; Lee et al., 2019; McPeake et al., 2014).  
|                                               |                                 | • If these issues are prevalent among the target population, consider another data collection method (Ball, 2019; McPeake et al., 2014). |
Implications for Nurse Researchers

Self-administered electronic surveys have become an essential part of social science research but may also improve healthcare practices. In some instances, advances in technology and new survey applications like quick response (QR) codes are enhancing patient experiences and increasing staff safety (Faggiano & Carugo, 2020). Quick response codes are two-dimensional barcodes that use the camera from smart devices to connect users immediately to websites for specific content such as medical questionnaires in hospitals (Basso-Williams et al., 2020; Faggiano & Carugo, 2020). Some QR codes allow patients complete the surveys that are instantly uploaded to electronic records systems where healthcare workers can access the information needed to prioritize care. This technology reduces healthcare workers are face-to-face composure to potentially infected patients, a necessary objective during a pandemic (Faggiano & Carugo, 2020). Some epidemiologist researchers believe QR survey codes to be the most cost-effective strategy for performing the large-scale data collection needed to study COVID-19 (Faggiano & Carugo, 2020).

Conclusion

This review outlined the uses and advantages of electronic questionnaires their disadvantages, and their importance in survey research. Electronic surveys offer researchers a fast, efficient, economical approach to data collection with a global reach and fewer data entry errors. It is important, however, for researchers to know the problems associated using with electronic surveys and find ways to mitigate them.
References


APPENDIX A: RESEARCH DISSERTATION PROPOSAL
THE INFLUENCES OF GENERATIONAL MEMBERSHIP, PRACTICE ENVIRONMENT, ON NURSE MANAGER JOB SATISFACTION: A QUANTITATIVE RESEARCH DISSERTATION PROPOSAL

Abstract

The United States (US) is facing shortages in all aspects of the nursing profession, including management. As an essential member of the healthcare team, the nurse manager (NM) influences the quality of patient care, affects staff-nurse retention, and helps implement front-line healthcare changes. But low intentions to stay and poor recruiting outcomes threaten the current and future supply of NMs. Today there are three generations of NMs in practice: baby boomers, generation Xers, and millennials. Each of these cohorts has their own unique perception of practice environments and job satisfaction, but sparse research is devoted to understanding these differences. The aim of this quantitative cross-sectional study will be to determine how generational membership influences NMs’ perception of their work environment and job satisfaction. A secondary analysis will be performed, using previously collected survey data from NMs (n=647) who completed the Nurse Manager Practice Environment Scale (NMPES) and demographics questionnaire. Descriptive statistics and bivariate testing will be used to examine correlations between the variables using generation, NM perception of their practice environment (NMPES scores), and NM job satisfaction scores. Restricted multiple linear regression analysis will be used to examine the interaction between NMPES scores, generational membership, and NM job satisfaction. Findings from this study will offer guidance to nursing scientists and administrators for creating unique and generationally appropriate retention and recruitment strategies.
For the past decade, the massive exodus of nurses and NMs to retirement has depleted the supply. Retiring boomers, however, are currently the smallest cohort in practice, so attributing NM shortages solely to boomer retirements is not an accurate assessment. Generation Xers and millennials now far outnumber boomers in nursing and management (Dimock, 2018; Dols, Chargualaf, & Martinez, 2019; Martin & Kallmeyer, 2018; Warshawsky & Cramer, 2019), and it is unlikely that these two cohorts of NMs are retiring. Many of them, however, are choosing to leave their current managerial roles in two to five years, citing that burnout and dissatisfaction are their main reasons (Christopher, Waters, & Chiarella, 2017; Hewko et al., 2015; Saifman & Sherman, 2019; Warshawsky et al., 2016). Poor NM recruitment outcomes are also contributing to supply deficits, and new evidence suggests that younger nurses are choosing to pursue careers in advanced clinical practice and not in management (AMA Healthcare, 2019).

Purpose of the Study

A lot is known from the literature about the expectations of staff nurses’ work environment, recruitment, satisfaction, retention, and turnovers. This is not the case for in the NM population. The literature also shows that the career and job expectations, as well as the perceptions of the work setting, and what makes a job satisfying may be different among generations (AME Healthcare, 2019; Christensen, Wilson, & Edelman, 2017; Chenkovich & Cates, 2016; Deloitte Global, 2019; Dols et al., 2019; Faller & Gogek, 2019; Fishman, 2016). To date, however, research is sparse in which generational differences and NM perceptions of their practice environment and job satisfaction have been examined in tandem.

The purpose of this study will thus be to examine the relationship between generational membership and NMs’ perceptions of their practice environments and job satisfaction. Findings will inform future research efforts and provide evidence to help organizations improve NM
practice norms, create generationally specific retention methods, and design appropriate recruitment strategies to entice younger nurses to pursue management. See Figure 6A for a model of the variables of interest.

\[ \text{NMPES} \]
\[ \text{(discrete independent variable or moderator Variable)} \]

\[ \text{Generational Membership} \]
\[ \text{(discrete independent variable or predictor variable)} \]

\[ \rightarrow \]

\[ \text{NM Job Satisfaction} \]
\[ \text{(Outcome Variable or dependent variable)} \]

*Figure 4 A. Variables of Interest*

**Research Questions**

*Q1*: Among NMs, is there a correlation between perception of the practice environment and job satisfaction?

*Q2*: Among NMs, is there a correlation between generational membership and perception of the practice environment?

*Q3*: Among NMs, is there a correlation between generational membership and job satisfaction?

*Q4*: Does generational membership moderate the effects of NM perception of their practice environment on job satisfaction for NMs?

**Theoretical Framework**

The Conceptual Framework for Predicting Nurse Retention (CFPNR) provides an appropriate theoretical context for this study. The CFPNR asserts there are two major factors that influence nurses’ job satisfaction and retention: influencing factors and intermediary factors.
(Sawatzky & Enns, 2012; Sawatzky et al., 2015). *Influencing factors* can be described as the effects that institutional practices may have on retention. These include aspects like organizational climate, staffing and resources, management, nurse-medical staff collaborations, nursing competence, and scheduling conditions (Sawatzky & Enns, 2012; Sawatzky et al., 2015).

*Intermediary factors* impact retention or turnover. These include job satisfaction, engagement, professional quality of life, compassion fatigue (loss of the ability to nurture evolving from the stress of prolonged intense contact with patients), satisfaction (the pleasure that caregivers get from doing their job well), burnout, and caring (Sawatzky & Enns, 2012; Sawatzky et al., 2015).

The CFPNR was built upon several previous research studies (Choi, Bakken, Larson, Du, & Stone, 2004; Larrabee et al., 2003; Sawatzky & Enns, 2012; Tzeng 2002), and its authors, Sawatzky & Enns (2012) claim that organizational climates are predictive of job satisfaction and retention. To that end, there is a substantial evidence to support their definitions of a healthy organizational climate and their assertions that these factors are predictive of job satisfaction and retention (Fisherman, 2016; Sawatzky & Enns, 2012; Sawatzky et al, 2015; Ulrich et al., 2014; Warshawsky, Rayens, Lake, & Havens, 2013b; Warshawsky et al., 2016; Wilkes et al., 2016). See Figure 7A for a model of the CFPNR.
Background and Significance

The NM is a vital member of any healthcare team. They supervise important daily functions like staffing their units, personnel recruitment, executing changes in healthcare policies, and is responsible for huge budgets and overseeing important resources (DeCampli, Kirby, & Baldwin, 2010; Moore et al., 2016; Saifman & Sherman, 2019). Nurse managers help to create an environment which promotes the positive outcomes of the organization, the nursing staff, and the patients (Hewko et al., 2015; Ulrich et al., 2014; Warshawsky et al., 2013c; Wilkes et al., 2016). Thus, the increasing shortages of NM is a crisis for healthcare institutions and for the nursing profession on the whole. There is, however, little research focused on NMs’ job satisfaction and turnovers.

Review of the Literature

The magnitude of NM shortages is not fully known but recent reports indicate that turnovers may be rising, the number of experienced NMs has declined, and recruitment

Figure 5A. Conceptual Framework for Predicting Nurse Retention
continues to be a challenge (Martin, & Kallmeyer, 2018; Warshawsky et al., 2016; Warshawsky & Cramer, 2019). In one study examining NM job satisfaction and intent to leave, 68% of the study’s participants’ \( n=348 \) planned to leave their positions in three years or less (Warshawsky et al., 2016). A national study exploring NM competencies found more than 60% of its participants \( n=674 \) had four years or less of experience as a manager and nearly 25% had less than two years (Warshawsky & Cramer, 2019). In a recent study focused on the workplace bullying of NMs participants \( n=241 \) had less than five years of experience (Parchment & Andrews, 2019). The mean age of NM participants from each of these studies was less than 49 (Martin, & Kallmeyer, 2018; Parchment & Andrews, 2019; Warshawsky & Cramer, 2019; Warshawsky et al., 2016).

Recruiting adequate numbers of NMs has also been challenging for organizations. Younger staff nurses who might be good candidates for management often see their own NMs carrying burdensome workloads, dealing with inflexible schedules, and struggling to establish an acceptable level of work life balance (Martin & Kallmeyer, 2018). For potential managers, seeing their supervisors dealing with these issues presents a picture that conflicts with typical generation X’ers’ and millennials’ expectations of a healthy balance between their jobs and personal lives (Christopher et al., 2017). Studies have found that millennials often opt to trade high monetary compensation for a job that has less workload or is more flexible (AME Healthcare, 2018; Chenkovich & Cates, 2016; Deloitte Global, 2019; Dorsey & Blanco, 2015; Fishman, 2016). This combination of poor work life balance and lack of flexibility may be causing younger generations of nurse to rule out management as a career option.

Today, registered nurses (RNs) enjoy a plethora of career opportunities previously not available. The number of RNs choosing to become advanced practice registered nurses
(practitioners, midwives, anesthetists, clinical nurse specialists, and clinical nurse educators) and nursing informatics specialists is on the rise (American Association of Nurse Practitioners [AANP], 2019; Kauflin, 2017). The American Association of Nurse Practitioners (AANP) reports that licensure of nurse practitioners has nearly doubled since 2007, and this kind of growth is expected to continue (AAPN, 2019). The number of nurses opting for careers in nursing informatics is also on the rise, and demand is expected to increase dramatically in the next few years (Kirchner, 2014). Informatics is a specialty that combines computer and information sciences to help improve the communication of data in nursing practice (Healthcare Information Management Systems Society [HIMSS], 2019; Kirchner, 2014). Positions like these frequently offer higher salaries and more flexible work schedules than nursing management (AANP, 2019; Kauflin, 2017). Hospitals are competing with these new nursing career options, making it difficult for such organizations to fill their NM vacancies.

In addition to losing potential NMs, massive NM vacancies have caused organizations to push their nurses into management before they are ready. In a large national study researchers found that their NM participants reported poor competencies, which indicates that many managers are either not being properly trained or not being given enough time to learn the complexities of the job (Warshawsky & Cramer, 2019). Millennial NMs participants from a qualitative study reported that they had received no orientation or formal training. These NMs expressed frustration over their own lack of skill and shared a common theme that guidance was unavailable (Saifman & Sherman, 2019). Absence of training and oversight is not congruent with the expectations of most millennials, who often demand long orientations and mentoring (AME Healthcare, 2019; Anselmo-Witzel, Orshan, Heitner, Bachand, 2017; Dols et al., 2019; Yarbrough, Martin, Alfred, & McNeill, 2017).
Impact of the Phenomenon

The NM is one of the most important members of the healthcare team, overseeing and coordinating patient care and safety, creating effective and efficient teams, tailoring daily objects to organizational outcomes, scheduling, budgeting, and contributing to the implementation of frequent healthcare changes and initiatives (DeCampli, Kirby, & Baldwin, 2010; Moore et al., 2016; Saifman & Sherman, 2019). These responsibilities are complex and have dramatically expanded over the past decade. Since implementation of value-based purchasing (VBP) in the US healthcare system, NMs have also been charged with overseeing certain aspects of patient reimbursements (Warshawsky, 2018). The VBP program is a complex payment system that holds healthcare providers and hospitals responsible for not only clinical outcomes but lowering patient costs as well (Centers for Medicare & Medicaid Services [CMMS], 2019). Navigating such complexities requires training and knowledge, but most NMs lack such experience.

It takes many years for NMs to become fully proficient in a variety of needed competencies, so the loss of seasoned managers causes barriers to the functionality of organizations, resulting in numerous and costly capital losses (Baxter & Warshawsky, 2014; Shirey, 2007; Warshawsky & Cramer, 2019; Warshawsky et al., 2013a). One such loss is financial capital. Training NMs is a major capital investment for institutions and has an average cost of $400,000 to refill a vacancy (Phillips, Evans, Tooley, & Shirey, 2018). Nurse manager turnovers are also costly in that they are highly disruptive to the efficient operations of any healthcare enterprise and can have profoundly negative patient outcomes, such as increased lengths of stays, nosocomial infections, and even increased mortality rates (Aiken, Clarke, Sloane, Sochalaski, & Silber, 2002; DeCampli & Baldwin, 2010; Moore et al., 2016; Phillips et al., 2018; Warshawsky et al., 2013a; Warshawsky et al., 2013c).
There are other important but less obvious capital losses associated with NM vacancies. When NMs quit, they take with them human capital (person-specific skills and abilities), social capital (networking and corporate knowledge), and organizational capital (knowledge of administrative protocols and proprietary information) (Pedersen, Sorensen, Babcock, & Bradley, 2018; Warshawsky & Cramer, 2019). These are all valuable commodities that take years to develop (Buerhaus et al., 2017a; Baxter & Warshawsky, 2014; Warshawsky & Cramer, 2019). Poor NM retention, combined with inadequate recruiting outcomes, leaves organizations with not only vacancies in management but deficits of corporate wisdom.

**Predictors of NM Job Satisfaction and Retention**

Nurse managers leaving their jobs is a multifaceted and interrelated phenomenon that includes characteristics of the practice environment as well as generational association (Hewko et al., 2015; Kath et al., 2012; Warshawsky et al., 2013a; Warshawsky et al., 2016). In the past decade researchers have shown that the NM practice environment and job satisfaction are predictive of retention and turnover (Hewko et al., 2014; Kath et al., 2012; Warshawsky et al., 2013a; Warshawsky et al., 2016). Studies have also found that job satisfaction and the perception of work environments can differ by generational cohorts (Chenkovich & Cates, 2016; Christensen et al., 2017; Dols et al., 2019; Faller & Gogek, 2019; Fishman, 2016). There is, however, a dearth of research in which both of these factors are examined.

**Practice environment characteristics.** The NM practice environment is complex and multilayered. A healthy NM practice environment will have an organizational commitment to patient safety and quality care (Hewko et al., 2015; Warshawsky et al., 2013a; Warshawsky et al., 2013b; Warshawsky et al., 2013c; Warshawsky et al., 2016). There must also be adequate support and provision to achieve positive outcomes. Studies have found correlations between
proper allocation of resources (equipment, fiscal capital, adequate personnel, and training) and NM intention to stay (Hewko et al., 2015; Warshawsky et al., 2013a; Warshawsky et al., 2013b; Warshawsky et al., 2016). Lack of such support can compromise NMs’ ability to perform their duties, causing frustration and dissatisfaction (Moore et al., 2016; Saifman & Sherman, 2019; Warshawsky et al., 2013a).

Support from staff and leadership are also essential to a healthy NM practice environment (Hewko et al., 2015; Kath et al., 2012; Warshawsky et al., 2013a; Warshawsky et al., 2013b; Warshawsky et al., 2016). The NM-staff relationships are predictive of job satisfaction and retention intentions (Kath et al., 2012; Warshawsky et al., 2013b; Warshawsky et al., 2016). The last decade of research has indicated that NMs with supervisors who empower, collaborate, and provide professional development opportunities were more likely to stay in their jobs than those without such supportive leadership (Oliver, Gallo, Griffin-Quinn, White, & Fitzpatrick, 2014; Hewko et al., 2015; Kath et al., 2012; Simpson, Dearmon, & Graves, 2017; Warshawsky et al., 2013a; Warshawsky et al., 2016; Weavers, Paliwal, Hessels, & Wurmser, 2019).

NM workloads are also predictive of both satisfaction and retention (Hewko et al., 2015; Kath et al., 2012; Simpson et al., 2017; Warshawsky et al., 2013a; Warshawsky et al., 2013b; Warshawsky et al., 2016). Nursing scientists recommend that organizations provide a healthy work life balance for their NMs to improve morale, satisfaction, and retention (Kath et al., 2012; Martin & Kallmeyer, 2018; Warshawsky et al., 2013a; Warshawsky et al., 2016; Wong, Laschinger, & Cziraki, 2014). Failure to do so often leads to NM dissatisfaction, burnout, and turnovers (Simpson et al., 2017; Warshawsky et al., 2013a; Warshawsky & Havens, 2014; Warshawsky et al., 2016).
Generational differences. There are three generations in nursing management today: boomers, generation Xers, and millennials (Martin & Kallmeyer, 2018; Parchment & Andrews, 2019; Warshawsky & Cramer, 2019). The body of research on NMs and generational differences is however sparse. This is likely because for decades baby boomers were the majority in management with very little change in that dynamic, until recently. What is known from the literature is that the characteristics and attitudes of both Xers and millennials are different than boomers (AME Healthcare, 2019; Christensen et al., 2017; Deloitte Global, 2019; Dols et al., 2019; Faller & Gogek, 2019).

Boomers (born 1945-1964) have been described as individualistic, loyal to their jobs, driven by money, and competitive workaholics who live to work (Christensen et al., 2017; Christopher et al., 2017; Dimock, 2018; Hendricks & Cope, 2013). Generation Xers (born 1965-1980) tend to be prefer autonomy and to be mentally independent, results oriented, skeptical, and work to live (Christensen et al., 2017; Christopher et al., 2017; Dimock, 2018). Millennials (born 1981-1996) are often characterized as technically savvy, group-oriented, values driven, and they require frequent positive feedback. This group also tends to move from job to job, depending on how satisfied they are, and they value a work-life balance-living in the present and not just for their jobs (AME Healthcare, 2019; Anselmo-Witzel et al., 2017; Chenkovich & Cates, 2016; Christensen et al., 2017; Dimock, 2018; Deloitte Global, 2019; Fishman, 2016). Organizations who understand the differences between these three groups can improve their NMs’ satisfaction by designing management strategies from a generational perspective rather than a one-size-fits-all approach (Fishman, 2016).
Methodology

Study Design

This quantitative study will be a secondary analysis of cross-sectional data from previously collected electronic surveys completed by 647 NMs (Warshawsky & Cramer, 2019).

Sample

To obtain NM participants, researchers employed Press Ganey to recruit members from the National Database of Nursing Quality Indicators ® (NDNQI®). Established in 1988, the NDNQI® has the largest storage of nurse-sensitive data in the US. The NDNQI® gathers data and information from over 1800 hospitals (Warshawsky & Cramer, 2019).

In the original study, an a priori power analysis using Monte Carlo simulation was performed. To achieve a preferred power of 90%, using a small effect size ($d=0.20$) and standard statistical significance ($P=0.05$) their analysis produced a recommended sample size of 50 hospitals and 250 NMs. Previous studies indicated that they should expect only a 20% response rate to the invitations sent out with a 65% response rates from those who agreed to participate. The research team’s original plan was to invite 500 hospitals to make up for potentially low response rates and attrition, and thus achieve their goal (Warshawsky & Cramer, 2019).

Ultimately 300 hospitals, who had taken part in the 2016 and 2017 NDNQI® annual nurse survey, were invited to join the study, and 150 hospitals agreed to participate. Warshawsky & Cramer (2019) then created a stratified sampling frame employed by Press Ganey, further reducing the final number to 80 randomly selected hospitals who met criteria (see Table A1 for the sampling frame selection criteria). Reminders and materials were send to participating hospitals encouraging NMs to complete the survey, producing a final count of completed surveys by 647 NMs from 964 units in 54 hospitals (Warshawsky & Cramer, 2019).
Table 12A. Sampling frame selection criteria (from original study)

<table>
<thead>
<tr>
<th></th>
<th>Small (&lt;100 Beds)</th>
<th>Medium (100-300 beds)</th>
<th>Large (&gt;300 bed)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Desired</td>
<td>Actual Responses</td>
<td>Sample</td>
<td>Desired</td>
</tr>
<tr>
<td>Academic Medical Center &amp; Magnet or Pathways</td>
<td>0</td>
<td>NA</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Academic Medical Center &amp; non-Magnet*</td>
<td>0</td>
<td>NA</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Teaching Hospital &amp; Magnet or Pathways</td>
<td>3-5</td>
<td>3</td>
<td>3</td>
<td>5-7</td>
</tr>
<tr>
<td>Teaching Hospital &amp; non-Magnet*</td>
<td>3-5</td>
<td>10</td>
<td>3</td>
<td>5-7</td>
</tr>
<tr>
<td>Non-Teaching &amp; Magnet or Pathways</td>
<td>3-5</td>
<td>8</td>
<td>3</td>
<td>10-12</td>
</tr>
<tr>
<td>Non-Teaching &amp; non-Magnet*</td>
<td>3-5</td>
<td>14</td>
<td>3</td>
<td>10-12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
<td>35</td>
<td>12</td>
<td>45</td>
</tr>
</tbody>
</table>

*Include magnet applicant in non-magnet category
Inclusion and Exclusion Criteria

The original study required inclusion criteria for hospitals as well as participants. At the hospital level only those with at least seven NMs in their organization who had completed the Practice Environment Scale-Nurse Work Index (PES-NWI) version of the Nurse Survey in 2015-2017 were invited to participate. Of these, only NMs responsible for around-the-clock care and oversight of one or more acute patient care units were included. Personnel with titles such as director, leader, or coordinator were also included in the study if their duties were the same as that of an NM. Managers in charge of outpatient settings or clinics were excluded.

For this proposed secondary analysis study, only data from NMs born between 1945-1996 will be included thereby capturing baby boomer, generation X, and millennial NMs (Dimock, 2018). Although a few members of the silent generation (born 1928-1945) are included in the data set, that cohort will be excluded for this analysis as they are 70 years or older and past normal retirement age (Dimock, 2018). Nurse managers with less than one year in their current position and interim NMs will not be included in the analysis because their practice environment may be new to them and could skew the findings.

Data Collection

For the original study, Warshawsky & Cramer (2019) gathered cross-sectional data through electronic surveys over a period of seven weeks. The numbers of completed NM surveys was 647, representing 54 hospitals, and 946 nursing units. Accounting for participants who omitted their age ($n=15$) and NM interns ($n=33$) the sample population for this secondary analysis study will be 599. This number exceeds the recommended sample size of 250 participants from the power analysis.
Measurements

The variables of interest for this study are generational membership, NMs’ perception of their practice environment, and job satisfaction. As stated earlier, this secondary analysis will employ findings from pre-existing primary data. Results from the electronic surveys included a demographic section, the Nurse Manager Practice Environment Scale (NMPES) questionnaire scores, a two-question job satisfaction questionnaire, and the individual hospitals as denoted by an identification number for each one.

Demographics Measurements. For descriptive statistical analysis data from a short demographic questionnaire are available. These include the participant’s age in years, gender, number of years in practice as an RN, number of years in practice as a NM, number of years in their current position, and data regarding whether they served as an interim NM.

Generational Membership Measurement. Participants’ generational membership will be determined from using their age recorded in the demographics data. Generations criteria will follow the Pew Research Center (2020) definitions for generations and ages: boomers (born 1945-1964), generation X (born 1965-1980), and millennials (born 1981-1996). Primary data were collected at the end of 2017, so this will be factor in to determine generational membership for the secondary analysis study.

Practice Environment Scale. The Nurse Manager Practice Environment Scale (NMPES) examines NMs’ perception of their practice environment. The NMPES is a 44-item questionnaire with eight subscales; patient and safety culture (PSC), culture of generativity (COG), culture of meaning (COM), nurse manager’s relationship with their director (NMDR), NM and medical staff relationship (NMMDR), NM-staff relationship (NMSR), budget resources/allocated resources (AL), and fair and balanced workload (WL). See Table A2 for complete definitions of
the domains. Responses will be averaged across the eight subscales to give a total NMPES score. The NMPES total scores will be calculated for each of the generational cohorts where the higher the total score, the higher the participants’ perception of their practice/work environment (Warshawsky et al., 2016).

The NMPES is an appropriate tool for studying the NM population and has sound psychometric properties (Warshawsky et al., 2013a; Warshawsky et al., 2013b; Warshawsky et al., 2016). In one study examining the strength and validity of the NMPES researchers found Cronbach alpha scores ranging from $\alpha$-0.72 to $\alpha$-0.97 and determined it to be a trustworthy instrument for this type of study (Warshawsky et al., 2013b).
<table>
<thead>
<tr>
<th>Domain</th>
<th>Definition</th>
<th>Sample Questions/Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Culture of patient</td>
<td>The organization’s mission and vision are evident throughout the enterprise. All actions and decisions are aligned with the organization’s mission and vision.</td>
<td>My nursing administrators encourage creativity and innovative solutions to problems.</td>
</tr>
<tr>
<td>safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Culture of meaning</td>
<td>The organization’s mission and vision are evident throughout the enterprise. All actions and decisions are aligned with the organization’s mission and vision.</td>
<td>I am able to translate the organization’s mission and goals to the front-line staff.</td>
</tr>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>3. Culture of generativity</td>
<td>The organization supports ongoing development of nursing leaders.</td>
<td>I have time to collaborate with front-line staff to develop solutions to the challenges we are experiencing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Adequate resources</td>
<td>Access to information, finances, and information technology is available to perform NM work functions. There are enough human resources and supplies to meet operational demands.</td>
<td>I have enough budgeted staff to meet operational demands.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5. Fair and balanced</td>
<td>Nurse managers are equally engaged in and equally satisfied with their work and nonwork roles. They perceive an even distribution of work among peers.</td>
<td>The number of people who report to me is manageable.</td>
</tr>
<tr>
<td>workload</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. NM-physician</td>
<td>Built on a foundation of mutual respect and accountability.</td>
<td>I have a physician partner who works with me to improve patient outcomes.</td>
</tr>
<tr>
<td>relationships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. NM-director</td>
<td>Built on a foundation of mutual respect, clear communication, and accountability. Directors provide NMIs with constructive performance feedback that helps the manager to grow and develop. The director does not micromanage the NM as this behavior may be interpreted as a lack of trust in their ability to perform their role.</td>
<td>My director provides me with constructive feedback on my performance.</td>
</tr>
<tr>
<td>relationships</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Domains/Dimensions of the NMPES (continued)

<table>
<thead>
<tr>
<th>Domain</th>
<th>Definition</th>
<th>Sample Questions/Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Effective NM unit staff relationships</td>
<td>Enable the work of the frontline staff. They ensure that organizational resources are available to support the delivery of quality patient care.</td>
<td>My unit staff works with me to resolve patient care issues. Together, the NM and unit staff adapt organizational processes to optimize outcomes.</td>
</tr>
</tbody>
</table>

(Warshawsky, Rayens, Lake, & Havens, 2013)
Job Satisfaction Measurement

Job satisfaction will be determined from the two-question job satisfaction survey in the original dataset. Question One asked “How satisfied are you with being a NM?” The response options included a Likert scale ranging from 1=very dissatisfied to 6=very satisfied. Question Two asked “How likely are you to recommend nurse management as a career choice for other nurses?” The response options again followed a Likert scale of 1=very unlikely to 6=very likely (Warshawsky & Havens, 2014; Warshawsky et al., 2016). Responses will be averaged across the two items to make a total mean job satisfaction score for each of the generations, where the higher the total score, the higher the total NM job satisfaction (Warshawsky et al., 2016).

Individual Hospitals

The sample population in the primary dataset were from 54 different hospitals. To account for measurement associated with nested data, hospital I.D. will be factored into the analysis using restricted maximum likelihood. Hospital identities are listed as numerical codes, not by institutional names, thus safeguarding the identities of participants. See Table A3 for a summary of the data collection including variables, the individual measurement tools, and surveys (the demographics questionnaire, the NMPES, job satisfaction survey, and the individual hospitals), response options, and the level of measurement for each.
### Table 14 A. Summary of data collection variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Instrument</th>
<th>Response options</th>
<th>Level of Measurement</th>
</tr>
</thead>
</table>
| **Demographics**              | Simple demographics questionnaire   | 1. Age in years  
2. Gender  
3. Years in practice as an RN  
4. Years in practice as a NM  
5. Years in current position  
6. Interim NM or not?         | Continuous  
Nominal  
Continuous  
Continuous  
Continuous  
Categorical |
| **Generational membership**  | One question from the demographic’s questionnaire | Select one age between 20-75 that best describes them | Nominal (boomer, Xer, millennial) |
| **NM practice environment**   | NMPES survey                        | Likert scale 1-6  
Ranging from 1-Strongly disagree to 6-Strongly agree | Ordinal LOM |
| **Job satisfaction questions**| Two question survey                 | *How satisfied are you with your job as a NM?*  
Ranging from 1-very dissatisfied to 6-very satisfied  
*How likely are you to recommend the job of NM to others?*  
Ranging from 1-very unlikely to 6-very likely | Ordinal LOM |
| **Hospital Level**            | Deidentified hospital ID numbers from surveys | Hospital name | Categorical |
Analysis

All study variables are to be summarized using descriptive statistics—including means, standard deviations, and frequency distributions—with histograms and bar graphs using IBM’s Statistical Package for Social Sciences (SPSS) version 26.0 (Knapp, 2017). Testing will follow descriptive analysis to explain correlations among the variables for NMPES, generation, and NM job satisfaction scores. If assumptions of normality, linearity, and homoscedasticity are met, Pearson’s Correlation coefficient testing will be employed. If assumptions are not met, these relationships will be examined using Spearman’s Rank Order Correlation testing (Kellar & Kelvin, 2013; Knapp, 2017; Leavy, 2017).

Restricted multiple linear regression analysis will be conducted if assumptions of normality, linearity, homoscedasticity, and multicollinearity are met. This approach will examine the strength or effect (if any) of the moderated relationship between NMPES scores, and generational membership on NM job satisfaction scores, while controlling for the effect of nested data using restricted maximum likelihood (Kellar & Kelvin, 2013).

Ethical Considerations

Pending approval from the University of Central Florida’s Internal Review Board (IRB), this secondary study will commence. This is a secondary analysis of pre-existing primary data no identifying data are available from completed surveys, thus the identities of the human subjects in this study are protected.

Threats to Validity

The most common threats to validity and reliability in a secondary analysis of pre-existing datasets often arise from the quality of the procedures by which primary data were collected including sampling and instrumentation (Boo & Froelicher, 2013). To understand the
strength of a dataset researchers must systematically review any information accessible about the 
primary study’s data collection processes, their codebooks and notes, and manuscripts previously 
published from the data. To increase validity and reduce errors it is essential to have a good fit 
between the research questions and the dataset. Researchers must therefore verify that it contains 
the same variables of interest and will allow for the desired analysis (Boo & Froelicher, 2013). 
Such information was made available to the primary investigator of this secondary analysis. The 
processes by which data were collected in the original study was rigorous and has been outlined 
in the sample and data collections sections.

The original study employed the NDNQI® database. They represent more teaching 
hospitals, hospitals with more than 400 beds, and magnet status centers than community-based 
facilities and other types of patient care institutions. This could present a potential for bias at the 
hospital level since organizations within NDNQI® elect to participate in the database and want 
to be a part of healthcare research. Randomly selecting hospitals from other sources could 
decrease such bias (Warshawsky & Cramer, 2019).

To ensure validity and reliability, a study’s sample must be large enough and 
representative of the general population being researched (Creswell & Guetterman, 2019; 
Lipsey, 1990; Kellar & Kelvin, 2013). To ensure this it is recommended that a power analysis be 
performed *a priori*, including effect size, minimally accepted power, and statistical significance 
(Cohen, 1988; Lakens, 2013). The original researchers did perform such an analysis. Their final 
sample size (n=647) well exceeded their power analysis’s recommended sample size 
(Warshawsky & Cramer, 2019; Warshawsky Proposal, n.d.).

Further threats to validity in survey studies are instrumentation appropriateness and 
strength. As stated previously, the primary study employed the NMPES which is psychometric
sound and has been used in similar studies in the past (Warshawsky et al., 2013b; Warshawsky et al., 2016). There is also a risk in this study for type I errors, or false positives due to nesting data. This occurs when data are collected from multiple individuals from the same group; the data are then considered “nested within that group” (O’Dwyer & Parker, 2014, p. 2). In this dataset, individual NMs will be nested within the hospitals. Hospital identification numbers will control for this in the analysis using restricted maximum likelihood (Kellar & Kelvin, 2013).

**Study Limitations**

The primary limitation for this study is its cross-sectional design. This type of approach captures data at one point in time and does not offer explanation for cause and effect (Creswell & Guetterman, 2019; Nardi, 2018). However, findings from this study will help to inform future research that may examine such phenomena in greater detail with a focus on causation. An additional limitation to the study is including only NDNQI members. Because the hospitals within the NDNQI are often pursuing accreditation from the American Nursing Credentialing Center (ANCC) it may not offer a full representation of all hospitals in the U.S.
References


doi.org/10.1016/j.mnl.2018.12.003


O’Dwyer, L. & Parker, C. (2014). *A primary analysis of nested data: Multiple level modeling in SPSS using an example from a REL study*. The National Center for Education Evaluation
and Regional Assistance, 1-12. Retrieved from:

empowerment of clinical nurse managers. *Journal of Nursing Administration, 44*(4), 226-
231. doi: 10.1097/NNA.0000000000000059


https://www.pewresearch.org/topics/generations-and-age/


doi:10.1111/jonm.12512

of Nursing Administration, 49*(7/8). doi: 1097/NNA.0000000000000769


https://www.pearson.com/english/versant/how/research.html


DEMOGRAPHICS QUESTIONNAIRE

Professional Experience, Education, Certifications:

Professional/Work Experience

1. How many years have you worked as a nurse? (if less than 1 year, enter 0)
2. How many years have you worked as a nurse manager? (if less than one year enter 0)
3. How many years have you worked as a nurse manager in your current position? (if less than one year, enter 0)
4. If less than one year, how many months have you been the nurse manager on you current unit?

What is your highest level of NURSING education?

a. PhD
b. MSN
c. BSN
d. ADN
e. Diploma nurse

What other degrees do you hold other than nursing degrees?

a. Bachelors
b. Masters
c. Higher

Do you have any leadership certifications?

a. No nursing leadership certification
b. Yes, Nursing leadership certification

Do you have any nursing certifications?

a. No nursing certification
b. Yes, Nursing certification

Personal Demographics

1. What is your age in years?
   • please write this in here
2. What is you gender?
   a. Male
   b. Female
   c. Prefer not to answer
3. What is your race?
   a. Asian/Pacific Islander
   b. Black/African American
   c. Hispanic/Latino
   d. White/Non-Hispanic
   e. Native American
   f. Other/mixed
   g. Prefer not to answer

Professional Experience, Education, Certifications:

What is your work experience?
1. How many years have you worked as a nurse? (if less than 1 year, enter 0)
2. How many years have you worked as a nurse manager? (if less than one year enter 0)
3. How many years have you worked as a nurse manager in your current position? (if less than one year, enter 0)
4. If less than one year, how many months have you been the nurse manager on your current unit?

What is your highest level of NURSING education?
1. Diploma nurse
2. ADN
3. BNS
4. MSN
5. DNP
6. PhD

What other degrees do you hold other than nursing degrees?
1. Bachelors
2. Masters
3. Higher

Do you have any Leadership certifications?
1. No nursing leadership certification
2. Yes, Nursing leadership certification

Do you have any nursing certifications?
1. No nursing certification
2. Yes, Nursing certification
# HOSPITAL LEVEL CHARACTERISTICS

*Instructions:* Participants are asked to answer the question that best describes their hospital/organization.

1. Does your organization have ANCC certification?
   - a. Yes
   - b. No

2. What is the “teaching” status of your organization?
   - a. Academic Medical Center
   - b. Teaching Hospital
   - c. Non-teaching Hospital

3. What is the size of your hospital/organization in bedsize?
   - a. <100 beds
   - b. 100-199 beds
   - c. 200-299 beds
   - d. 300-399 beds
   - e. 400-499 beds
   - f. ≥ 500 beds

### Workloads:

1. How many Full Time Equivalents (FTEs) do you manage?
2. How many employees report to you directly?
3. How many units do you manage?
NMPES SAMPLE QUESTIONS

Instructions:
Participants are asked to choose the answer that best answer that describes their current work environment as a nurse manager.

<table>
<thead>
<tr>
<th>*NMPES Subscales</th>
<th>*NMPES Sample questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture of patient safety</td>
<td><em>My nursing administrators encourage creativity and innovative solutions to problems.</em></td>
</tr>
<tr>
<td>Culture of meaning</td>
<td><em>I am able to translate the organization’s mission and goals to the front-line staff.</em></td>
</tr>
<tr>
<td>Culture of generativity</td>
<td><em>I have time to collaborate with front-line staff to develop solutions to the challenges we are experiencing.</em></td>
</tr>
<tr>
<td>Adequate resources</td>
<td><em>I have enough budgeted staff to meet operational demands.</em></td>
</tr>
<tr>
<td>Fair and balanced workload</td>
<td><em>The number of people who report to me is manageable.</em></td>
</tr>
<tr>
<td>NM-Physicians relationships</td>
<td><em>I have a physician partner who works with me to improve patient outcomes.</em></td>
</tr>
<tr>
<td>NM-director relationships</td>
<td><em>My director provides me with constructive feedback on my performance.</em></td>
</tr>
<tr>
<td>NM-staff relationships</td>
<td><em>My unit staff works with me to resolve patient care issues</em></td>
</tr>
</tbody>
</table>

*NOTE: The NMPES is proprietary measurement tool, therefore, the above questions are samples only and can be found in the publication listed below.

APPENDIX E: JOB SATISFACTION QUESTIONNAIRE
JOB SATISFACTION QUESTIONNAIRE

Instructions:
Participants are asked to choose the best answer.

A. How satisfied are you with your job as a nurse manager?
   1. Very satisfied
   2. Dissatisfied
   3. Somewhat dissatisfied
   4. Somewhat satisfied
   5. Satisfied
   6. Very satisfied

B. How likely are you to recommend the job of nurse manager to others?
   1. Very unlikely
   2. Unlikely
   3. Somewhat unlikely
   4. Somewhat likely
   5. Likely
   6. Very likely
APPENDIX F: CERTIFICATES OF CONTINUING EDUCATION FOR COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI) AND THE PROTECTION OF HUMAN SUBJECTS
COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)
COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

*NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for most recent quiz scores, including those on optional (supplemental) course elements.

- Name: Angela Keith (ID: 8701731)
- Institution Affiliation: University of Central Florida (ID: 405)
- Institution Email: angekeith@knights.ucf.edu
- Institution Unit: College of Nursing
- Phone: 904-865-6501

- Curriculum Group: Conflict of Interest
- Course Learner Group: Same as Curriculum Group
- Stage: Stage 1 - Stage 1

- Record ID: 36633430
- Completion Date: 14-May-2020
- Expiration Date: 15-May-2024
- Minimum Passing: 90
- Reported Score: 90

REQUARED AND ELECTIVE MODULES ONLY

<table>
<thead>
<tr>
<th>Module</th>
<th>DATE COMPLETED</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Conflicts of Interest Overview: Investigator Responsibilities, and COI Rules (COI-Basic) (ID: 10070)</td>
<td>14-May-2020</td>
<td>4/5 (80%)</td>
</tr>
<tr>
<td>Institutional Responsibilities as They Affect Investigators (COI-Basic) (ID: 15672)</td>
<td>14-May-2020</td>
<td>5/5 (100%)</td>
</tr>
</tbody>
</table>

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/7ce0380c3d-b146-45d6-8724-544d551bcb7a2-36633430

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-5920
Web: https://www.citiprogram.org
This is to certify that:

Angela Keith

Has completed the following CITI Program course:

Human Research
Human Subjects Research- Group 2. Social / Behavioral Research Investigators and Key Personnel
1 - Basic Course

Under requirements set by:

University of Central Florida

Verify at www.citiprogram.org/verify/78e463a526-9832-4704-954e-b5e98ceed7ff-36623429
COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2

COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Angela Keith (ID: 8701731)
- **Institution Affiliation:** University of Central Florida (ID: 405)
- **Institution Email:** angkeith@knights.ucf.edu
- **Institution Unit:** College of Nursing
- **Phone:** 9043653531

- **Curriculum Group:** Social and Behavioral Responsible Conduct of Research
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - RCR
- **Description:** This course is for investigators, staff and students with an interest or focus in Social and Behavioral research. This course contains text, embedded case studies AND quizzes.

- **Record ID:** 34453515
- **Completion Date:** 04-Dec-2019
- **Expiration Date:** 03-Dec-2022
- **Minimum Passing:** 80
- **Reported Score:** 92

### REQUIRED AND ELECTIVE MODULES ONLY

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<thead>
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<th>Module (ID)</th>
<th>Date Completed</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plagiarism (RCR-Basic) (ID: 15156)</td>
<td>04-Dec-2019</td>
<td>5/5 (100%)</td>
</tr>
<tr>
<td>Authorship (RCR-Basic) (ID: 16597)</td>
<td>04-Dec-2019</td>
<td>4/5 (80%)</td>
</tr>
<tr>
<td>Collaborative Research (RCR-Basic) (ID: 10596)</td>
<td>04-Dec-2019</td>
<td>4/5 (80%)</td>
</tr>
<tr>
<td>Conflicts of Interest (RCR-Basic) (ID: 16599)</td>
<td>04-Dec-2019</td>
<td>4/5 (80%)</td>
</tr>
<tr>
<td>Data Management (RCR-Basic) (ID: 16903)</td>
<td>04-Dec-2019</td>
<td>5/5 (100%)</td>
</tr>
<tr>
<td>Mentoring (RCR-Basic) (ID: 16602)</td>
<td>04-Dec-2019</td>
<td>5/5 (100%)</td>
</tr>
<tr>
<td>Peer Review (RCR-Basic) (ID: 19802)</td>
<td>04-Dec-2019</td>
<td>5/5 (100%)</td>
</tr>
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<td>Research Misconduct (RCR-Basic) (ID: 16604)</td>
<td>04-Dec-2019</td>
<td>4/5 (80%)</td>
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<tr>
<td>Introduction to RCR (RCR-Basic) (ID: 17009)</td>
<td>04-Dec-2019</td>
<td>3/3 (100%)</td>
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<tr>
<td>Research Involving Human Subjects (RCR-Basic) (ID: 13666)</td>
<td>04-Dec-2019</td>
<td>5/5 (100%)</td>
</tr>
</tbody>
</table>

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid independent Learner.


Collaborative Institutional Training Initiative (CITI Program)
Email: support@citiprogram.org
Phone: 888-529-9929
Web: [https://www.citiprogram.org](http://https://www.citiprogram.org)
This is to certify that:

Angela Keith

Has completed the following CITI Program course:

Social and Behavioral Responsible Conduct of Research (Curriculum Group)
Social and Behavioral Responsible Conduct of Research (Course Learner Group)
1 - RCR (Stage)

Under requirements set by:

University of Central Florida

Verify at www.citiprogram.org/verify/w1de7cb6d-a02c-4850-bb32-95a5677ae030-34453515
This is to certify that:

Angela Keith

Has completed the following CITI Program course:

Conflict of Interest (Curriculum Group)
Conflict of Interest (Course Learner Group)
1 - Stage 1 (Stage)

Under requirements set by:

University of Central Florida

Verify at www.citiprogram.org/verify/?w142ed758-eb09-4f4c-b3ce-02678651fd4a-36623430
# Faculty Advisor Review of Student Research

Faculty who supervise graduate student research are called Faculty Advisors (FAs). FAs play an important role in human subjects protections. The FA bears ultimate responsibility for the ethical conduct of research carried out by the student. The time and effort FAs dedicate to their students has a considerable impact on student projects, quality of data, and the time required for IRB approval.

The purpose of this form is to document faculty advisor approval and screening of submission materials for student-led research. This document is to be completed by the advisor and submitted by the student PI in section 6 of the study submission SmartForm in the IRB system.

## Study Title:
The influences of generational membership and practice environment on nurse managers' job satisfaction

## Student Investigator:
Angela Keith

## Faculty Advisor:
Nora Warshawsky

### 1. Qualifications of the Student Investigator (all items must be checked and described in the Protocol Section 250 Resources)
- The investigator has the qualifications to conduct the research
- The investigator has the resources to conduct the research (e.g., funding, time, access)
- The investigator has completed the required Human Subjects Protections training (i.e., CITI)

### 2. General Submission Requirements (check each item that has been reviewed and meets expectations of the advisor)
- All documents have been reviewed for clarity, consistency, and completeness.
- Protocol and overall study design are appropriate and well-reasoned.
  - The protocol accurately describes the research in a clear, consistent manner.
  - Where applicable, a distinction is made between procedures that are taking place solely for research purposes versus those procedures that are taking place regardless of research.
  - The appropriate Protocol document is used: HRP-503 Protocol for Expedited/Full Board studies, HRP-255 Request for Exempt Determination for Exempt Studies, or HRP-250 Request for Not Human Subjects Determination.
- The consent process is adequate. (Check if N/A)
  - The consent process is clearly stated in the appropriate Protocol document.
  - If elements of consent are withheld, a debriefing statement is included as part of the consent process.
  - A description of what types of personally identifiable information data is being collected and used for research along with how long the identifiers are maintained is listed.
  - If the research study involves children, there is a child assent process clearly stated in HRP-503 Protocol.
- The consent document(s) or script(s) are complete and written according to current UCF templates (HRP-254 for Exempt Studies, HRP-502/503b for Expedited/Full Board studies). (Check if N/A)
  - Informed consent begins with a concise and focused presentation of the key information that is most likely to assist a prospective subject or legally authorized representative in understanding the reasons why one might or might not want to participate in the research. This part of the informed consent is presented in a way that facilitates comprehension.
  - The study purpose and procedures are presented in a clear, concise manner. Information in the consent document is consistent with what is listed in the Protocol.
  - Signature blocks are removed for minimal risk studies or, only the appropriate signature block is retained. Parental Consent for Child is used where appropriate.
- Recruitment method and materials are consistent with that is described in the appropriate Protocol document and are uploaded for review. (Check if N/A)
- Data collection instruments are listed in the protocol and are uploaded for review.
- Written material to be seen or heard by subjects (including screenshots of any simulations), if any, are uploaded for review.
- Provisions for vulnerable subject populations (e.g., prisoners, children, pregnant women), if any, are described in the appropriate Protocol document. (Check if N/A)
Provisions for privacy and confidentiality are adequate.
Data management listed in HRP-503 Protocol section 17 or HRP-255 section 3.2 fully describes how and for how long the data will be stored, distinguishing identifiable data management from de-identified data. Note: storage length for de-identified and otherwise unidentified data is 5 years per UCF policy. The protocol sets the length of time for storage of identifiable data, links, recordings, etc. In general, your goal should be to store identifiable or linked data for as short of time as practical. If the study design warrants longer storage time periods, protocol specific justification is provided.

Other:

**3 REVIEW COMMENTARY** (provide any additional information regarding this submission that may be pertinent to IRB review)

This study is using previously collected, de-identified data for secondary analysis. Variables of interest include hospital characteristics of size, teaching status and ANCC status, nurse manager demographics, nurse manager practice environment scale and job satisfaction.

By signing this document, the faculty advisor is attesting to having conducted adequate review of submission materials and finds them to be complete and accurate. Permission is granted to the investigator to submit to the IRB.

**Faculty Advisor Signature:** Nora Warshawsky, PhD, RN, FAAN  
**Date:** 05082020

*digital signature with encryption or physical signature is required.*
APPENDIX H: INTERNAL REVIEW BOARD (IRB), UNIVERSITY OF CENTRAL FLORIDA (UCF)
NOT HUMAN RESEARCH DETERMINATION

May 20, 2020

Dear Angela Keith:

On 5/20/2020, the IRB reviewed the following protocol:

<table>
<thead>
<tr>
<th>Type of Review</th>
<th>Initial Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title of Study</td>
<td>The Influences of Generational Membership, Practice Environment, on Nurse Manager Job Satisfaction: A Quantitative Research Study</td>
</tr>
<tr>
<td>Investigator</td>
<td>Angela Keith</td>
</tr>
<tr>
<td>IRB ID</td>
<td>STUDY00001796</td>
</tr>
<tr>
<td>Funding</td>
<td>None</td>
</tr>
<tr>
<td>Grant ID</td>
<td>None</td>
</tr>
</tbody>
</table>
| Documents Reviewed | • HRP-250 for Angela KEITH document number 2, Category: IRB Protocol;  
|                 | • KEITH Proposal , Category: IRB Protocol;  
|                 | • Nurse Manager Survey 2017, Category: Survey / Questionnaire;  
|                 | • Variables for Generations and NM job satisfaction, Category: Other; |

The IRB determined that the proposed activity is not research involving human subjects as defined by DHHS and FDA regulations.

IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities are research involving human in which the organization is engaged, please submit a new request to the IRB for a determination. You can create a modification by clicking Create Modification / CR within the study.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Adrienne Showman  
Designated Reviewer
Curriculum Vitae

Angela C Keith, MSN, RN

Education
Bachelor of Science in Nursing Jacksonville University 1993
Jacksonville, Florida

Master of Science in Nursing 2016
Jacksonville, Florida

Doctoral Program Full-time, University of Central Florida (expected graduation, May of 2021)

Professional Licensure and certifications

Registered Nurse for the state of Florida 1993-current
Registered Nurse for the state of Georgia 2012-current
Advanced Cardiac Life Support (ACLS) 1993-2018
Basic Life Support (BLS) 1990-current

Publications


Professional Experience

Mayo Clinic, Jacksonville 2010-2014 full-time
Surgical Intensive Care Unit Staff RN

Responsibilities:
- care of the critically ill medical and surgical patient
- care of the immediate postoperative patient who requires ICU
- care of the brain surgery and stroke patient
- care of the open-heart patient pre- and post-surgery
- care of the heart transplant patient
- care of lung transplant patient
- care of the liver and kidney transplantation patient who requires ICU
- management of ventilators
- management of the patient on life support
- management of Continuous Renal Replacement Therapy (CRRT)
- management of vasoactive drips
- proficiency at CPR and ACLS
- management of Intracranial Pressure catheters and monitors (ICP)
- management of hemodynamic monitoring lines
- proficiency at managing pulmonary chest tubes and mediastinal tubes
- management of the medically induced coma patient
- management of the therapeutic hypothermia patient
- bedside bronchoscopy procedure assistance for the medical team
- conscious sedation for bedside procedures
- management of patients with Ventricular Assist Devices (VAD)
- assist with care of the patient requiring Extracorporeal Membrane Oxygenation (ECMO)

St. Vincent’s Medical Center of Jacksonville 2007-2010 PRN then to full-time
Heart and Vascular Unit staff RN

Responsibilities:
- care of the pre- and post-procedural cardiac catheterization patient
- care of the Percutaneous-Transluminal Coronary Intervention (PTCA)
- care of the cardioversion patient, pre, intra, and post procedure
- care of the myocardial infarction patient (with and without ST-Segment Elevations)
- care of the vascular surgery patient
- management of the Intra-Aortic Balloon Pump patient
- care of the cardiac arrest patient
- care of the pre-operative Coronary Artery Bypass Graft (CABG) patient
- proficiency at starting and maintaining intravenous access
- management of vasoactive medications and drips

Jacksonville Center for Endoscopy/ Borland Grover Clinic 2007-2009 PRN
Staff RN paranesthesia care

Responsibilities:
- care of the pre- and post-procedure endoscopic patient
- conscious sedation and care of the intra-procedural patient
- post procedural care of the patient emerging from sedation and anesthesia
- airway management
- post procedural patient education

St. Vincent’s Medical Center of Jacksonville 1998-2005 part-time Post Anesthesia Care Unit
Staff RN and relief evening charge RN

Responsibilities:
- care of the immediate postoperative patient ICU and non-ICU patients
- care of the intubated patient in need of extubation
- proficient airway maintenance
- proficient at wound care
• proficient at pain management and narcotic administration
• charge nurse duties such as: staffing for the day, staffing for the next day, patient-nurse assignments, scheduling, staff evaluations, patient care

Tallahassee Community Hospital, Hospital Corporation of America 1997-1998 full-time
Medical Intensive Care Unit staff RN

Responsibilities:
• care of the Medical Intensive Care Unit patient
• standard staff nursing responsibilities
• member of the code team/responsible assist with codes throughout the hospital

Seton Medical Center/Daughters of Charity, Austin, Texas 1995-1997 full-time
Post Anesthesia Care Unit/Outpatient Surgery staff RN

Responsibilities:
• care of the immediate postoperative patient coming out of the operating room
• scheduled cardioversions (pre, intra and post-procedural care)
• evening shared charge nurse
• responsible for staffing the evening, patient/nurse assignments, staff reviews
• Quality Assurance Leader for the two departments

Alachua General Hospital Gainesville, Florida 1993-1995 SICU full time
Staff RN SICU

Responsibilities:
• Care of the critically ill postoperative patient
• Care of the postoperative open-heart patient (CABG and Valve replacement)
• Care of the postoperative AAA patient
• Care of the brain surgery patient
• Assist with burr holes placement in patients with increased ICP

Certifications and Competencies

ACLS certified          1993-current
BLS certified           1993-current
Ventricular Assist Device training and competency 2010
Collaborative Institutional Training Initiative   2018-current

Academic Service

Jacksonville University 2016-2017
Contracted Adjunct Profession
Clinicals for Baccalaureate Nursing Students
Responsibilities:

- Oversee clinical practice for BSN students
- Provide feedback and guidance in patient care and professionalism
- Train and reinforce the clinical skills of the students
- Provide feedback and grades for mapping papers on diseases
- Provide feedback and grades for care plans
- Grade students’ overall performance for clinicals for the semester

Florida State College at Jacksonville, Florida 2000-2001
Adjunct professor for Associate Degree Nursing Students
Health Assessment Class

Responsibilities:

- Assist the professor with students in the laboratory for health assessment
- Overseeing and assisting students in the clinical setting
- Provide tutoring to students during and after class time

Research Focus

2018-current Generational studies of nurses and nurse managers
2017-current Millennial staff nurses’ job satisfaction, retention, recruitment
2018-current Workforce: job satisfaction, retention, and recruitment of Nurse managers
2017-current Retention of staff nurses

Publications Pending Approval

- Journal of Nursing Management: Factors that influence job satisfaction among millennial staff nurses an integrated literature review submitted July 2020 (currently under review)
- Journal of Nursing Administration: Factors that influence nurse manager job satisfaction an integrated literature review submitted August 2020 (currently under review)
- Future submissions October 2020 to the Journal of Nursing Administration Quarterly: The Influences of Generational Membership and Practice Environment on Nurse Manager Job Satisfaction a cross-sectional, quantitative correlation study

Membership in Professional Organizations

2018-current Golden Key International Honor Society
2017-current Southern Nursing Research Society (SNRS)
2016-current Sigma Theta Tau International Honor Society of Nursing
2015-current American Association of Critical Care Nurses (AACN)
2015-current American Association of Nurses (ANA)
2015-current Florida Nurses Association (FNA)
2012-2014 International Transplant Nurses Society (ITNS)

Professional Activities
2010-2014  Shared Governance Committee Secretary/Mayo Clinic Florida, SICU  
2003-2005  Quality Improvement officer PACU/St. Vincent’s Medical Center, Florida  
1995-1997  Quality Improvement officer PACU Seton Medical Center, Texas  

Personal Life: Community and Volunteer Service  

2005-2007  Lived in Tunisia, North Africa, assisted with the poor and studied languages (Arabic and French)  
1998-2001  World Relief and Lutheran Services, volunteer  
Responsibilities: helping to place refugees from Bosnia, Serbia, Sudan, Vietnam and Burma in apartment homes and communities. The volunteer assists refugees with home placement, full set up of their new housing, government papers and processing, driving to medical appointments, and assisting with language schools and gaining employment. Also, assists in collection of furniture and household supplies as well as clothing for those in need.  

Personal and Professional References  

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