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A study of job satisfaction and turnover intention among acute care nurses working in rural and urban settings

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Abstract

In Canada, a close look at the nursing workforce shows a decline due to limited supply and increasing demand resulting in a looming shortage in the near future. Retaining nurses' is a key strategy to overcome the shortage by limiting nurses' turnover. Nurses' job dissatisfaction is the most significant predictor of turnover intention and is associated with undesired outcomes such as nurses' absenteeism, burnout, low service quality, and patient dissatisfaction. The differences in factors affecting job satisfaction between rural and urban nurses have not been fully studied. This study aimed to identify the differences and similarities in the extrinsic and intrinsic factors that influence job satisfaction among nurses in urban and rural southern Ontario; to determine the impact of job satisfaction on nurses' turnover intention among nurses working in rural and urban settings, and to develop an instrument to measure job satisfaction for nurses working in acute care settings. A non-experimental, cross-sectional correlational design was used. Data were collected between May 2019 and July 2019 in southern Ontario. A non-proportional stratified sampling technique was used for recruiting the sample and participants were given the option to respond either online or by mailed survey. A total of 349 participants completed the study survey which included the newly developed Acute Care Nurses Job Satisfaction Scale and the Anticipated Turnover Scale. The results showed no significant difference between rural and urban nurses in either overall job satisfaction or turnover intention. Peer support/work conditions, quality of supervision, and achievement/job interest/responsibility were significant overall predictors of job satisfaction in rural and urban settings. There was a significant difference between rural and urban nurses in terms of satisfaction from benefits and job security. Moreover, the

nurses' job satisfaction levels in both settings correlated negatively with their turnover intention. The Acute Care Nurses Job Satisfaction Scale demonstrated acceptable psychometric properties. This study confirmed that several extrinsic and intrinsic factors are associated with nurses' job satisfaction in rural and urban settings. Developing strategies that improve satisfaction by modulating these specific factors may improve nurses' job satisfaction, reduce turnover and ultimately positively impact patient care.

Keywords: job satisfaction, acute care nursing, rural, urban, turnover intention, Herzberg's two-factor theory

Summary for Lay Audience

In Canada, the predicted nursing shortage is a potentially significant problem that could negatively impact safe patient care. Nurses' retention is one of the key strategies to overcome this shortage by limiting the loss of nurses due to job turnover. Low job satisfaction is associated with high nurses' turnover. It is also associated with lower patient satisfaction and poorer quality health services. Working in rural hospitals can be different than working in urban hospitals in terms of availability of resources, type of patients, workload and service provided, hence nurses in these two settings may be expected to have different factors determining their job satisfaction. In this study, surveys were mailed to a sample of nurses working in hospitals located in southern Ontario, aiming to collect data about their job satisfaction and turnover intention. After data analysis, no differences in job satisfaction and turnover intention were found between nurses working in rural and urban areas. However, peer support/work conditions, quality of supervision, and achievement/job interest/responsibility were all found to be related to nurses' job satisfaction. Also, rural nurses were more satisfied with benefits and job security compared to urban nurses. Finally, higher nurses' job satisfaction was related to lower turnover intention. The findings of this study can help in tailoring plans for improving nurses' job satisfaction and reducing turnover intention based on the working context.

Co-Authorship Statement

I, Yasin M. Yasin, hereby declare that this dissertation includes three integrated manuscripts that evolved as a result of joint research and collaboration with my supervisor and advisory committee. In the three manuscripts, the main contributions were made by the first author in terms of the key idea, methodology, research ethics applications, conduction of the literature review, data collection, data analysis, and writing the manuscript. The contribution of the co-authors, Dr. Michael S. Kerr, Dr. Carol A. Wong, and Dr. Charles H. Bélanger was within the provision of supervision, guidance, and intellectual and editorial support in writing the multiple iterations of the manuscripts.

Dedication

This dissertation is in loving memory of my father, Mohammad Yasin who I think would have been proud of my accomplishment. Although you are no longer in this world, your memories continue to regulate my life. I will make sure your memory lives on as long as I live. I also dedicate this dissertation to my Mum, who always believed in me and encouraged me to follow my dreams.

I also dedicate this dissertation to my daughter Rahaf Yasin who began this journey with me and passed away before celebrating this accomplishment. May you find peace and happiness in Paradise!

As a final word, I dedicate my dissertation work to my wife Areej for her love, endless support, encouragement and sacrifices. For my children, Lujain, Yara, Mohammad and Warrd, you have made me stronger, better and more fulfilled than I could have ever imagined. I love you to the moon and back.

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Chapter 1:

Factors Affecting Job Satisfaction and Turnover Intention: A Comparison Study of Acute Care Nurses Working in Rural and Urban Communities

1.1. Introduction

There is a global increase in the demand for healthcare services as the number of people seeking care and the complexity of care required expands (Tencer, 2016). This implies an increasing demand for healthcare facilities and the need for a larger workforce. Nurses represent one of the most significant pillars of hospital health care and are the largest workforce component of acute health care facilities (Rosseter, 2019). It has therefore been predicted that significantly more nurses will be required as the demand for health services increases.

Several global reports indicate a limited supply of nurses to cope with this predicted shortage. For example, the United Kingdom census of 2017 showed a shortfall in the number of nurses replacing the ones leaving the profession (Nursing and Midwifery Council, 2017). In Australia, a future shortage of about 80,000 nurses is estimated by the year 2025 (Organisation for Economic Co-operation and Development, 2016). Similarly, The American Nurses Association (2019) estimates that the United States health service would suffer from a deficit of more than 1 million nurses by 2022. In Canada, the supply rate of the nurses' workforce has declined from 2.2% in 2014 to 1% in 2018 (Canadian Institute for Health Information [CIHI], 2019). The CHI report is consistent with other recent reports that indicate a growing labor shortage in nursing

despite an increase in job vacancies (Rumley, 2019). A considerable proportion of Canadian rural nurses are 45 years or older and their future career trajectories indicate a possible shortage in nurses in the short-run (MacLeod et al., 2017). Among Canadian provinces, Ontario has the lowest ratio of registered nurses (RN) to population with only 690 RNs per 100,000 Ontarians while the Canadian average is 831 RN per 100,000 Canadians (CIHI, 2019). Rural nurses represent only 6.4% of the total number of nurses working in Ontario and typically serve larger populations proportion compared to urban nurses (CIHI, 2019). Thus, there is a high demand for nurses predicted in Ontario (Zych, 2018).

To help overcome the high demand and limited supply of nurses, lowering nurses' job turnover becomes a crucial human resource strategy. Retaining nurses is not merely maintaining staffing levels; it also preserves intellectual capital and maintain the quality of health service provided (Lockhart, 2019). According to Hayes et al., (2012), high nurse turnover has resulted in poor patient outcomes, increased costs to the health sector, and decreased quality of nursing care, and thus must be reduced by improved nurse retention.

The negative association between nurses' job satisfaction and turnover intention is well documented in the literature (Ramoo, Abdullah, & Piaw, 2013; Sabanciogullari & Dogan, 2015). Several scholars have demonstrated the significant effect of low job satisfaction on turnover intentions (O'Brien-Pallas, Murphy, Shamian, Li, & Hayes, 2010; Stewart et al., 2011). Furthermore, low job satisfaction had been linked to poor patient satisfaction (Lu, Zhao, & While, 2019) and low health service quality (Asif, Jameel, Hussain, Hwang, & Sahito, 2019). Therefore, improving job satisfaction may increase nurses' retention, and improve the quality of service and patients' satisfaction.

Nurses working in urban and rural settings face varying challenges due to the difference between rural and urban hospitals in terms of case complexity, workload and hospital size (Baernholdt & Mark, 2009; Bratt, Baernholdt, & Pruszynski, 2014). Rural nurses in Ontario are more likely to be female, older, less formally educated compared to their urban peers (Paterson, Place, & MacLeod, 2014), Rural nurses have a more generalized scope of practice as they work more independently and often provide health care that is usually provided by other health providers in urban areas such as midwives (Scharff, 2010; Winters, 2013). Moreover, rural nurses had significantly lower stress levels regarding staffing and the physical working environment compared to urban nurses (Bratt et al., 2014).

Nurses working in rural areas may have different factors affecting job satisfaction than nurses working in urban areas. Different study settings can have different impacts based on nurses' employment preferences. A gap exists in the literature regarding the similarities and differences in factors affecting nurses job satisfaction in these settings (Roberge & Lavoie, 2012). This study aims to gain insight into the differences and similarities between rural and urban nurses in terms of factors affecting job satisfaction. The extrinsic and intrinsic factors under study were derived from Herzberg's two-factor theory (Herzberg, 1966; Herzberg, Mausner, & Snyderman, 1959/2010). The study also aims to assess the relationship between nurses' job satisfaction and turnover intention for those working in rural and urban southern Ontario. A final secondary aim of this study was to develop a new instrument that assesses the job satisfaction of acute care nurses.

1.2. Background

Job satisfaction is a highly subjective phenomenon, that is complex and multifaceted (B. Hayes, Bonner, & Pryor, 2010; Liu, Aungsuroch, & Yunibhand, 2016). Nursing job satisfaction has been defined as "… a multidimensional affective concept that is an interaction of an employee's expectation, values, environment, and personal characteristics and it is recognized that satisfiers and dissatisfiers are dynamic and relative to the employee" (Misener & Cox, 2001, p. 93). Factors influencing job satisfaction include extrinsic and intrinsic factors. Extrinsic factors are job context factors such as working condition and they should be maintained at the employees' expectation level to prevent job dissatisfaction. Intrinsic factors are the job content factors such as job advancement and they are responsible for long term enhancement in job satisfaction; however, lack of these factors may be less likely to lead to job dissatisfaction (Herzberg et al., 1959/2010). Job dissatisfaction may lead to negative outcomes like absenteeism, burnout, turnover, and intention to leave (Lu, Barriball, Zhang, & While, 2012).

Furthermore, differences in resource availability and expectations of extrinsic and intrinsic factors based on rural/urban contexts could affect nurses' perceptions of job satisfaction. Job satisfaction depends on multiple factors such as the job context, the nurses' subjective experiences, and other factors, including demographic variables (Bae, 2016; Baernholdt & Mark, 2009; Bratt et al., 2014; Penz & Stewart, 2008). Furthermore, community satisfaction, psychological job demands, and the availability of resources are some of the significant predictors of job satisfaction among Canadian rural nurses (Penz, Stewart, Arcy, & Morgan, 2008).

Turnover intention is a concept that has been expressed in many forms (Hayes et al., 2012). For instance, nurse turnover intention was described by Flinkman and Salanterä, (2015) as a sequential process that starts by nurses leaving the hospital unit, followed by abandoning the entire hospital and ultimately giving up the nursing profession. Other scholars address turnover from the perspective of leaving the hospital unit/ward or just moving to another health service facility (Takase, 2010). There is ample research evidence that a positive correlation exists between job dissatisfaction and nurses' intention to end their current employment (Ramoo et al., 2013; Sabanciogullari & Dogan, 2015). In addition, high nurse turnover has been associated with poor patient outcomes, increased costs to the health sector, and decreased quality of nursing care (Hayes et al., 2012).

In Canada, higher turnover rates are found to be related to low job satisfaction in both rural and urban studies (O'Brien-Pallas et al., 2010; Stewart et al., 2011; Zeytinoglu et al., 2007). Identifying the different job context (i.e. extrinsic) and job content (i.e. intrinsic) factors that either improve job satisfaction or decrease job dissatisfaction in rural and urban work settings is essential to developing the most effective strategies to enhance job satisfaction and lower nurses' turnover. An examination of factors influencing job satisfaction among nurses in different settings could help identify unique setting-specific differences in job satisfaction. An extensive review of the literature revealed that no such study has been conducted in Canada, hence the need for this study.

1.3. Theoretical Framework

Frederick Herzberg and colleagues developed their two-factor job satisfaction theory based on the assumption that people are motivated by the desire to meet their

needs (Herzberg et al., 1959/2010). According to Herzberg (1959/2010), the original study that led to the development of the theory was conducted using the critical incident technique. Based on the factor's impact on participant feelings, Herzberg categorized the incidents into satisfying and dissatisfying (Herzberg et al., 1959/2010). The satisfying incidents represented situations with positive feelings (i.e., job satisfaction), while the dissatisfying incidents represented situations with negative feelings (i.e., job dissatisfaction) (Herzberg et al., 1959/2010).

Herzberg theorized that job dissatisfaction and job satisfaction are at least partially independent of each other and affected by two different sets of factors (Herzberg, 1966; Herzberg et al., 1959/2010). The first set of factors were related to the job context (extrinsic factors). Herzberg referred to extrinsic factors as hygiene or maintenance factors. These factors were reported when describing incidents of job dissatisfaction. Extrinsic factors included company policy and administration, supervision, benefits, interpersonal relations, working conditions and job security (Herzberg et al., 1959/2010). The second set of factors was related more to job content (intrinsic factors). Herzberg referred to intrinsic factors as motivators or satisfiers. These factors were reported when describing incidents of job satisfaction (Herzberg, 1966; Herzberg et al., 1959/2010). Motivating factors included achievement, recognition, interest in work itself, responsibility, advancement, and growth.

This study used Herzberg's two-factor theory as a foundation to explore whether a difference exists between urban and rural nurses in terms of extrinsic and intrinsic factors that may influence their job satisfaction and turnover intention. Studying extrinsic and intrinsic factors and their impact on job satisfaction in rural and urban areas will help

identify the possible precursors to job satisfaction and job dissatisfaction in different settings.

1.4. Significance

There are differences in nursing unit characteristics and the work environment between rural and urban hospitals that may affect nurses' job satisfaction and turnover intentions (Baernholdt & Mark, 2009). Nurse's job satisfaction and intention to leave have been shown to be positively associated with the quality of the work environment (Goh & Lopez, 2016). Specifically, the lack of equipment and inadequate numbers of nursing staff could have a negative impact on rural health workers' job satisfaction compared to their urban counterparts (Tran, Van Hoang, & Nguyen, 2013). Furthermore, nurses with a stated preference for rural community lifestyles tend to have higher job satisfaction in rural areas (Molinari & Monserud, 2008; Penz & Stewart, 2008), but there are limitations in job context (such as availability of resources) and job content (such as advancement) among nurses working in a rural area which could affect their job satisfaction and intention to leave.

Herzberg's two-factor theory has been used extensively to examine nurses' job satisfaction (LaMarche & Tullai-McGuinness, 2009; Swallow, 2012; Thomas, 2015; Zahaj, Saliaj, Metani, Nika, & Alushi, 2016). It is a useful theory that can provide a unique and comprehensive description of the factors that affect nurses' job satisfaction. This theory has been applied in studies of job satisfaction in different types of workers in different economic and geographic areas; however, the utilization of this theory has been very limited in Canadian nursing research.

In summary, a gap exists in the literature regarding the differences in extrinsic and intrinsic factors that affect nurses' job satisfaction in rural and urban areas (Roberge, 2009). This study seeks to fill this gap in knowledge. The study findings may help in developing strategies based on contextual perspectives to enhance job satisfaction and reduce nurses' turnover. As far as in known, this study is the first survey in Canada comparing urban and rural nurse job satisfaction and linking it to their intention to leave their jobs. The study would contribute to the growing body of nursing knowledge by analyzing factors that influence nurses' job satisfaction in urban and rural areas.

1.5. Purpose of the Study

The purpose of this study was to identify the differences and similarities in extrinsic and intrinsic factors that influence job satisfaction among nurses in urban and rural southern Ontario, as well as determine the impact of job satisfaction on nurses' intention to leave in rural and urban settings. A secondary purpose was to develop a valid instrument that measures job satisfaction among acute care nurses utilizing Herzberg's two-factor theory as a theoretical framework.

In order to achieve this purpose, the following research questions were used to guide the study:

1. Is there is a difference in job satisfaction level between acute care nurses working in rural and urban settings?
2. Is there is a difference in turnover intention level between acute care nurses working in rural and urban settings?

3. Are there differences in extrinsic and intrinsic factors that influence job satisfaction among nurses working in urban and rural southern Ontario?
4. What is the impact of job satisfaction on nurses' turnover intention among nurses working in rural and urban settings?

1.6. Methodology

A non-experimental descriptive correlational cross-sectional survey design was used to determine the factors that contribute to nurses' job satisfaction. Specifically, the link between each of the extrinsic factors and intrinsic factors with nurses' job satisfaction was critically examined. Furthermore, the relationship between nurses' job satisfaction and turnover intention was examined.

1.7. Chapters Overview

This dissertation follows an integrated article format whereby three chapters resulted in three separate manuscripts as regulated by the School of Graduate and Postdoctoral Studies at Western University, London, Ontario. Chapters 2, 3, and 4 are articles submitted for publication in relevant peer-reviewed journals. Chapter 5 provides an integrated summary of the dissertation work.

Chapter 2 is entitled "***Factors affecting nurses' job satisfaction in rural and urban acute care settings: A PRISMA systematic review***." This chapter is the first of the three articles and provides a systematic literature review of factors associated with nurses' job satisfaction in acute care settings. Furthermore, reported differences and similarities in job satisfaction factors between rural and urban settings were explored. In this manuscript, Herzberg's two-factor theory was used as a framework to analyze and

categorize the findings. The findings of this paper informed the development of the Acute Care Nurses Job Satisfaction Scale (ACNJSS) and thus established the basis of the empirical testing of factors affecting acute care nurses' job satisfaction in rural and urban settings.

Chapter 3 is entitled "***Development and Testing of an Acute Care Nurses' Job Satisfaction Scale (ACNJSS)***." In this manuscript an overview of the development and the psychometric testing and analysis of the Acute Care Nurses Job Satisfaction Scale (ACNJSS) is presented. The psychometric properties tested in this study suggested that the ACNJSS demonstrated acceptable reliability and validity. The findings in this manuscript were essential for identifying and testing the factors associated with acute care nurses' job satisfaction in the third manuscript.

Chapter 4 is entitled "***Factors Affecting Job Satisfaction Among Nurses Working in Rural and Urban settings***". In this manuscript, an empirical study was carried out to explore the factors associated with nurses' job satisfaction in rural and urban southern Ontario. This manuscript was designed to answer the main thesis research questions. Research methods with results and discussion are presented.

Chapter 5 is entitled "***Integrated summary and its implications***." In this chapter an integrated summary of the research findings as identified in the three articles in this dissertation is provided. The implications for nursing research, policy, education, and practice are also presented.

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Chapter 2:

Factors affecting nurses' job satisfaction in rural and urban acute care settings: A PRISMA systematic review[1]

2.1. Introduction

According to the World Health Organization (WHO), there is a worldwide shortage of healthcare workers. Furthermore, health workforces are aging, and the supply cannot overcome the demand (J. Campbell et al., 2014). Nurses are an essential component of the health workforce. Reducing nurse turnover may help in limiting the impact of low supply. Job dissatisfaction found to be the primary predictor of nurses' turnover (Nei, Snyder, & Litwiller, 2015).

Low job satisfaction (i.e. job dissatisfaction) may lead to undesired workplace outcomes such as absenteeism, burnout, and increased turnover intention (Lu et al., 2012). Job satisfaction is a highly subjective phenomenon and is therefore complex and multifaceted (B. Hayes et al., 2010; Liu et al., 2016). A growing body of evidence links several factors to nurses' job satisfaction in different working settings and different countries (Derby-Davis, 2014; LaMarche & Tullai-McGuinness, 2009; Thomas, 2015).

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Previous reviews found that there are differences between factors affecting nurses' job satisfaction depending on clinical settings (Utriainen & KyngÄS, 2009). Roberge and Lavoie (2012) found that different demographic variables can affect nurses' job satisfaction. Previous studies indicate that there are possible differences in factors affecting nursing job satisfaction in different practice contexts (Baernholdt & Mark, 2009; Ndiwane, 2003).

2.2. Background

Nursing job satisfaction has been defined as "… a multidimensional affective concept that is an interaction of an employee's expectation, values, environment and personal characteristics and it is recognized that satisfiers and dissatisfiers are dynamic and relative to the employee" (Misener & Cox, 2001, p. 93). Although other job satisfaction theories exist, Herzberg's two-factor theory can provide a framework to analyze the findings from literature reviews. For instance, N. Campbell, McAllister, and Eley (2012) used Herzberg's theory to guide the analysis of their literature review assessing motivation in recruitment and retention of rural and remote allied health professionals. We will use a similar approach in this review applied to job satisfaction.

According to Herzberg's theory, the many factors influencing job satisfaction can be classified as either extrinsic or intrinsic factors (Herzberg et al., 1959/2010). Extrinsic factors include contextual factors such as working conditions, relationships at work, salary and working hours. Although high investment in these factors may enhance job satisfaction, the impact is believed to be only temporary, and the main effect of these factors is to prevent job dissatisfaction (Herzberg et al., 1959/2010). In contrast, intrinsic factors are related more to job content and include recognition, growth, responsibility and

the nature of the work itself. Intrinsic factors can result in long-term enhancement of job satisfaction, but their absence may be less likely than that of extrinsic factors to lead to job dissatisfaction (Herzberg et al., 1959/2010). Herzberg also called these factors motivators as they were presumed to improve job satisfaction.

Herzberg argued that extrinsic factors, which he also referred to as hygiene factors, influence work attitudes only when they fall below an employees' acceptable level (Herzberg, 1966; Herzberg et al., 1959/2010). According to Herzberg, extrinsic factors should be maintained at or above the minimum acceptable level to create the optimum conditions for intrinsic factors to work and improve job satisfaction (Herzberg, 1966; Herzberg et al., 1959/2010). In other words, extrinsic factors support the structure of employees' jobs, while intrinsic ones help employees to reach their self-actualization, which ultimately motivates them to do their work.

We found several reviews of factors related to nurses' job satisfaction carried out over the past 20 years (B. Hayes et al., 2010; Li et al., 2018; Lin, Viscardi, Viscardi, & McHugh, 2014; Lu et al., 2012; Lu, While, & Louise Barriball, 2005; Maqbali, 2015; Utriainen & KyngÄS, 2009). However, there has been no systematic assessment of the differences and similarities between job satisfaction for nurses practicing in acute care settings in rural and urban areas. Differences in extrinsic and intrinsic factors and expectations that are related to the context (rural or urban) may affect nurses' job satisfaction. Therefore, our research question used to guide the study was: What are the factors associated with job satisfaction for acute care nurses working in rural or urban areas?

2.3. The review

2.3.1. Aims

The main purpose of this study was to provide a systematic review of research assessing the factors influencing acute care nurses' job satisfaction and to analyze the findings using Herzberg's theory of job satisfaction. The study also aimed to identify differences and similarities in the factors affecting the job satisfaction of nurses working in rural and urban settings.

2.3.2. Design

We used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement to report and examine study biases systematically. The PRISMA statement is a recognized method of reporting systematic reviews that makes use of a 27-items checklist developed for transparent reporting of research findings (Liberati et al., 2009).

2.3.3. Search methods

The search strategy and database selection were developed based on consultation with a nursing librarian. Six electronic databases were searched to find scholarly papers published in peer-reviewed journals between January 1998 and June 2018. Only English language papers were included in this review. The databases used in this review were CINAHL, SCOPUS, Academic Search Complete, EMBASE, PsycINFO and MEDLINE. We used a set of keyword strings that includes the following terms and truncated words: Nurs*, job satisfaction, job dissatisfaction, rural or urban.

2.3.4. Inclusion and exclusion criteria

We searched primary quantitative research articles published in English between January 1998 and June 2018. Healthcare has undergone tremendous change over the last decade. Nurses' working environments have been affected by this change. New technology as well as economic and demographic changes shape the challenges of health service delivery. The expectations and demands of nurses are likely to be affected by these changes. Analysis of the studies conducted in this period may improve understanding of changes in the factors affecting nurses' job satisfaction. We, therefore, excluded studies carried out before 1998.

We restricted this review to acute care settings as these settings include the majority of the nurse workforce. This restriction provides a level of cross-area consistency for comparison purposes between rural and urban areas. Acute care nurses are often challenged to make complex decisions in a fast-paced setting, work for long hours and in shifts, and they are typically faced with high patient turnover (B. Hayes et al., 2010). This experience may result in a different set of factors affecting their job satisfaction compared to nurses working in other types of care settings.

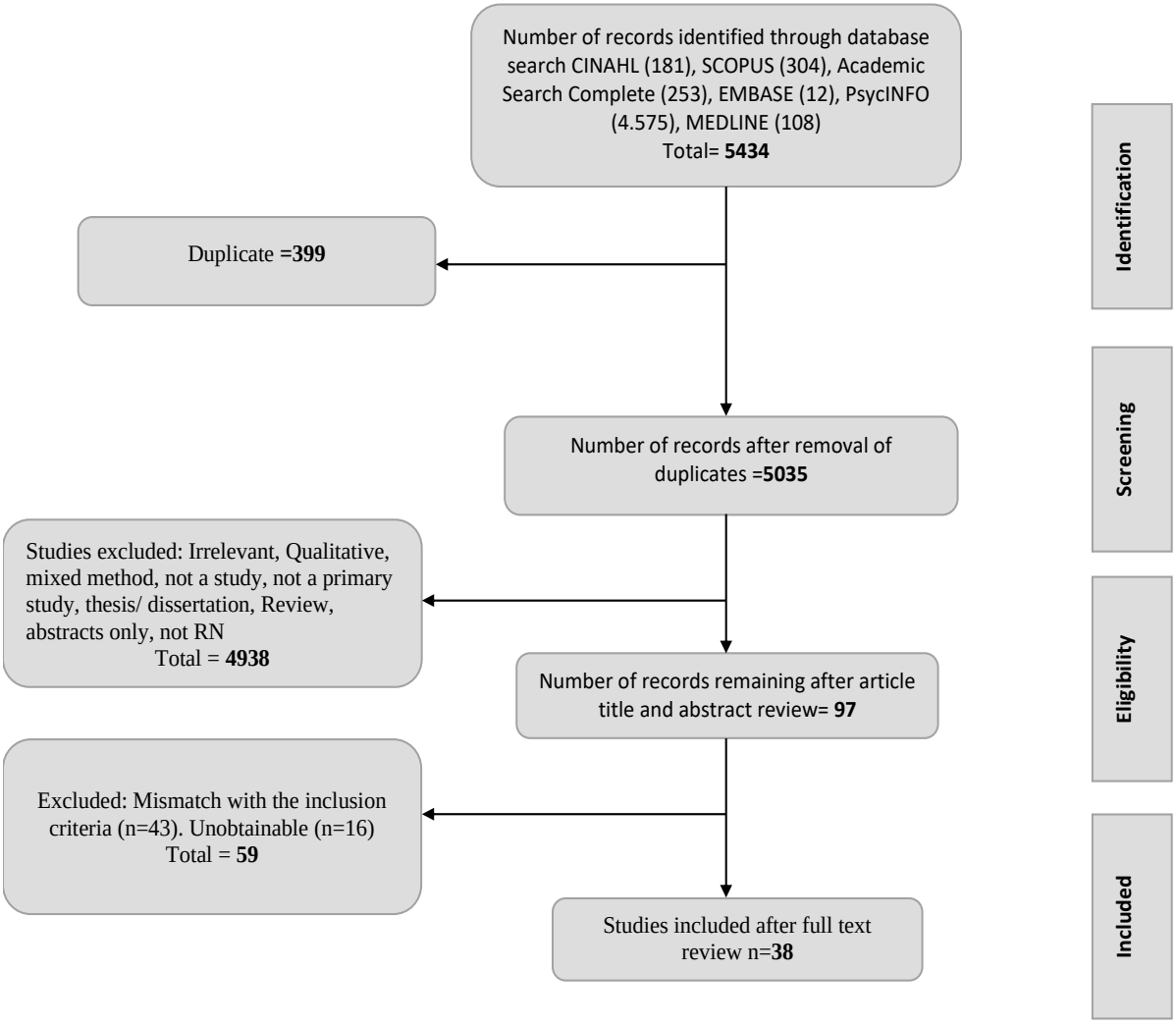
Only articles with nurses' job satisfaction as a dependent variable were reviewed. For consistency in comparing findings, the review was also limited to studies using a primarily quantitative approach. The participants in these studies were nurses working in acute care settings in rural or urban areas. The outcomes of the chosen studies were the extrinsic, intrinsic, and other factors associated with nurses' job satisfaction. Articles were excluded if registered nurses (RNs) were not analyzed separately from other professions. Also, due to the differences in experiences and expectations, we excluded

studies that focused on nurses in non-acute care settings or did not analyze RNs directly involved in patient care.

2.3.5. Search outcomes

A total of 38 studies were included in this review. The initial search retrieved 5434 articles. All references retrieved from the database were added to reference management software (Endnote 9.2). Exclusion of duplicates reduced this number by 399 and a further 4938 studies were excluded if inclusion criteria were not met in title or abstract. Sixteen additional studies were excluded as the full text was unobtainable. A review of the full text of the remaining studies resulted in a further 59 studies being excluded based on inclusion and exclusion criteria. Also, one study was excluded as the statistical significance level observed when reporting significant results was higher than the standard alpha value of $p<0.05$ (p=0.06) (Matos, Neushotz, Griffin, & Fitzpatrick, 2010). The selection process was performed by two reviewers who worked independently. Discrepancies and disagreements were resolved by discussion. See Figure 2.1 for the PRISMA flow diagram.

Figure 2.1: PRISMA flow diagram

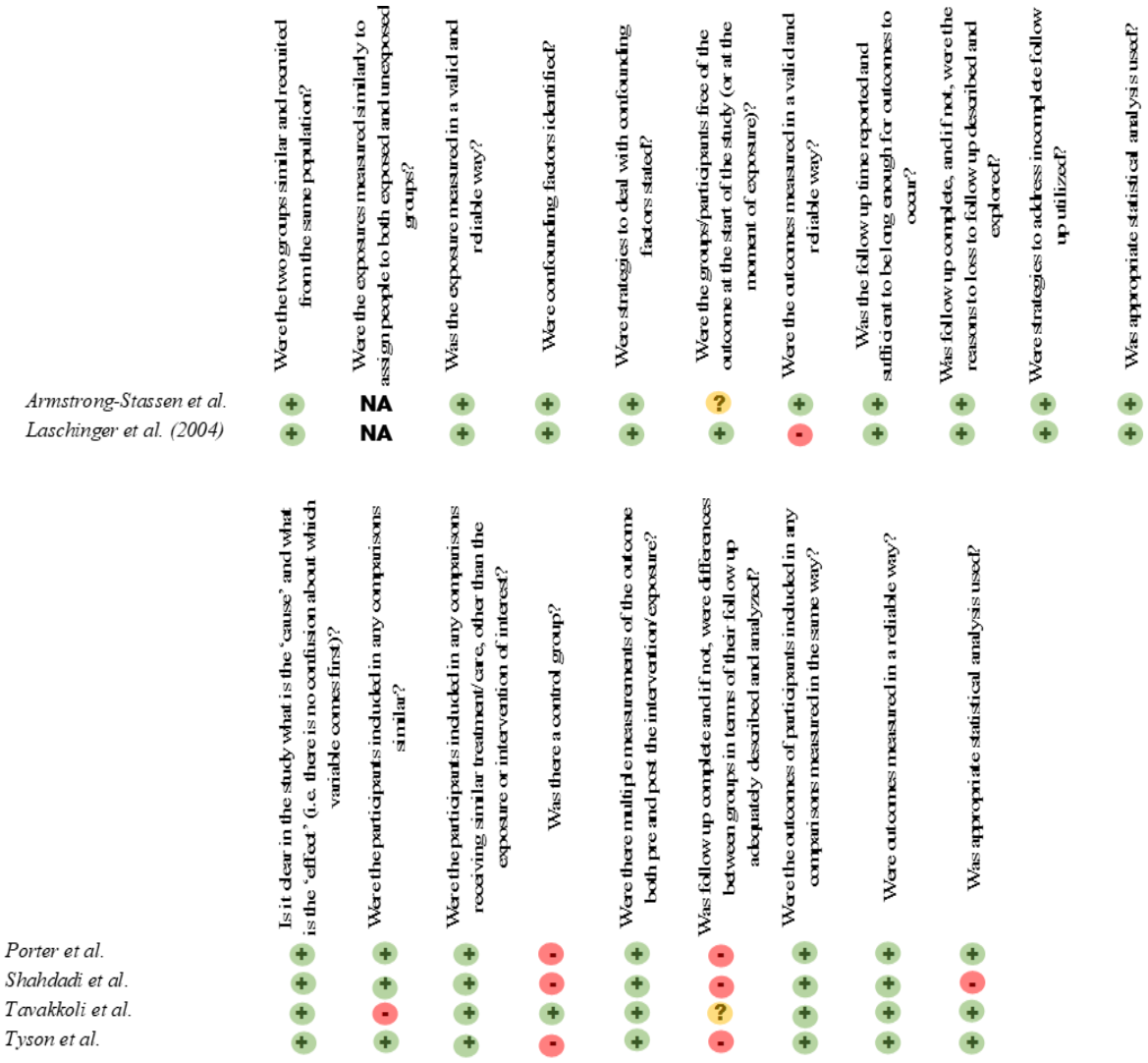


2.3.6. Quality appraisal

Two reviewers examined the selected articles independently. Three of the Joanna Briggs Institute (JBI) critical appraisal tools were used to assess the quality of evidence in individual studies, with the choice of tool used depending on the study design. The first tool was the JBI critical appraisal tool for quasi-experimental studies (Tufanaru, Munn, Aromataris, Campbell, & Hopp, 2017). The second tool was the JBI critical appraisal

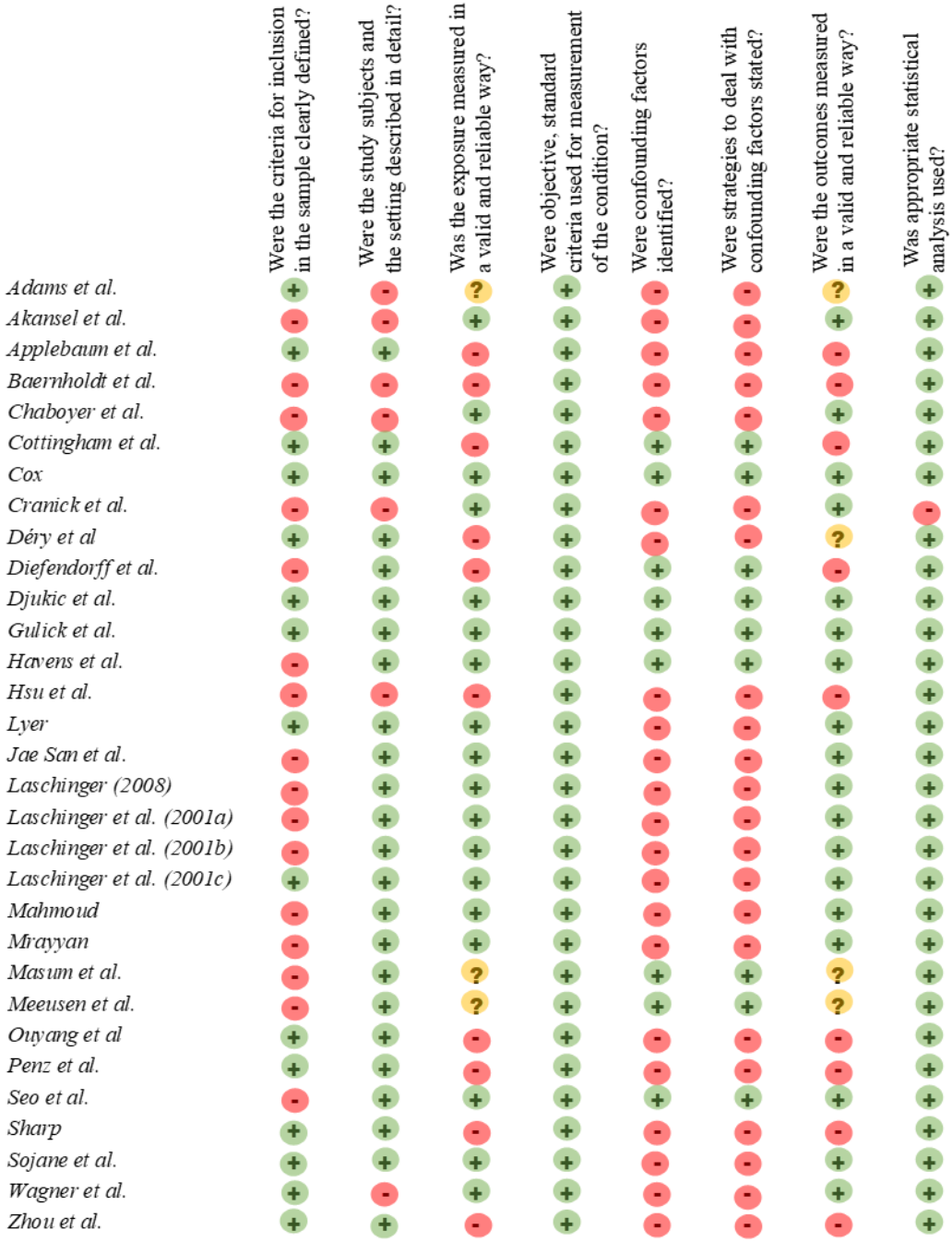
checklist for cohort studies (Moola et al., 2017). The final tool was the JBI critical appraisal checklist for analytical, cross-sectional studies (Moola et al., 2017). The JBI tools were developed by the Joanna Briggs Institute at the University of Adelaide, Australia. These tools are valid and reliable and were explicitly developed for use in systematic reviews (JBI, 2017). To calculate the final quality score and define the cut off points, we adopted an approach similar to the one used by Dilig-Ruiz et al. (2018) in their systematic review. The total score obtained when evaluating the selected study was divided by the maximum possible score for the selected JBI tool (after subtracting points not applicable to the article in question). The resulted proportion was then multiplied by 10 to get a standardized score out of 10. The final score was used to assign studies to one of three methodological quality categories: weak (≤5.9), moderate (6-7.9), and strong (≥8). The outcomes of the quality assessment process are presented in Figure 2.2 and 2.3. In these figures, a red colored circle indicates that the study failed to meet the criterion in the quality checklist. A green colored circle indicates that the study successfully met the criterion in the quality checklist. Finally, a yellow circle means that the reviewers were not sure that the selected criterion was met or not met.

Figure 2.2: Risk of bias in the longitudinal studies and quasi-experimental studies



Note: Methodological quality score categories: weak (≤5.9), moderate (6 7.9), and strong (≥8).

Figure 2.3: Risk of bias in the cross-sectional studies



Note: Methodological quality score categories: weak (≤5.9), moderate (6 7.9), and strong (≥8).

2.3.7. Data abstraction and synthesis

Data extraction was completed by two authors independently using a form based on the Cochrane Consumers and Communication Review Group's data extraction template (Ryan, Synno, Prictor, & Hill, 2016). The data extracted for this review were: author, journal, country, research purpose and questions, theoretical framework, design, setting, subjects, sampling method, relevant sample characteristics, response rate, measurement instrument, job satisfaction score, independent and dependent variables, analysis method, and key results of the study.

Data were extracted into summative tables using an Excel spreadsheet. Selected studies were represented in rows, with data items in columns. This technique helped with extraction of information from each study and therefore reduced the time and effort needed to identify similarities and differences. Relevant data were extracted using content analysis, where the spreadsheets were reviewed and identified factors were coded. The identified job satisfaction factors were reviewed for frequency, similarities and differences before being categorized into either personal or community factors or into one of the two types of factors derived from Herzberg's theory – i.e. as intrinsic or extrinsic. When bivariate and multivariate statistical analyses were reported in the same study, we have focused on the results of the multivariate analysis. For instance, if correlation and multiple regression were used in the same study, the regression results were reported. Similarly, for longitudinal studies we focused on the main follow-up results rather than on baseline differences where applicable. To facilitate the analysis of reported job satisfaction scores in different studies where different tools have been used, we used a standardized score on a 10-point scale where 0 represents no job satisfaction and 10

represents the maximum job satisfaction. Consequently, the proportion resulted from dividing the reported job satisfaction score by the maximum possible score in the selected study was multiplied by 10. Then we took the average of these scores to calculate the general mean of job satisfaction among all reported studies. For consistency, we adopted a standardized scoring approach for job satisfaction that was used in a previous systematic review where different tools were also used to measure job satisfaction across the reviewed studies (Dilig-Ruiz et al., 2018). Finally, where possible we compared the factors affecting job satisfaction in rural and urban settings, based on the reported findings. Meta-analysis was not used for the review as selected studies were considered too heterogeneous in terms of methods and analysis, and thus a more descriptive approach was suitable. Disagreements between reviewers were resolved by discussion.

2.4. Results

2.4.1. Study characteristics

Thirty-eight studies involving a grand total of 16,359 participants were selected for this review. Cross-sectional designs were the most common (*n*=32), with the rest being either quasi-experimental designs (*n*=4) or longitudinal designs (*n*=2). About half of the selected studies were conducted in the USA (*n*=10) or Canada (*n*=9). The majority were based on an explicit theoretical framework (*n*=22). The most frequently used theoretical framework to assess job satisfaction was Herzberg's theory (*n*=6). In the majority of cases in which the location was explicitly reported the research was carried out in an urban-only location (*n*=11), followed by mixed settings (*n*=6) and finally rural areas (*n*=5). Further details about the main characteristics of all 38 studies reviewed are presented in Table 2.1.

The majority of the studies included in this study were of weak (*n*=12) or moderate (*n*=19) methodological quality. Only seven studies were of strong methodological quality. Reasons for poor methodological quality were failure to identify confounding factors, the scales used lacked reported reliability and validity and an absence of clear inclusion and exclusion criteria. In addition, most studies used a non-probability sampling technique. Data about the risk of bias are presented in Figure two as per Cochrane guidelines for reporting summary of bias (The Cochrane Collaboration, 2011).

Table 2.1: Studies characteristics and findings

Reference	Framework	Design	Sampling method	Sample size	Response rate	Location	JS measure	JS score	Statistic	Results associated with nurses' job satisfaction	Factor category
Adams et al. 2000 England		Cross-sectional	Stratified random	834	57%		The Ward Organizational Feature Scale		Regression	Cohesion amongst nurses (+) Collaboration with medical staff (+) Staff organization (+) Hierarchical practice (-) *vs* Professional practice (+) Ward facilities (+) Team-building skills of ward leader (+)	Relationship Relationship Work conditions Responsibility Responsibility Work conditions Supervision
Akansel et al. 2011 Turkey	Herzberg's Theory	Cross-sectional	Convenience	65	93%		Developed by the authors		Pearson's and Spearman correlations	Age (+) Seniority (+)	Personal Personal
Applebaum et al. 2010 USA		Cross-sectional	Convenience	116	41%	Urban	4 items from Nurse Intent to Satay Questionnaire		Pearson's correlations	Noise through Perceived stress (-)	Work conditions
Armstrong-Stassen et al. 2013 Canada	Social exchange theory (SET)	Longitudinal	Random sample	442	T1=38% T2=35%		Several tools	3.78/5	SEM	Job challenge (+)	Growth

Reference	Framework	Design	Sampling method	Sample size	Response rate	Location	JS measure	JS score	Statistic	Results associated with nurses' job satisfaction	Factor category
Baernholdt et al. 2009 USA	Structural contingency theory	Cross-sectional	Random sample		62%	Rural vs urban	Organizational Job Satisfaction Scale		Regression	Availability of support services (+) Commitment to care (+) Autonomy (+)	Work conditions Personal Responsibility
Chaboyer et al. 1999 Australia		Cross-sectional	Convenience	135	52%	Rural	Mueller McCloskey Job Satisfaction Scale	3.21/5	Regression	Skill variety (+) Feedback (+) Collaboration with medical stuff (+)	Growth Recognition Relationship
Cottingham et al. 2015 USA	Gender Frame Theory/ Emotion Management Theory	Cross-sectional	Convenience	730	44.80%	Urban, suburban and rural	8 items from Quality of Employment Survey		Regression	Emotional labor (± depending on gender)	Personal
Cox 2003 USA	Models of Pondy, Robbins, Filley,and Wall and Callister	Cross-sectional	Convenience	141	49%		Work Satisfaction Survey		path analysis	Unit technology (-) Intragroup conflict (-) Intrapersonal conflict (-) Team performance (+)	Work condition Relationship Relationship Relationship
Cranick et al. 2015 USA		Cross-sectional	Convenience	182		Rural	Developed by the authors		Pearson's correlation	Self-care (+)	Personal
Déry et al. 2018 Canada	Enacted Scope of Nursing Practice model	Cross-sectional	Convenience	301	90%		The Nurse Job Satisfaction Survey	3.44/5	Structural equation modeling (SEM)	Enacted scope of nursing practice (+) Autonomy (+) Role overload (-) Higher psychological demand (-)	Responsibility Responsibility Work condition Work condition

Reference	Framework	Design	Sampling method	Sample size	Response rate	Location	JS measure	JS score	Statistic	Results associated with nurses' job satisfaction	Factor category
Diefendorff et al 2011 USA	Emotional labor theory	Cross-sectional	Convenience	929	79%	Urban	4 items from Quality of Employment Survey		SEM	Unit-level display rules Positive affectivity (+) Negative affectivity (-) Emotional regulation strategy "surface acting (-) deep acting (+)	Extrinsic factor Personal Personal Personal
Djukic et al. 2010 USA		Cross-sectional	Convenience	362	48.50%	Urban	Several tools		Regression	Perception of Physical environment (NS)	Work condition
Gulick et al. 2007 Several countries	Quality of care assessment model by Donabedian, Herzberg's theory	Cross-sectional	Convenience	168	41%		Misener Nurse Practitioner Job Satisfaction Scale	7.26/10	Structural equation modeling	Autonomy (+) Professional status (+) Professional growth (+) Time efficiency (+) Colleague relationships (+) Benefits (+)	Responsibility Status Growth Work condition Relationship Benefit
Havens et al. 2018 USA	Relational coordination model	Cross-sectional	Convenience	382	64%	Rural	Single item scale	3.14/4	Regression	Relational coordination (+)	Relationship
Hsu et al. 2015 Taiwan	Herzberg's theory	Cross-sectional	Convenience	132	88%		Job Satisfaction Scale	3.81/5	Pearson's correlations	Professional commitment (+) Willingness to make an effort (+) Appraisal in continuing one's career (+) Belief in goals and values (+)	Personal Personal Recognition Personal

Reference	Framework	Design	Sampling method	Sample size	Response rate	Location	JS measure	JS score	Statistic	Results associated with nurses' job satisfaction	Factor category
Iyer 2017 India	Herzberg's theory	Cross-sectional	Cluster sampling	450	94.70%		Developed by the authors		SEM	Role ambiguity (-) Role conflict (-)	Policy Policy
Jae San et al. 2009 Korea	Competing Values Approach	Cross-sectional	Convenience	527	87.80%	Urban	Thomas and Tymon's Measure of Job Satisfaction		SEM	Consensual culture (+) Rational culture (+)	Extrinsic factor
Laschinger 2008 Canada	Leiter and Laschinger's Nursing Work life Model, Kanter's empowerment theory	Cross-sectional	Random sample	234	58.50%	Urban	4 items from Job Diagnostic Survey	3.33/5	SEM	Structural empowerment (+) Staffing adequacy (+)	Policy Work conditions
Laschinger et al. 2001a Canada	Kanter's empowerment theory	Cross-sectional	Random sample	412	75.60%	Urban		2.78/5	SEM	Structural empowerment (+)	Policy

Reference	Framework	Design	Sampling method	Sample size	Response rate	Location	JS measure	JS score	Statistic	Results associated with nurses' job satisfaction	Factor category
Laschinger et al, 2001b Canada	Kanter's empowerment theory, Karasek job strain model	Cross-sectional	Random sample	404	72%	Urban	4 items from Job Diagnostic Survey		SEM	Psychological empowerment (+) Structural empowerment (+)	Responsibility Policy
Laschinger et al, 2004 Canada	Kanter's empowerment theory, Karasek job strain model	Longitudinal study	Random sample	185	45%	Urban	4 items from Job Diagnostic Survey		SEM	Structural empowerment (+)	Policy
Laschinger et al, 2001c Canada	Magnet hospital characteristics model	Cross-sectional	Stratified random	3016		Urban and rural	One global item scale	2.3/4	SEM	Autonomy, Control over practice (+) Nurse-physician collaboration (+)	Responsibility Relationship
Mahmoud et al 2014 Syria		Cross-sectional	Convenience	325		Urban and rural	4 items from previous study	4.208/5	SEM	Job security (+)	Job security
Mrayyan 2005 Jordan		Cross-sectional	Convenience	438	79.60%	Urban	Mueller McCloskey Job Satisfaction Scale	2.98/5	Regression	Experience, age, (+) Education (-) Shift work (-)	Personal Personal Work condition
Masum et al 2016 Turkey		Cross-sectional	Convenience	417	87.00%		Job Satisfaction Survey	3.46/6	Spearman's rank correlation	Age, experience (+) Pay, fringe, rewords (+) Promotion (+) Supervisor support (+) Operating conditions, work environment (+) Coworkers, communication (+)	Personal Benefit Advancement Supervision Work condition Relationship

Reference	Framework	Design	Sampling method	Sample size	Response rate	Location	JS measure	JS score	Statistic	Results associated with nurses' job satisfaction	Factor category
Meeusen et al. 2011 Netherlands		Cross-sectional	Convenience	923	46%		One global item scale	2.79/4	Regression	Work climate (+)	Work condition
Ouyang et al. 2015 China	Herzberg's theory& Maslow	Cross-sectional	Convenience	726	85.40%		Job Satisfaction Survey	127.3/216	Regression	Psychological empowerment (+) Organizational commitment (+) Marital status (singles) (+)	Responsibility Work itself Personal
Penz et al. 2008 Canada		Cross-sectional	Convenience	944	68%	Rural	Index of Work Satisfaction		Regression	Availability of equipment and supplies (+) Satisfaction with scheduling and shifts (+) Number of RN (-) Staffing adequacy (+) Lower psychological job demands (+) Community satisfaction (+) Community support (+) Barriers to continuing education (-) Gender (+)	Work condition Work condition Work condition Work condition Community factor Community factor Growth Personal
Porter et al. 2010 USA		Quasi-experimental	Convenience	n1 = 612; n2 = 1,397		Urban	One global item scale	57.9 to 61.77	t-test	Labor management partnership (+)	Supervision

Reference	Framework	Design	Sampling method	Sample size	Response rate	Location	JS measure	JS score	Statistic	Results associated with nurses' job satisfaction	Factor category
Seo et al. 2004 Korea		Cross-sectional	Convenience	353	65.40%	Urban			SEM	Workload (-) Routinization (-) Positive affectivity (+) and negative affectivity (-) Job opportunity (+) Supervisory support (+) Pay (+)	Work condition Work conditions Personal Community factor Supervision Benefit
Shahdadi et al. 2016 Iran	Herzberg's theory	Quasi-experimental	Convenience	17			Developed by the authors		Chi-square test	Participatory management (+)	Supervision
Sharp 2008 USA	Herzberg's theory	Cross-sectional	Convenience	161	56%		Minnesota Satisfaction Questionnaire	77.6/100	Spearman's rank order correlations	Ability utilization (+) Compensation (+) Co-worker relationship (+) Achievement (+)	Responsibility Benefit Relationship Achievement
Sojane et al. 2016 South Africa		Cross-sectional	Convenience	204	33.30%		Single item scale	2.74/4	Spearman's rank order correlations	Leadership (+) Work schedule flexibility (+) Advancement (+) Independence at work (+) Professional status (+) Wages (+) Educational opportunities (+) Annual leave (+) Sick leave (+) Study leave (+)	Supervision Work conditions Advancement Responsibility Status Benefits Growth Policy

Reference	Framework	Design	Sampling method	Sample size	Response rate	Location	JS measure	JS score	Statistic	Results associated with nurses' job satisfaction	Factor category
Tavakkoli et al. 2015 Iran	Broken window theory	Quasi-experimental	Random sample	250			Job Satisfaction Index		ANOVA	Natural physical environment (+)	Work conditions
Tyson et al. 2002 Australia		Quasi-experimental	Convenience	34	75%	Rural	Job Satisfaction by Warr 1979		ANOVA	New working environment (NA)	Work conditions
Wagner et al. 2013 Canada	Spirit at work	Cross-sectional	Stratified random	148	31%	Urban vs rural	4 items from Quinn& Shepard Survey	20.18/28	SEM	Impact and resonant leadership (+) Rank (-)	Supervision Personal
Zhou et al. 2015 China		Cross-sectional	Cluster sampling	1100			One global item scale		Logistic regression	More staffing (+) Improvement of work environment (+) Work hours (-)	Work conditions Work conditions Work conditions
Zurmehly 2008 USA		Cross-sectional	Convenience	140	73%	Urban and rural	Minnesota Satisfaction Questionnaire	65.27/100	Regression	Critical thinking (+) Educational level (+)	Personal Personal

2.4.2. Extrinsic factors affecting job satisfaction

Nineteen of the studies included in this review reported that work conditions were associated with nurses' job satisfaction, making it the most frequently linked extrinsic factor. In general, a more positive perception of the physical working environment and operating conditions was associated with higher job satisfaction (Djukic, Kovner, Budin, & Norman, 2010; Masum et al., 2016). Findings of five studies showed that lack of resources, staffing or equipment may lead to poor operating conditions and was therefore associated with job dissatisfaction (Adams & Bond, 2000; Baernholdt & Mark, 2009; Penz, Stewart, D'Arcy, & Morgan, 2008; Zhou et al., 2015). Other factors associated with job dissatisfaction were increased physical demands such as working with patients with complex care needs, work overload, increases in working hours, shift work, and routinization (Cox, 2003; Déry, Clarke, D'Amour, & Blais, 2018; Gulick, Halper, & Costello, 2007; Laschinger, 2008; Mrayyan, 2005; Seo, Ko, & Price, 2004; Zhou et al., 2015). Moreover, working in a noisy environment increased employees' stress, which in turn increased job dissatisfaction (Applebaum, Fowler, Fiedler, Osinubi, & Robson, 2010). On the other hand, moving to work in a nature-inspired work environment improved nurses' job satisfaction relative to working in an environment without such natural elements (Tavakkoli, Asaadi, Pakpour, & Hajiaghababaei, 2015). By way of comparison, Tyson, Lambert, and Beattie (2002) found no association between job satisfaction and moving to a new, improved hospital location. Furthermore, Déry et al. (2018) and Penz et al. (2008) studied the impact of psychological demand on job satisfaction. They found that high level of psychological demands was negatively associated with job satisfaction.

Salary, fringe benefits, and monetary reward were all found to be positively associated with job satisfaction in several studies conducted in different settings and countries (Gulick et al., 2007; Masum et al., 2016; Seo et al., 2004; Sharp, 2008; Sojane, Klopper, & Coetzee, 2016). Four studies by Laschinger and colleagues reported a direct, positive association between nurses' job satisfaction and structural empowerment (Laschinger, 2008; Laschinger, Finegan, & Shamian, 2001a, 2001b; Laschinger, Finegan, Shamian, & Wilk, 2004). Moreover, policies that give nurses more leave time (Mrayyan, 2005) and a flexible work schedule (Sojane et al., 2016) reportedly have a positive impact on job satisfaction. On the other hand, an unclear work environment policy that leads to role ambiguity and role conflict had a negative impact on job satisfaction (Iyer, 2017).

Satisfaction with supervisors was positively associated with job satisfaction (Sojane et al., 2016). Three studies in this review showed the importance of specific supervisor behavior in improving job satisfaction. For instance, supervisor actions that encouraged team building activities (Adams & Bond, 2000) and provision of support for employees (Masum et al., 2016; Seo et al., 2004) were associated with higher job satisfaction. In other studies, resonant leadership style (Wagner, Warren, Cummings, Smith, & Olson, 2013) and participatory leadership style (Porter, Kolcaba, McNulty, & Fitzpatrick, 2010; Shahdadi, Gharebagh, Allahyari, Balouchi, & Bandani, 2016) were found to be positively associated with nurses' job satisfaction.

Eight studies included in this review discussed interpersonal relationships. Three studies pointed out that good coworker relationships can enhance job satisfaction (Gulick et al., 2007; Masum et al., 2016; Sharp, 2008). Four studies indicated that collaboration with others in the healthcare team increased job satisfaction (Adams & Bond, 2000;

Chaboyer, Williams, Corkill, & Creamer, 1999; Havens, Gittell, & Vasey, 2018; Laschinger, Shamian, & Thomson, 2001c). Coworker communication, good team performance and cohesion among nurses were also reported to improve nurses' job satisfaction (Adams & Bond, 2000; Cox, 2003). On the other hand, intragroup and intrapersonal conflict was associated with job dissatisfaction (Cox, 2003).

Two studies in this review found a positive association between job satisfaction and perception of professional status (Gulick et al., 2007; Sojane et al., 2016). Only one study found that job security predicted job satisfaction (Mahmoud & Reisel, 2014). Two studies discussed the effects of organizational culture and organizational norms for emotional display. The first study found that a consensual and rational organizational culture had a positive impact on nurses' job satisfaction (Jae San & Kim, 2009). The second study indicated that emotional display norms, whereby nurses were expected to express positive emotion and hide negative emotion, were associated with job dissatisfaction (Diefendorff, Erickson, Grandey, & Dahling, 2011).

2.4.3. Intrinsic factors affecting job satisfaction

Six studies showed that autonomy and independence at work enhanced nurses' job satisfaction (Baernholdt & Mark, 2009; Déry et al., 2018; Gulick et al., 2007; Laschinger et al., 2001b; Sharp, 2008; Sojane et al., 2016). On the other hand, a hierarchical, highly centralized culture was negatively associated with job satisfaction whilst professional practice was positively associated with job satisfaction (Adams & Bond, 2000). Furthermore, two studies reported that psychological empowerment, was positively associated with job satisfaction (Laschinger et al., 2001b; Ouyang, Zhou, & Qu, 2015).

Growth, advancement, and achievement were positively associated with job satisfaction (Gulick et al., 2007; Masum et al., 2016; Meeusen, van Dam, Brown-Mahoney, van Zundert, & Knape, 2011; Sharp, 2008; Sojane et al., 2016). This is consistent with the idea of challenging work that requires more skills increased job satisfaction (Armstrong-Stassen & Stassen, 2013; Chaboyer et al., 1999). Furthermore, recognition was found to be associated with job satisfaction (Chaboyer et al., 1999; Hsu, Wang, Lin, Shih, & Lin, 2015).

2.4.4. Personal factors affecting job satisfaction

Two categories of factors were identified in this review that were not related to job context or job content (i.e. they are neither extrinsic nor intrinsic factors). The first is personal or individual factors that affect nurses' job satisfaction. These factors can be further classified as demographic factors or behavioral/emotional factors. Seven of the studies included in this review showed an association between demographic variables and job satisfaction. Three studies reported a positive relationship between age or seniority and job satisfaction (Akansel, Özkaya, Ercan, & Alper, 2011; Masum et al., 2016; Mrayyan, 2005). One study reported that rank was negatively associated with job satisfaction (Wagner et al., 2013). Mrayyan (2005) reported a negative association between educational preparation and job satisfaction, whereas Zurmehly (2008) suggested that there is a positive association between educational level and job satisfaction. Further analysis in this study revealed that nurses with a BScN degree had higher job satisfaction than those with a master's degree or diploma. Two studies discussed the impact of gender on job satisfaction. Penz et al. (2008) found that job satisfaction was higher among female nurses than male nurses, whereas Cottingham,

Erickson, and Diefendorff (2015) argued that male nurses shield their emotions and that this contributed to their reporting greater job satisfaction. Finally, one study reported that single nurses had higher job satisfaction than married nurses (Ouyang et al., 2015).

Behavioral/emotional factors were examined in seven studies in this review. Professional commitment was examined in two studies: the first one indicated that commitment to nursing care was positively associated with job satisfaction (Baernholdt & Mark, 2009) and the other that professional commitment to building a nursing career was positively associated with job satisfaction (Hsu et al., 2015). Two studies reported that nurses with positive affectivity were more satisfied in their job than nurses with negative affectivity (Diefendorff et al., 2011; Seo et al., 2004). Another study found that nurses who believed in their employing organization's goals and values and were willing to make an effort to help the organization be successful had higher job satisfaction than their less committed peers (Hsu et al., 2015). One rural focused study found that nurses who displayed relatively high levels of self-care behavior were more satisfied with their job (Cranick, Miller, Allen, Ewell, & Whittington, 2015). In another study critical thinking was found to be positively associated with job satisfaction (Zurmehly, 2008). Finally, person-focused emotional regulation strategies that involved hiding one's feelings (surface acting) were negatively associated with job satisfaction whereas strategies that involved actually feeling the emotion (deep acting) were positively associated with job satisfaction (Diefendorff et al., 2011).

2.4.5. Community factors

The last category of factors influencing job satisfaction identified in this review relates to community factors, i.e. the economic, social, and cultural activities in the

community where the job is located. Two of the studies included in this review examined factors in this category. The first one showed that nurses who were satisfied with their community and perceived community support were more satisfied with their job (Penz et al., 2008). Another study indicated that availability of external job opportunities was positively associated with job satisfaction (Seo et al., 2004).

2.4.6. Comparison between urban and rural studies

Twenty-two of the 38 studies included in this review reported the hospital location as either rural or urban or both. In six cases both rural and urban hospitals were involved in the study. Five studies were conducted in rural only settings and 11 studies were conducted in urban only settings. Only one study compared nurses' job satisfaction in rural and urban settings. Interestingly, all the urban only studies reported on extrinsic factors, but none of them reported on intrinsic factors. The most commonly investigated factor in urban studies of nurses' job satisfaction was working conditions (55%) followed by workplace policy (36%). In contrast, intrinsic and extrinsic factors were equally likely to be investigated in studies carried out in rural settings (40% each), although working conditions and relationships were the only extrinsic factors investigated. Personal factors were most commonly considered in mixed setting studies (50%) followed by rural only (40%) and urban only studies (18%).

2.5. Discussion

In this review we have assessed the empirical evidence concerning factors affecting nurses' job satisfaction using studies published between January 1998 and June 2018. The findings of this review were analyzed using a framework based on Herzberg's

two-factor theory of job satisfaction to classify the factors as being either extrinsic or intrinsic. Personal and community factors, although not described by Herzberg's theory, were also found to be associated with job satisfaction according to the studies reviewed. This review focused only on acute care nurses, but factors affecting job satisfaction were examined in a variety of nursing settings. Most studies used multivariate statistical analysis (e.g., regression, SEM, path analysis). By using a standardized approach to compare results from different measurement tools for nurses' job satisfaction, our analysis suggests that acute care nurses were moderately satisfied with their jobs. Weak study designs were common as most of the studies used cross-sectional designs and convenience sampling, which makes it hard to infer any causal relationships. This study bias was consistent with previous literature reviews (Dilig-Ruiz et al., 2018; Squires et al., 2015). Meta-analysis was not used for the review as selected studies were considered too heterogenous in terms of methods and analysis, and thus a descriptive approach was deemed more appropriate.

The most commonly investigated factor was working conditions. Interestingly, both rural and urban studies addressed different aspects of working conditions. Rural studies focused on availability of resources and staffing whereas urban studies focused on physical conditions and workload. Extrinsic factors such as supervision, benefits, employees' relationship and policies were primarily associated with job satisfaction in urban studies, whereas intrinsic factors such as growth, recognition, and responsibility were more likely to be associated with job satisfaction in rural settings. While our review is believed to be the first to make such comparisons between rural and urban settings in term of factors affecting nurses' job satisfaction, our findings were consistent with other

reviews. For instance, Lu et al. (2012) found that nurse job satisfaction is associated with several extrinsic factors such as working conditions, organizational factors and professional commitment. Other reviews found a significant relationship between intrinsic factors such as interpersonal relationships and recognition with nurses' job satisfaction (Utriainen & KyngÄS, 2009).

The findings highlight the relationships between nurses' job satisfaction and extrinsic and intrinsic factors. It is worth noting that the urban studies focused on extrinsic factors at the expense of intrinsic factors. According to Herzberg's theory, satisfaction from extrinsic factors protects against job dissatisfaction, but has a limited positive impact on long-term job satisfaction. On the other hand, satisfaction derived from intrinsic factors is believed to result in more long-lasting job satisfaction, so long as extrinsic factors are deemed to be satisfactory (Herzberg, 1966; Herzberg et al., 1959/2010). It follows that nursing scholars should investigate the effects of different intrinsic factor strategies in all settings, and in urban settings in particular. To improve nurses' job satisfaction their managers must find the ideal blend of factors.

Several demographic factors were found to be linked to nurses' job satisfaction. The findings indicate that special attention should be given to young married nurses and who have limited nursing experience, as this population appears to be most prone to job dissatisfaction. The findings on the role of gender and educational level in job satisfaction were inconsistent, so further studies are needed in this area. Personal and demographic variables were also found to be associated with nurses' job satisfaction in other reviews. For example, Maqbali (2015) found that experience, education, type of working unit, age and gender may affect job satisfaction.

Findings on behavioral/emotional factors were substantial. Commitment to work and professional development appears to promote organizational citizenship. This is congruent with Maqbali (2015) findings on the relationship between job satisfaction and organizational commitment. Organizational citizenship and nurses' job satisfaction were positively associated with service quality and patient satisfaction (Mahmoud & Reisel, 2014). Furthermore, belief in organization goals, willingness to make an effort and critical thinking are connected concepts that all play a crucial role in organizational effectiveness. It is not surprising that employees are more willing to work for an organization's success if they believe in its goals. Achieving goals is an inner motivator for job satisfaction. Nurses are deeply involved in patient care. Although empathy is an important job requirement, emotional expectations may sometimes be too high, leading to frustration and job dissatisfaction (Déry et al., 2018). Effective training can reduce nurses' stress and improve their empathy skills (Ancel, 2006), which may ultimately improve their job satisfaction.

2.6. Limitations

Although this review was based on a systematic and validated procedure, it has some limitations. Firstly, only English language publications covering the past two decades were included. Furthermore, gray literature and unpublished work and dissertations were not retrieved, which excluded potentially important sources of information and means that the results may not represent all relevant work in this field. Rural issues, context and description may vary by country or region. As a result, "rural" may not be consistently operationalized in the reviewed studies. Most of the reviewed articles had low to moderate methodological quality. This is consistent with previous

reviews of nurses' job satisfaction (Dilig-Ruiz et al., 2018). A non-probability sampling technique was used in most of the selected articles (*n*=26, 69%). Most of the studies included in this review were cross-sectional studies (*n*=32, 84%). The measurement tools for predictors and outcome were variable, and their validity and reliability were not always reported. This may affect the internal and external validity of the studies. Therefore, causal inferences cannot be drawn from the review and thus the synthesis of the findings needs to be interpreted with this important caveat in mind.

2.7. Conclusion

Many published studies have discussed the factors believed to be associated with nurses' job satisfaction. Although our review was able to identify several key factors, more studies using more robust methodology are needed to examine the impact of these factors on nurses' job satisfaction. There is still a gap in research regarding the differences between factors affecting nurses' job satisfaction in rural and urban areas. Further research into this topic might enable organizations to tailor their plans to improve nurses' job satisfaction based on their location. The working conditions, as an extrinsic factor, and the authority and freedom nurses have at work, as intrinsic factors, were the most frequently reported factors associated with nurses' job satisfaction. We suggest that nursing managers and hospital administrators should design and implement strategies that enhance both extrinsic and intrinsic factors. It should be noted that neither satisfaction from extrinsic nor intrinsic factors alone are deemed to be enough to eliminate job dissatisfaction amongst nurses. Hospital management should search for the perfect blend of intrinsic and extrinsic factors, based on nurses' needs and organizational commitment. This review provides empirical support for Herzberg's theory. This finding is consistent

with previous studies (Malik & Naeem, 2013; Williams, 2001). Herzberg's theory can provide conceptual clarity regarding the impact of intrinsic and extrinsic factors on job satisfaction.

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Chapter 3:

Development and Testing of an Acute Care Nurses' Job Satisfaction Scale (ACNJSS)[1]

3.1. Introduction

The majority of the nursing workforce in North America is employed in an acute care setting. For example, 63.5% of Canadian nurses are working in a hospital setting (Canadian Institute for Health Information, 2016). Similarly, 55% of nurses in the United States are working in acute care settings (Smiley et al., 2018). People receive various health services based on the type of healthcare setting. Accordingly, factors affecting nursing job satisfaction in acute care settings might differ from the factors impacting nurses working in other settings. For instance, long term care facilities provide health services to elderly people with chronic mental and physical diseases (Igarashi et al., 2018).

Job satisfaction is a multifaceted phenomenon with a subjective perspective (Liu, Aungsuroch, & Yunibhand, 2016). Kumar and Khan (2014) conceptualized job satisfaction based on cognitive and affective dimensions. On the other hand, job satisfaction has been described as a simple concept that describes how much the employee likes or dislikes his/her job (Spector, 1997). Lu, Barriball, Zhang, and While

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(2012) argue that expectation is an important aspect of nurse's job satisfaction. In this study, nursing job satisfaction was defined as "… a multidimensional affective concept that is an interaction of an employee's expectation, values, environment and personal characteristics and it is recognized that satisfiers and dissatisfiers are dynamic and relative to the employee" (Misener & Cox, 2001, p. 93).

3.2. Background and conceptual framework

Several factors were found to be associated with nurses' job satisfaction. Autonomy, policies, interpersonal relationships, resource adequacy and educational opportunities were all linked to job satisfaction (Hayes, Bonner, & Pryor, 2010; Yasin, Kerr, Wong, & Bélanger, 2019). Newly graduated nurses (less than one year) reported that extrinsic rewards, scheduling, interactions and support, praise and recognition, professional opportunities, work environment, and hospital system influence their job satisfaction (Lin, Viscardi, Viscardi, & McHugh, 2014).

Herzberg, Mausner, & Snyderman (1959/2010) theorized that job satisfaction is a complex concept made from two unipolar traits: satisfaction and dissatisfaction. Factors influencing job satisfaction include extrinsic and intrinsic factors. Extrinsic factors encompass the job context or environment such as physical working conditions, relationships within work, benefits and working hours. Intrinsic factors represent job content such as recognition, growth, responsibility and the nature of the work itself (Herzberg et al., 1959/2010). Herzberg's two-factor theory was used to guide numerous studies and to develop existing job satisfaction scales such as the Misener Nurse Practitioner Job Satisfaction Scale (MNPJSS) which was designed to measure job satisfaction for advance practice nurses (Misener & Cox, 2001)

Several scales have been developed and/or used to measure nurses' job satisfaction. One of the most commonly used instruments is the Mueller and McCloskey Satisfaction Scale (MMSS; Mueller & McCloskey, 1990). Although the MMSS has been used in several nursing studies, the factor structure was unable to be replicated in follow up studies (Lee, Dahinten, & MacPhee, 2016; Tourangeau, McGillis Hall, Doran, & Petch, 2006). The Index for Work Satisfaction (IWS) is another example of a job satisfaction scale developed in the last century (Stamps, 1998). Other commonly used instruments by nursing scholars are the Minnesota Satisfaction Questionnaire (MSQ; Weiss, Dawis, & England, 1967) and the Job Descriptive Index (JDI; Smith, Kendall, & Hulin, 1969). Both of these instruments were carefully developed and have been extensively used in studies across different disciplines. However, these generic instruments did not take into consideration the specific and unique nature of acute care nursing as a specialized branch of nursing.

After an extensive search, no instrument was found that specifically developed to measure job satisfaction of nurses working in acute care settings. Furthermore, the previously mentioned instruments are relatively old as they have been developed for more than 20 years. With rapid and continuous advances in nursing care, using more sophisticated technology, and the increased demand for nurses, it is anticipated that new challenges and expectations may have emerged for acute care nurses during this time period. A single-item job satisfaction scale is an efficient way of measuring job satisfaction. However, job satisfaction is a multidimensional and complex construct. Multiple facet scale for measuring job satisfaction is more reliable and catches a deep insight and understanding of the organization process (Lepold, Tanzer, Bregenzer, &

Jiménez, 2018). Therefore, we aimed to develop and validate the Acute Care Nurses Job Satisfaction Scale (ACNJSS) to assess job satisfaction for nurses working in acute care settings. This study was conducted based on Herzberg's two-factor theory.

3.3. Methods

3.3.1. Design

This study was conducted in two stages: stage one was the development of the questionnaire items, including the use of Lawshe's method for assessing the tool's content validity (Lawshe, 1975). In stage two, a cross-sectional study was conducted to explore the psychometric properties of the instrument to determine the reliability and construct validity of the new tool.

3.3.2. Content validity

The initially formulated items (83 in total) of the ACNJSS were developed utilizing an extensive literature review to gain knowledge about possible extrinsic and intrinsic factors from studies investigating nurses' job satisfaction. Item selection was based on the nursing literature after consideration of the factors described in Herzberg's two-factor theory (Yasin et al., 2020). The Misener Nurse Practitioner Job Satisfaction Survey (MNPJSS) was also developed based on Herzberg's theory. It was designed to measure extrinsic and intrinsic factors that affect nurse practitioners' job satisfaction (Misener & Cox, 2001). The authors' permission was obtained to use and modify items in the MNPJSS to help develop a new instrument to provide a comprehensive and specific job satisfaction scale for acute care nurses (i.e., RNs rather than NPs).

Twenty-three of the 44 items from the MNPJSS were retained. The remaining 60 items considered at baseline were adopted from the literature review. All of the 83 items were introduced to a team of eight panelists with an extensive experience of more than 10 years in academic or clinical nursing. The panelists team include academic nursing research scholars and acute care registered nurses working in a variety of rural and urban settings. The aim of the item review and selection exercise for the new instrument was to avoid redundancy and to be inclusive, not exclusive. The response options for the selected questionnaire items were adopted from the MNPJSS that has been used as a base for the development of this tool. In the MNPJSS, Misener and Cox (2001) used six-point Likert scale responses including very dissatisfied, dissatisfied, minimally dissatisfied, minimally satisfied, satisfied, and very satisfied. The participants were asked to rank their response for the questionnaire items according to the main question "How satisfied are you in your current job as a registered nurse with the following factors?". Similar to the MNPJSS development approach (Misener & Cox, 2001), a separate item of a ten-point numerical rating scale was used to measure global job satisfaction at the end of the questionnaire. The single item score of global job satisfaction was used to correlate with the instrument's overall score as an evidence of convergent validity. The overall job satisfaction score for the scale was calculated by taking the average of the final selected items of the new questionnaire. This score was correlated with the respondent's score on the global job satisfaction item.

The Content Validity Ratio (CVR) and the Content Validity Index (CVI) were used to establish the content validity. Lawshe's method of CVR for assessing content validity was used in this study (Lawshe, 1975). The CVR is an item specific statistic used

to establish content validity (Wilson, Pan, & Schumsky, 2012). The CVR was calculated based on the panelist judgment as they reviewed the instrument and marked the items on a 3-point scale as (a) “essential,” (b) “useful, but not essential,” and (c) “not necessary” (Wilson et al., 2012). The scale CVI was calculated by taking the average of the item-content validity index (I-CVI) for all items used in the new instrument (Shi, Mo, & Sun, 2012). The I-CVI was computed by dividing the number of experts giving a rating of “essential” for a specific item by the total number of experts (Shi et al., 2012). The cutoff point for an acceptable CVI was set at 0.80 (Davis, 1992). The critical CVR value used was 0.693 in response to eight panelists at $p<0.05$ (Wilson et al., 2012). The CVR ratios for the selected items ranged between 0.75 and 1.00. Fifty-one items were retained based on the CVR cut off points yielding a CVI of 0.95. The final item list based on the content validity analysis was composed of 51 items.

3.3.3. Survey sample and data collection

In the second stage of this study, a cross-sectional survey of 349 acute care nurses from southern Ontario was conducted to assess the reliability and the construct validity of the new instrument. A random sample of nurses, in the form of a mailing list, was obtained from the College of Nurses of Ontario. It was found that there was a difference in workforce characteristics between rural and urban nurses in Canada (MacLeod et al., 2017). Rural nurses in Ontario represent less than 7% of all working nurses in Ontario (Canadian Institute for Health Information, 2019). Consequently, a disproportional stratified random sampling technique was used to assure equal representation of nurses working in urban and rural settings. The Ontario Ministry of Health and Long Term Care (MOHLTC) defines rural communities as “…those with a population of less than 30,000

that are greater than 30 minutes away in travel time from a community with a population of more than 30,000" (MOHLTC, 2010).

The Mixed-Mode Survey method proposed by Dillman, Smyth, and Christian (2014) was used to increase the study's response rate. The survey was sent to 1,000 acute care nurses working in southern Ontario in May 2019. The data collection period was closed after two months from the first mailout. The survey was administered to participants by post with an option to return the paper copy of the survey or to use an electronic format using a link provided. The information letter stated that a draw for $200 would take place for participants who return a completed questionnaire. Two follow up postal reminders were used, each ten days apart after the initial mailout, with a copy of the instrument and a link to the online survey. Both online (n=12) and postal responses (n= 425) were combined for the final total (N=437). Several responses were excluded due to blank returns (n=12), wrong address (n=18), incomplete questionnaire (n=1), not meeting the inclusion criteria (n=9) and returning more than one survey (n=48). The final number of useable and completed responses was N=349. The final study response rate was 36%.

The inclusion criteria to participate in the study included: be an acute care registered nurse working full-time or part-time in rural or urban southern Ontario; have at least six months of work experience in the same hospital as a registered nurse or charge nurse with entry-level as registered nurse, provide direct patient care, and be able to read and understand English. By contrast, nurses were excluded if they were: employed on a temporary basis; not involved in direct patient care; on temporary leave; working as an

educator, advanced practice nurse or in a managerial position where they would have different roles from direct care nurses and thus be affected by different work stressors.

3.3.4. Psychometric testing

The Statistical Package for Social Sciences (SPSS) version 24 (IBM Corp, 2016) was utilized for data analysis. Descriptive statistics were examined after data entry into SPSS. This step was conducted to assess data quality and to define the sample characteristics. A principal axis factoring option in SPSS, as a means for exploratory factor analysis (EFA), was used to determine if there was any factor structure that fit the data. Exploratory factor analysis can help in the establishment of construct validity during the development of new instruments (Kellar & Kelvin, 2013; Tabachnick & Fidell, 2012). In this study, an oblique rotation was used for three reasons: firstly, the theoretical framework proposes a relationship between job satisfaction factors under the umbrella of extrinsic and intrinsic factors; secondly, in the real world, important factors are often correlated (Kellar & Kelvin, 2013); finally, our post-hoc analysis indicated high correlations among emerged factors.

The Kaiser-Meyer-Olkin test for sampling adequacy and Bartlett's test of sphericity were used to indicate the appropriateness of using EFA. In this study, we used eigenvalues >1 and the tangent in the slope of the scree plot to identify the number of possible factors (Kellar & Kelvin, 2013; Polit, 1996). To align the items with their emergent factors, we used a threshold value of 0.40 for item loading (Floyd & Widaman, 1995). At the same time, a difference of >0.30 for any cross-loaded items was essential for item alignment (Floyd & Widaman, 1995). Finally, the interpretability of the new factor structure based on Herzberg's theory was the most crucial criterion.

3.3.5. Ethical considerations

Ethical approval for the study was obtained from the Western University Health Sciences Research Ethics Board. Completion and returning of the paper or online survey were used as an indication of consent to participate in the study.

3.4. Results

3.4.1. Sample characteristics

The sample of this study consisted of 349 participants with a mean age of 42.7 years (*SD*=12.73). The mean overall years of experience was 18.71 years (*SD*=13.12). Most of the participants were female (96.3%), married (71.3%) and working as registered nurses (89.4%). Just over half of the sample had a bachelor's degree in nursing (51%), were working in urban hospitals (51.5%) and were in a critical care unit (51.6%). Finally, most of the sample worked as full-time nurses (67.9%). See Table 3.1 for details.

3.4.2. Exploratory factor analysis

The initial analysis showed that Kaiser-Meyer- Olkin test for sampling adequacy (0.95) and Bartlett's test of sphericity ($\chi 2 = 12569.845$; $df=1275$; $p<0.0001$), both indicated that the sample was adequate for use with EFA. Based on eigenvalues >1 the initial result showed items loaded on nine possible factors. This was confirmed by a scree plot which showed a break at the 9th factor.

Using the item correlation matrix, five highly correlated items with a correlation coefficient above 0.80 were removed. We then used a loading cutoff point of 0.40 and the scree plot to return the item loading on the emerging factors (Finch, 2019). Consequently,

twelve low loading items were excluded. One complex item that loaded on more than one factor and with a loading difference of less than 0.30 was removed. Finally, the emerged factors were evaluated for their conceptual meaning based on Herzberg's two-factor theory. Table 3.2 represents the factor loading with the final six-factor model. Figure 3.1 shows the scree plot for the final factor analysis. The emerged factors were achievement/job interest/responsibility, hospital policy, quality of supervision, peer support/work condition, growth/advancement, and benefits/job security. The correlations between emerged factors ranged between 0.319 and 0.508. The final tool was composed of 31 items and the Kaiser-Meyer-Olkin test for sampling adequacy (0.95) and Bartlett's test of sphericity ($\chi 2 = 7273.49$; $df=561$; $p<0.0001$) suggested a good fit with the data.

Table 3.1: Sample characteristics

Sample characteristic	Mean (SD)	n (%)
Gender		
Male		12 (3.4)
Female		336 (96.3)
Other		1 (0.3)
Education		
Diploma		163 (46.7)
Bachelor		178 (51)
Graduate		8 (2.3)
Marital status		
Single		63 (18.1)
Married		249 (71.3)
Divorced		30 (8.6)
Widowed		2 (0.6)
Prefer not to answer		5(1.4)
Hospital location[†]		
Urban		177 (51.5)
Rural		167(48.5)
Position		
Registered nurse		312(89.4)
Charge nurse		37 (10.6)
Employment		
Full time		237 (67.9)

Sample characteristic	Mean (SD)	n (%)
Part time		112 (32.1)
Working area†		
Day case		6 (1.7)
Hospital clinic		19 (5.5)
Inpatient ward		122 (35.2)
Critical care unit		179 (51.6)
Others hospital units		21 (6.1)
Age/years	42.73 (12.73)	
Experience/years	18.71 (13.12)	

† Missing data so valid percentage reported

Figure 3.1. Scree plot for the final factor analysis

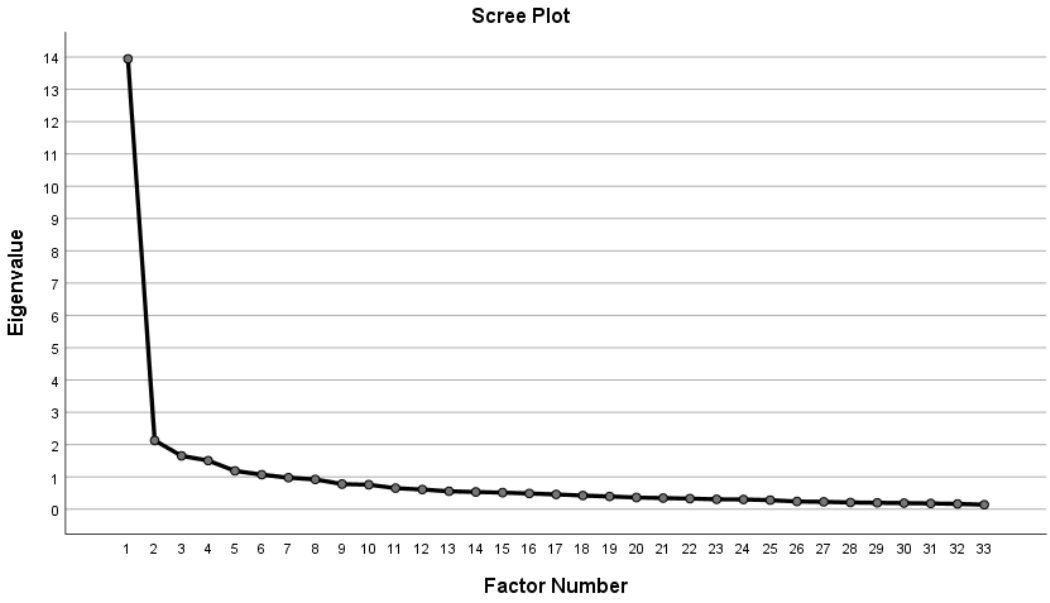

Table 3.2: Rotated factor in pattern matrix with correlations among the factors

Items	Factors					
	1	2	3	4	5	6
Feeling pride about your job	.667					
Challenge in your work	.659					
Sense of accomplishment	.622					
Enjoyment from your job	.539					
Being responsible for the work you do	.517					
Ability to use your own judgment	.482					
Sense of value for what you do	.470					
Clarity of workplace employment policies		-.799				
Completeness of workplace policies		-.773				
Ease of search for workplace policies		-.678				
Availability of resources and supplies		-.540				
How you are informed about new policies		-.516				
The way new policies are implemented		-.447				
The direct interaction between you and your direct supervisor			-.881			
Direct supervisor competence			-.853			
Direct supervisor support and backup			-.844			
Recognition for your direct superiors			-.642			
Fairness of assignment distribution				-.709		
Workload				-.618		
Peer support during the work shift				-.543		
Ability to deliver quality care				-.540		

Items	Factors					
	1	2	3	4	5	6
Physical working conditions (lights, noise, cleanliness, heating, ventilation)				-.400		
Opportunity for professional growth					-.656	
Opportunity for promotion within the organization					-.655	
Opportunity to expand your scope of practice					-.575	
Opportunity to seek advance education					-.467	
Opportunity to develop and implement ideas.					-.400	
Your job security						.633
Retirement plan						.611
Benefits package						.448
Your salary/hourly wage						.400
Factor interaction (correlation)						
Factor 1: Achievement/job interest/responsibility	1.000					
Factor 2: Hospital policy and	-.355	1.000				
Factor 3: Quality of supervision	-.387	.458	1.000			
Factor 4: Peer support/work condition	-.485	.473	.459	1.000		
Factor 5: Growth/advancement	-.404	.504	.508	.373	1.000	
Factor 6: Benefits/job security	.477	-.332	-.319	-.332	-.359	1.000

To assess the subscale reliability of the new instrument, Cronbach's alpha was used as a measure of internal consistency. The final EFA after item reduction explained 57.6% of the variance. The Cronbach's alpha for five of the emerged factors ranged between 0.83 and 0.92. Only one-factor "benefits and job security" has a Cronbach's alpha less than 0.80 but higher than 0.70. The overall Cronbach's alpha for the new scale was 0.95. The number of items, means and standard deviations, explained variance and Cronbach's alpha values for the final version of the ACNJSS subscales are available in Table 3.3.

Table 3.3: The ACNJSS subscales

Factors	Number of items	Mean	SD	Explained variance	Cronbach's alpha
Factor 1: Achievement/job interest/responsibility	7	4.76	0.80	41.07%	0.87
Factor 2: Hospital policy	6	3.67	1.03	5.27%	0.89
Factor 3: Quality of supervision	4	3.75	1.30	4.01%	0.92
Factor 4: Peer support/work condition	5	4.03	1.03	3.15%	0.83
Factor 5: Growth/advancement	5	3.80	1.06	2.09%	0.87
Factor 6: Benefits/job security	4	4.45	0.89	2.00%	0.71
Total ACNJSS (General job satisfaction)	31	4.11	0.81	57.6%	0.95

We calculated the overall job satisfaction score by taking the average of all 31 items. The new overall job satisfaction score was significantly and strongly correlated with the single item global job satisfaction score included as a validation cross-check at the end of the questionnaire (r=0.82; p<0.0001).

3.5. Discussion

3.5.1. Acute Care Nurses Job Satisfaction Scale

In this paper, a new instrument (ACNJSS) for the assessment of job satisfaction among nurses working in acute care hospitals was presented. Herzberg's two-factor theory was used as a theoretical framework to develop the new tool. A review of the nursing literature was conducted to develop the items for the new instrument. The MNPJSS was reviewed as a starting point to suggest items for the new scale. The final instrument was composed of 31 items and included the following six dimensions: achievement/job interest/responsibility, hospital policy, quality of supervision, peer support/work condition, growth/advancement, and benefits/job security.

In this study, the ACNJSS used a multiple-item facet scale. Using a single-item job satisfaction scale is an efficient and cost-effective way of measuring job satisfaction. However, measuring job satisfaction with a facet scale provides a deeper understanding of the factors affecting job satisfaction (Lepold et al., 2018). Diamantopoulos, Sarstedt, Fuchs, Wilczynski, and Kaiser (2012) argued that using multiple items scale resulted in better predictive validity and outperformed a single-item scale in empirical research.

We used Cronbach's alpha as a measure for the reliability of the ACNJSS. Cronbach's alpha for the emerged factors ranged between 0.71 and 0.92. Cronbach's alpha for the entire scale was 0.95. Although a Cronbach's alpha above 0.80 is preferred, a score above 0.70 is considered acceptable (Kellar & Kelvin, 2013). While the Cronbach's alpha for an entire scale was reported, it is not advised to use it as an indicator for internal consistency as this counters the assumption of the "tau equivalent

model" which is grounded in the Cronbach's alpha measure (Tavakol & Dennick, 2011). Therefore, we advise using Cronbach's alpha when reporting the internal consistency reliability of the emerged factors only and not the whole scale.

Content validity is a prerequisite for other types of validity (Zamanzadeh et al., 2015). In this study, the CVR and CVI were used to establish content validity. These methods are widely used to quantify content validity in instrument development studies (Ayre & Scally, 2014; Zamanzadeh et al., 2015). The ACNJSS demonstrated good content validity based on the reference values (Davis, 1992; Wilson et al., 2012). Consequently, we can assume that the items comprising the ACNJSS are relevant and representative of acute care nurses' job satisfaction.

The EFA analysis suggested a six-factor structure to the new tool. In addition, the low to moderate correlation between emerged factors suggested acceptable construct validity. The six factors capture the key themes reported in the nursing literature regarding nurses' job satisfaction (Hayes et al., 2010; Li et al., 2018; Lin et al., 2014; Lu et al., 2012; Maqbali, 2015; Yasin et al., 2020). Despite the fact that the ACNJSS is based on the MNPJSS and has the same number of factors, the factor structure is different and resulted in different set of factors. Out of the 23 items initially adopted from the MNPJSS, only eight items were retained in the final ACNJSS after EFA. For example, the MNPJSS factor "professional, social, and community interaction" contains eight items but only one was retained in the ACNJSS. This can be explained as RNs have different roles and responsibilities than NPs in an acute care setting. So, these items were not appropriate for RNs who were not nurse practitioners.

As with the MNPJSS, intrinsic factors accounted for most of the observed variance in nurses' job satisfaction scores. These findings are consistent with Herzberg's propositions of the significance of intrinsic factors in promoting job satisfaction (Herzberg, 1966). Finally, the high correlation between the calculated overall job satisfaction score derived from the average score of all 31 items and the single item global job satisfaction rating is evidence of the tool's convergent validity.

3.5.2. Comparison with other nurse job satisfaction instruments

There are several instruments used to measure job satisfaction among nurses. However, the Index for Work Satisfaction (IWS) and MMSS were cited most often in nursing studies (Hayes et al., 2010). Also, in a recent literature review, Dilig-Ruiz et al. (2018) reported that IWS and the MSQ were the most commonly used instruments in studies that examined nurses' job satisfaction. Although some of these existing instruments have similarities with our new tool, it is worth noting that the items in our questionnaire are specifically designed for nurses working in acute care settings and provide direct patient care with entry-level as registered nurses. Two Canadian studies were conducted to evaluate the psychometric properties of the MMSS. In the first one, Tourangeau et al. (2006) found a different factor structure for MMSS compared to a later study conducted by (Lee et al., 2016). Lee and her team explained the differences between the results in the two studies by pointing out the differences in the setting where each study was conducted. While Tourangeau et al.'s study included nurses working only in acute care settings, Lee et al.'s study included nurses working in both acute and non-acute settings, thereby indicating a tool specific to the acute care setting could have value.

It is important to note that the previously mentioned instruments were all developed in the last century. For instance, IWS was first developed in 1972 (Stamps, Piedmont, Slavitt, & Haase, 1979). Moreover, the MMSS and MSQ were developed in 1990 (Mueller & McCloskey, 1990) and 1967 (Weiss et al., 1967) respectively. In the last 20 years alone, there have been tremendous changes in nurses' working conditions and by default nurses' expectations. When we prepared the items for our new instrument, we took into consideration the rapidly changing health care environment in the 21st century and carefully incorporated items related to service management and nurses' expectations based on intrinsic and extrinsic factors. For example, an item relating to educational opportunity was incorporated in the growth/advancement factor as acute care nurses working in hospitals require continuous in-service education due to rapidly evolving medical technology and models of care.

3.5.3. Strengths and limitations of the study

This study provides a new tool for measuring acute care nurses' job satisfaction that takes into consideration the changes in modern acute care health services. One of the strengths of this study is using a sample of nurses based on random sampling techniques. Also, the sample size was suitable for this type of study. However, the modest response rate was a possible limitation of the study. Despite these concerns, the use of a stratified random sample may aid the quality of data and enable the generalization of the findings. However, it is worth noting that since the sample used an equal representation of nurses working in rural and urban settings this could affect the generalizability of the findings. This study should be followed by other studies to confirm the construct validity such as studies using confirmatory factor analysis (CFA), convergent and discriminant validity

methods. Moreover, evidence of factor structure is necessary but insufficient for proving construct validity. Future studies should be conducted using antecedents and outcomes of job satisfaction among nurses as a source of criterion validity. Finally, the tool was tested in a socialized medicine setting (Canadian context) and may not be valid in a privatized setting such as the United States.

3.5.4. Conclusion

This study introduced a new tool (ACNJSS) specifically developed for measuring acute care nurses' job satisfaction. The exploratory factor analysis revealed a six-factor instrument composed of 31 items using a Likert type rating with a six-point scale ranging from very dissatisfied to very satisfied. The psychometric properties tested in this study suggest that the ACNJSS demonstrated acceptable reliability and validity. The ACNJSS will be useful for health service researchers and nursing mangers seeking to understand factors affecting nurses' job satisfaction in acute care hospitals.

3.6. Relevance to Nursing Practice and Research

Low job satisfaction has been linked to adverse patients' outcomes (Asif, Jameel, Hussain, Hwang, & Sahito, 2019). It has also been linked to nurses' turnover and low health service quality (Gillet et al., 2018). Being able to identify factors related to acute care nurses' job satisfaction is of utmost importance in preventing these undesired outcomes. Our new instrument can help researchers determine factors related to nurses' job satisfaction levels in addition to nurses' expectations and satisfaction from extrinsic and intrinsic factors that affect nurses' job satisfaction. Providing this kind of information to nursing managers could help them be proactive in preventing the undesired outcomes

of nurse job dissatisfaction, thereby improving organizational outcomes at the same time. Future studies should focus on testing the ACNJSS in other countries such as the United States for possible refinement as well as further testing of its factor structure and other validity aspects. Nurses' job satisfaction is the main predictor of turnover intention (Maqbali, 2015). Identifying the factors associated with nurses' job satisfaction may help in nursing retention and reduce the expected nurses' shortage.

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Chapter 4:
Factors Affecting Job Satisfaction among Acute Care Nurses Working in Rural and Urban Settings[1]

4.1. Introduction

With advances in the extent and complexity of health services, healthcare providers are challenged by the increased demands related to an aging population and broadened access to health care (Tencer, 2016). Several reports have highlighted an increase in demand for nursing care worldwide. For example, the United Kingdom census showed that more nurses are leaving their profession than are being replaced by newcomers (Nursing and Midwifery Council, 2017). In the United State, it has been estimated that there will be a shortfall of 1.1million nurses by 2022 (The American Nurses Association, 2019).

In Canada, the supply of nurses has continued to fluctuate over the years (Canadian Institute for Health Information [CIHI], 2019). The annual growth rate of the nursing workforce declined from 2.2% in 2014 to 1% in 2018 (CIHI, 2019). The proportion of rural nurses to general population is continuing to decline suggesting a heightened RN shortage in rural Canada in the near future (MacLeod et al., 2017).

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Ontario has the lowest RN-to-population ratio in Canada and more nurses are needed to avoid putting patients at risk (Zych, 2018). Furthermore, the distribution of the workforce in Ontario varies with location, generally skewed towards the urban areas with only 6.4% of nurses reported as being employed in a rural or remote area in 2018 (CIHI, 2019).

One of the important strategies to overcome the future nursing shortage is the retention of current nurses. Nurse turnover has been associated with poor patient outcomes, increased costs to the health sector, and decreased quality of nursing care (L. Hayes et al., 2012). As might be expected, there is a negative correlation between job satisfaction and nurses' turnover intention (Ramoo, Abdullah, & Piaw, 2013; Sabanciogullari & Dogan, 2015). Moreover, low job satisfaction has been identified as the leading indicator of nurses' turnover intentions in several studies (O'Brien-Pallas, Murphy, Shamian, Li, & Hayes, 2010; Stewart et al., 2011; Zeytinoglu et al., 2007). Low job satisfaction may contribute to several other undesired outcomes such as nurses' absenteeism and burnout (Lu, Barriball, Zhang, & While, 2012) and reduced patient satisfaction with care (De Simone, Planta, & Cicotto, 2018).

A gap exists in the literature regarding the differences in extrinsic and intrinsic factors that could affect nurses' job satisfaction in rural and urban settings (Yasin, Kerr, Wong, & Bélanger, 2020). Furthermore, no Canadian study has addressed this gap. Thus, the differences and similarities between factors affecting job satisfaction among nurses working in these settings have never been explored in-depth. This study aims to explore the similarities and differences between job satisfaction as expressed by rural and urban

nurses and to examine the intrinsic and extrinsic factors affecting overall job satisfaction and turnover intentions.

4.2. Background

4.2.1. Theoretical framework

Several theories have been developed to describe the factors affecting job satisfaction. These theories can be classified into process theories and needs theories. Process theories look for how different factors lead to job satisfaction while needs theories discuss what are the factors that affect job satisfaction. One of the well-known needs theories in this field is Herzberg's two-factor theory. Frederick Herzberg and colleagues developed their theory based on the assumption that people are motivated by the desire to meet their needs (Herzberg, Mausner, & Snyderman, 1959/2010). Herzberg theorized that job satisfaction is affected by two different sets of factors (Herzberg, 1966; Herzberg et al., 1959/2010). The first set of factors were related to the job context (extrinsic factors). Herzberg described extrinsic factors as hygiene or maintenance factors, which are reported when describing incidents of job dissatisfaction. Furthermore, he proposed that since these factors were derived from the need to avoid unpleasantness, they only promote short-term job satisfaction and are not relevant in the long run (Herzberg et al., 1959/2010). Hygiene factors include company policies and administration, supervision, salary, interpersonal relations, working conditions and job security (Herzberg et al., 1959/2010).

The second set of factors was related more to job content (intrinsic factors). Herzberg referred to intrinsic factors as motivators or satisfiers. These factors were

reported when describing instances of job satisfaction, and they were driven by the need for self-actualization (Herzberg, 1966; Herzberg et al., 1959/2010). Motivating factors included achievement, recognition, the nature of the work itself, responsibility, advancement, and growth. The need for self-actualization is the drive to fulfill employees' satisfaction from intrinsic factors (Herzberg et al., 1959/2010).

To sum up, job satisfaction can be defined as a multidimensional subjective construct resulting from an interaction between extrinsic and intrinsic work factors that are prioritized based on individualized employee expectations (Herzberg, 1966). Since the aim of this study is to identify the factors associated with job satisfaction, a needs theory should be used to explain the factors associated with job satisfaction. Numerous nursing researchers have used Herzberg's theory in several countries (including Canada) to guide job satisfaction research (Lamarche & Tullai-McGuinness, 2009; Tourangeau, Wong, Saari, & Patterson, 2015). In this study, the relationship between extrinsic and intrinsic factors and nurses' job satisfaction was examined. Therefore, Herzberg's two-factor theory was chosen as the theoretical foundation for the study.

4.2.2. Factors associated with job satisfaction

Several extrinsic factors reported in the nursing literature have been linked to nurses' job satisfaction. Studies investigating factors affecting nurses' job satisfaction in urban settings tend to focus more on extrinsic factors compared to rural studies (Yasin et al., 2020). Working conditions (i.e. job demands, job resources, and physical working environment) were one of the most frequently reported extrinsic factors associated with low job satisfaction (Yasin et al., 2020). For example, Zhou et al. (2015) reported work

environment, staffing and long working hours as parts of working conditions that were linked to nurses' job satisfaction or lack thereof. In another study, Sojane et al. (2016) pointed out the importance of benefits, flexibility in work schedule, and leave policy in improving job satisfaction.

In a series of studies using samples of nurses working in urban settings, Laschinger and colleagues showed a positive impact of empowerment -either structural or psychological- on nurses' job satisfaction (Laschinger, 2008; Laschinger, Finegan, & Shamian, 2001a, 2001b; Laschinger, Finegan, Shamian, & Wilk, 2004). Masum et al. (2016) and Sojane et al. (2016) found a relationship between leadership and supervisor support and job satisfaction, while good coworker relationships and collaboration with others in the healthcare team also correlated well with increased job satisfaction (Masum et al., 2016). Using a sample of rural nurses, Mahmoud and Reisel (2014) described the feelings of insecurity that a nurse is filled with when their future at the hospital is uncertain which may lead to reduced job satisfaction, hence linking job security with satisfaction. Therefore, nursing empowerment, supervision quality, job security and colleagues' relationships may affect job satisfaction.

Employees' motivators are mostly intrinsic factors and are the main factors in providing long-lasting job satisfaction (Herzberg, 1966). The opportunity for growth and advancement is an example of factors that significantly enhance job satisfaction (Masum et al., 2016; Sojane et al., 2016). Growth and advancement are linked to educational opportunities; in fact, the opportunity for education itself may improve job satisfaction (B. Hayes, Bonner, & Pryor, 2010). Furthermore, autonomy has shown a positive impact

on nurses' job satisfaction (Laschinger et al., 2001b; Sojane et al., 2016). Conversely, other studies have shown that a highly centralized working culture reduces job satisfaction (Adams & Bond, 2000).

While the location of the hospital in rural or urban areas has been acknowledged as being a significant determinant of several extrinsic and intrinsic variables such as home community satisfaction, availability of resources, interpersonal relationships and working conditions (Penz, Stewart, D'Arcy, & Morgan, 2008), there is a dearth of research comparing job satisfaction among nurses in urban and rural settings (Roberge, 2009; Yasin et al., 2020). This study aims to fill the gap by investigating this aspect of the determinants of job satisfaction and turnover.

4.2.3. Turnover intention and job satisfaction

The empirical link between job satisfaction and turnover intention is well established in several studies (Adriaenssens, De Gucht, & Maes, 2015; Zimmerman, 2008). There is no known Canadian study comparing the effect of job satisfaction on turnover intention among nurses working in rural and urban areas. On the other hand, Baernholdt and Mark (2009) found no difference between rural and urban nurses in the United States in terms of job satisfaction level or turnover intention.

Takase (2010) described turnover intention as a multistage process that includes psychological, cognitive, and behavioral components. It begins with a psychological response to adverse events in organizations which often triggers the intention to leave. Job dissatisfaction, impaired work engagement, and emotional exhaustion are common psychological triggers for turnover intention (Adriaenssens et al., 2015). Leaving one's

job is the last stage and the main behavioral component of turnover intention. Several reviews and meta-analyses have examined the predictors of nurses' turnover. Of note, L. Hayes et al. (2012) reviewed 68 articles from different Western countries including Canada and the United States and concluded that recognition, workload, autonomy, ease of moving to another job, family conflicts, and job satisfaction were associated with nurses' turnover intention.

4.3. The study

4.3.1. Aims

The purpose of this study is to:

1. identify the differences and similarities in extrinsic and intrinsic factors that influence job satisfaction among nurses in urban and rural southern Ontario.
2. determine the impact of job satisfaction on job turnover intention among nurses working in rural and urban settings.

4.3.2. Design

This is a quantitative, non-experimental, cross-sectional correlation study.

4.3.3. Participants

In this study, a disproportionate stratified random sampling approach was used to recruit an equal number of rural and urban nurses working in southern Ontario. This sampling approach facilitates comparison between different groups (Salkind, 2010). An equal sample size of each group assures equal representation of nurses working in both

settings as the actual ratio of rural to urban nurses is less than 1:10 (CIHI, 2019). The required sample size was estimated based on the study purpose and the main statistical tests in the proposed data analysis. An a priori sample size calculation was conducted using G*Power3 software (Faul, Erdfelder, Lang, & Buchner, 2014). Input parameters were a two-tailed test, logistic regression as the statistical test and an alpha of 0.05. The result showed that a total sample of 347 participants was required to achieve a power of 0.80.

In recent studies using mailed surveys with similar Ontario RN samples, the response rates ranged from 38% to 48% (Boamah, Spence Laschinger, Wong, & Clarke, 2018; Read & Laschinger, 2015; Wong & Laschinger, 2013). The College of Nurses of Ontario provided a random list of 1,000 acute care nurses who met the study inclusion criteria that was divided equally between rural and urban nurses. According to Corner and Lemonde (2019), the distribution of 1000 surveys helps to overcome the expected low response rate found in nursing surveys. To potentially increase the response rate, a mixed-mode approach of online and paper surveys was used (Dillman et al., 2014).

The inclusion criteria included acute care registered nurses with at least six months of continuous work experience in southern Ontario, working full-time or part-time and able to read and understand English. Exclusion criteria included nurses employed in temporary positions or not involved in direct patient care, such as educators, advanced practice nurses or those in managerial positions. We asked for six months of continuous working experience to give participants enough exposure to extrinsic and intrinsic factors in their work settings.

4.3.4. Data Collection Procedure

Data were collected using questionnaires between May 2019 and July 2019. The participants were given the option to respond either online or by postal surveys. Two follow-up reminders were sent by postal mail after 10 days and 20 days of initial mail out.

4.3.5. Ethical considerations

Research Ethics Committee approval was obtained from Western University ethical review board. The letter of information explained the study and informed consent was implied by the completion and return of the surveys.

4.3.6. Data analysis

Data were analyzed using IBM-SPSS version 24 (IBM Corp, 2016). Descriptive statistics were used to describe the sample. Logistic regression was used to assess the impact of extrinsic and intrinsic factors on job satisfaction. The Mann-Whitney U-Test was used to assess the similarities and differences in extrinsic and intrinsic factors between rural and urban nurses. Simple linear regression was used to assess the impact of job satisfaction on turnover intention. The Mann-Whitney U-Test was used to assess the difference in job satisfaction score and turnover intention between rural and urban nurses.

All items included in the ACNJSS and ATS were assessed for missing data. The extent of missing data was very low (less than 0.28%). Due to the low amount of missing data and the possible bias if participants were excluded from analysis, data from all but

one eligible subject were included in the analysis. One survey was excluded since more than 80% of the questionnaire items were not answered.

4.3.7. Instruments

4.3.7.1. Acute Care Nurses Job Satisfaction Scale

The development and validation of the Acute Care Nurses' Job Satisfaction Scale (ACNJSS) by Yasin, Kerr, Wong, and Bélanger (in press) was guided by a comprehensive literature review and Herzberg's theory. The ACNJSS is composed of 31 items using a six-point Likert scale format ranging from very dissatisfied (1) to very satisfied (6). The general job satisfaction scale is calculated by taking the average score of all 31 items divided by maximum score of six and then multiply it by 10. The final score ranges from 1(no job satisfaction) to 10 (extremely job satisfied).

4.3.7.2. Anticipated Turnover Scale

The Anticipated Turnover Scale (ATS) was used to measure nurses' intention to leave. The instrument was developed by Hinshaw and Atwood (1985) to test turnover intention among nurses (Hinshaw, Atwood, Gerber, & Erickson, 1985). The ATS is composed of 12 items with a seven-point Likert scale format ranging from strongly agree (1) to strongly disagree (2). The total score is calculated by summing the scores of all items and then dividing by 12. Higher scores correspond with greater intent to leave one's current position or job.

4.3.8. Validity and reliability

4.3.8.1. Acute Care Nurses Job Satisfaction Scale

In the original study of the ACNJSS, exploratory factor analysis suggested a six-factor fit for the data, with the following factors proposed: achievement/job interest/responsibility, hospital policy, quality of supervision, peer support/work condition, growth/advancement, and benefits/job security. The Cronbach's reliability coefficients for the ACNJSS factors ranged between 0.71 and 0.92 (Yasin et al., in press). Evidence of construct validity and content validity was supported by exploratory factor analysis and Lawshe's method respectively (Yasin et al., in press).

4.3.8.2. Anticipated Turnover Scale

In the original study of the ATS, principal component factor analysis was used to examine construct validity. The Cronbach's α was 0.84 showing high internal consistency (Hinshaw et al., 1985). A meta-analysis study was conducted to evaluate the reliability and construct validity of the ATS findings among several nursing studies in the USA. The ATS demonstrated excellent reliability with a Cronbach's alpha value of α =0.89. The overall Mean Weighted Effect Size (MWES) of predictive validity correlating ATS with four job satisfaction measures (the Index of Work Satisfaction, the modified Job Satisfaction Survey, the McCloskey-Mueller Satisfaction Survey and the general job satisfaction subscale of the Job Diagnostic Index in seven studies was -0.53 (Barlow & Zangaro, 2010).

4.4. Results

The total number of returned surveys was *N*=437, of which *n*=12 were from the online survey and *n*=425 were returned by post. The final number of useable and completed responses was *N*=349 with a response rate of 36%. Excluded responses were due to blank returns (*n*=12), wrong address (*n*=18), incomplete questionnaire (*n*=1), ineligible due to exclusion criteria (*n*=9) and multiple responses retained surveys (*n*=48). The final usable surveys were 349.

4.4.1. Sample characteristics

In this study, 349 participants returned usable surveys. The study participants ranged in age from 22 to 71 years (*M*=42.7). The overall nursing experience ranged between 1 year and 51 years (*M*=18.1). Most of the participants were female (96.3%), working as registered nurses (89.4%) and married (71.3%). Most had a bachelor's degree (51%) followed by diploma holders (47%). The participants that worked in urban hospitals represented 51.5% of the study sample, the remainder being employed in rural settings. Furthermore, just over half of the participants worked in a critical care unit (51.6%). Finally, full-time nurses represented the majority of the sample (67.9%). See Table 4.1 for details based on participant settings.

Table 4.1: Sample characteristics

Sample characteristic		Rural (*n*=167)		Urban (*n*=177)	
		n	%‡	*n*	%‡
Gender					
	Male	4	2.4	7	4
	Female	163	97.6	169	95.5
	Other	0	0	1	0.6

Sample characteristic		Rural (*n*=167)		Urban (*n*=177)	
Education	Diploma	72	43.1	88	49.7
	Bachelor	90	53.9	86	48.6
	Graduate	5	3	3	1.7
Marital status	Single	37	22.2	25	14.1
	Married	114	68.3	133	75.1
	Divorced	12	7.2	16	9
	Widowed	2	1.2	0	0
	Not answered	2	1.2	3	1.7
Position	Staff nurse	147	88	160	90.4
	Charge nurse	20	12	17	9.6
Employment	Full time	112	32.9	120	67.8
	Part-time	55	67.1	57	32.2
		M†	***SD***†	***M***†	***SD***†
Age/years		42	13	43	13
Experience/years		18	13.4	19.3	12.8

†M= Mean and SD= Standard deviation
‡Valid percentage reported

4.4.2. Factors affecting job satisfaction

To identify the factors that affect nurses' job satisfaction, we used binary logistic regression. The median overall score for job satisfaction in this study was 7 (out of 10) and the interquartile range was 2. The median was used as a cutoff to determine low and high job satisfaction whereby a score less than seven represents low job satisfaction and seven and above represents high job satisfaction. Median split is a common practice for categorizing continuous variables in logistic regression (DeCoster, Gallucci, & Iselin, 2011). The decision to choose this cut-point approach was made after a careful review of the job satisfaction scores. To control for the effect of possible confounding variables on job satisfaction, age, gender, marital status, level of education, years of experience, and employment status were entered in the first model. Later, rurality (i.e., rural vs. urban)

was added to the second model. Finally, the six ACNJSS factors that represent the extrinsic and intrinsic factors were entered in the last model.

In the first model, none of the demographic variables were significantly associated with nurses' job satisfaction, (χ^2=20.346, *df*= 15, *p*=0.16). Similarly, in the second model, rurality had no significant association with nurses' job satisfaction (χ^2=23.49, *df*= 16, *p*=0.101). In the final model, achievement/job interest/responsibility, hospital policy, quality of supervision, peer support/work condition, growth/advancement, and benefits/job security were added. Using the Hosmer and Lemeshow test, the final model demonstrated a good fit, (χ^2= 6.37, *df*= 8, *p*=0.61). Peer support/work condition (OR=2.08, 95% CI [1.14, 3.78]), quality of supervision (OR=1.66, 95% CI [1.10, 2.50]), and achievement/job interest/responsibility (OR=7.97, 95% CI [3.4, 18.70]) were significant predictors of job satisfaction ($\chi 2$=193.01, *df*= 22, p<0.0001). Both pseudo R-squared values indicated the final model was effective in predicting job satisfaction status (0.43 for Cox & Snell and 0.67 for Nagelkerke). Achievement/job interest/responsibility had the strongest association with job satisfaction (*Wald*=22.8, *df*= 1, p<0.001) followed by quality of supervision (*Wald*=5.91, *df*= 1, *p*<0.05) and peer support/work condition (*Wald*=5.74, *df*= 1, *p*<0.05). (See Table 4.2 for more details).

Table 4.2: Logistic regression

Variable	Model 1			Model 2			Model 3		
	B	*SE*	*OR*	*B*	*SE*	*OR*	*B*	*SE*	*OR*
Age	-.009	.032	.991	-.011	.033	.989	-.067	.047	.935
Experience	-.017	.030	.983	-.018	.031	.982	.042	.045	1.043
Employment status	.064	.302	1.07	.077	.303	1.080	.008	.479	1.008
Marital status *(Base = Widowed)*									
Single	-.196	1.205	.822	-.233	1.294	.792	-2.294	7.508	.101
Married	1.392	1.396	4.022	-.256	1.226	.774	-2.655	7.485	.070
Divorced	-1.06	1.848	.347	1.414	1.414	4.112	-.922	7.538	.398
Education *(Base = Graduate)*									
Diploma	.310	.888	1.363	.421	.891	1.52	1.613	1.324	5.016
BScN	.385	.858	1470	.456	.856	1.58	2.102	1.183	8.182
Gender *(Base =Male)*									
Female	22.71	40193	±	22.515	40193	±	22.681	40193	±
Others	22.41	40193	±	22.147	40193	±	21.475	40193	±
Working area *(Base =Day case)*									
Clinic	20.207	16384	±	20.279	16349	±	16.856	15493	±
Inpatient	-.606	.766	.545	-.571	.768	.565	.179	1.295	1.196
Critical	-.130	.621	.878	-.125	.624	.883	-.009	1.087	.991
Others	-.121	.604	.886	-.096	.606	.908	.386	1.073	1.470
Rurality				-.496	.282	.609	-.551	.471	.576

	Model 1	Model 2	Model 3		
Extrinsic and Intrinsic factors‡					
Growth and advancement			.589	.308	1.803
Benefits and job security			.026	.307	1.026
Peer support/work condition†			.732	.305	2.079
Quality of supervision†			.509	.209	1.664
Hospital policy			-.136	.303	.873
Achievement/job interest/responsibility†			2.076	.435	7.974
-2LL	334.303	331.157	161.635		
	χ^2=20.346, *df*=15, *p*=0.159	χ^2=23.492, *df*=16, *p*=0.101	χ^2=193.014, *df*=22, *p*<0.001		
Nagelkerke R^2	0.09	0.103	0.668		
Cox & Snell	0.058	0.066	.431		
Hosmer and Lemeshow Test	*p*=0.64	*p*=0.322	*p*= 0.606		
Classification accuracy	78.7%	78.9%	88.9%		

† = $p<0.05$

± = More than 1 million

‡= From Acute Care Nurses Job Satisfaction Scale (ACNJSS)

4.4.3. Differences and similarities in extrinsic and intrinsic factors

Results from Kolmogorov-Smirnov test and Shapiro-Wilk tests indicated that job satisfaction, intrinsic and extrinsic factors scores were not normally distributed ($p<0.001$) thus a non-parametric test was used. The Mann-Whitney U-Test does not require normal distribution of the dependent variables. Therefore, it was used to test for differences in job satisfaction, extrinsic and intrinsic factors among rural and urban nurses. There was no difference between rural and urban nurses in their overall job satisfaction (U=16,031, $p>0.05$). However, there was a significant difference between rural and urban nurses in satisfaction from benefits and job security (U=17,217.5, $p<0.01$). The rural nurses had a higher satisfaction from benefits and job security with a median score of 4.2 (SD= 1.03) compared to urban nurses with a median score of 3.8 (SD=1.08). No other significant difference was found between rural and urban nurses in terms of satisfaction from extrinsic and intrinsic factors.

4.4.4. The effect of job satisfaction on turnover intention

Results of the Kolmogorov-Smirnov test, the Shapiro-Wilk test and the histogram distribution, suggested that the turnover intention scores were not normally distributed. The Mann-Whitney U-Test was used to test for differences in turnover intention among rural and urban nurses. There was no difference between rural and urban nurses in terms of their turnover intention (U= 13,593, $p>0.05$). To assess the impact of nurses' job satisfaction on turnover intention, simple linear regression was performed. Log transformation to adjust for the non-normality distribution of turnover intention scores

was performed to meet the requirement of linear regression. Job satisfaction was found to be moderately negatively correlated with turnover intention (r=-0.55, p<0.01). The regression analysis showed that job satisfaction was a significant predictor of turnover intention (β=-0.548, p<0.001) and accounted for 30% of the variance in observed turnover intention, F (1,340) =145.71, p<0.001.

4.5. Discussion

4.5.1. Factors affecting job satisfaction

Among the factors explored in this study, peer support/work condition, quality of supervision and achievement/job interest/responsibility were significant predictors of job satisfaction. Less favorable working conditions such as high workload, low staffing and extended working hours were found to be negatively associated with job satisfaction (Yasin et al., 2020). Physical working conditions such as noisy environments may also reduce job satisfaction (Applebaum, Fowler, Fiedler, Osinubi, & Robson, 2010).

Peer support includes interpersonal relationships with health workers from the same profession and other health professions. In their review of 21 articles, Utriainen and KyngÄS (2009) found that interpersonal relationships were significantly associated with job satisfaction. Similarly, physician-nurse collaboration was found to be associated with job satisfaction in the study by (Pakpour, Ghafourifard, & Salimi, 2019), which is congruent with a previous Canadian study where nurses felt more satisfaction when they perceived coworkers' support (Tourangeau & Cranley, 2006).

Supervisor emotional support is also associated with higher job satisfaction (Pohl & Galletta, 2017). Hunt (2014) pointed out the importance of leadership support in improving nurses' job satisfaction. Several other studies indicated that practices associated with positive leadership styles improve nurses' job satisfaction (Shahdadi, Gharebagh, Allahyari, Balouchi, & Bandani, 2016; Wagner, Warren, Cummings, Smith, & Olson, 2013). The results of this study support the findings of Masum et al. (2016) which pointed to the positive association between supervisor support and nurses' job satisfaction.

Intrinsic factors characterized by achievement/job interest/responsibility were the strongest predictor of job satisfaction in this study (*Wald*=22.8, *df*= 1, $p<0.001$). Intrinsic factors have a long-lasting and crucial role in improving job satisfaction compared with extrinsic factors (Herzberg, 1966; Herzberg et al., 1959/2010). The finding of this study is consistent with this assumption as achievement/job interest/responsibility has a much stronger association with job satisfaction compared to the quality of supervision or peer support/work condition (*Wald* =22.8 vs. 5.91 and 5.74, respectively). In this study, job growth and advancement and hospital policy were not associated with job satisfaction. A possible reason for this is related to the Canadian healthcare system, wherein all hospitals must get accredited from Accreditation Canada, and for them to do so, they are required to develop a staff training program and review and update policies periodically. Benefits and job security were also not found to be associated with job satisfaction, possibly because most nurses in Ontario are unionized (Ontario Nurses' Association, 2019); the union has a significant role in fighting for nurses' benefits and protecting them from layoffs.

4.5.2. Job satisfaction of rural versus urban nurses

Results from this study indicate no significant difference between rural and urban nurses in terms of job satisfaction. This is consistent with the findings of Baernholdt and Mark (2009) who found no difference in job satisfaction levels between rural and urban nurses working in hospital settings. In addition, satisfaction from benefits and job security was higher among rural nurses compared to urban nurses. MacLeod et al. (2017) found that rural nurses in Canada derive job satisfaction from high income and preference for working in rural settings. Another possible reason is the high demand for nurses in rural areas significantly may reduce the risk for layoffs compared to urban settings where there is a relatively high nursing supply (MacLeod et al., 2017).

4.5.3. Turnover intention of rural versus urban nurses

There was no difference in turnover intention between rural and urban nurses, which also supports a similar finding by Baernholdt and Mark (2009). However, the results showed a negative association between job satisfaction and turnover intention in both urban and rural settings. This relationship between nurses' job satisfaction and turnover intention is well documented in the nursing literature (Nei, Snyder, & Litwiller, 2015).

4.5.4. Limitations and future research

The study used a cross-sectional design which reduces the external validity of the findings and limits the inference of causality (Taris, 2000). Future research using a longitudinal design to explore the factors associated with job satisfaction is suggested.

Although Doty and Glick (1998) argued that common method variance may not invalidate the results, common method variance cannot be excluded as a possible limitation. Using several data collection methods and multiple data sources may reduce the risk of common method variance in future studies. Despite using mixed data collection strategies with several reminders, the modest response rate (36%) may be a possible limitation of the study. The use of a non-proportional stratified random sample may have improved the quality of the data and increased internal validity, but on the other hand, a sample with an equal number of rural and urban nurses may limit the generalizability of the findings. Finally, as nurses live in different contexts with different expectations, future studies should discuss and compare the factors that affect nurses' job satisfaction in different contexts and countries such as expatriates' nurses, commuting nurses, and newly graduated nurses.

4.6. Conclusion

This study addresses a gap in the knowledge of the difference and similarities in factors affecting job satisfaction among nurses working in rural and urban settings in Canada. While several extrinsic and intrinsic factors were found to be associated with nurses' job satisfaction, there was no significant difference observed between rural and urban nurses in terms of job satisfaction and turnover intention. Rural nurses were more satisfied with their benefits and job security. Consistent with findings of previous studies, job satisfaction was found to have a significant impact on turnover intention.

These findings can be utilized by unions, governmental agencies, and other professional associations to make a case for developing strategies that enhance work

conditions, job security, and benefits. Due to the vital role of leadership in job satisfaction, developing a customized training program for nursing managers that involve positive leadership styles and supervisors' support including celebrating individuals' and group achievements may improve job satisfaction. Also, developing policies that increase and streamlines nurses' job responsibility creating a general feeling of owning their work, may increase job interest and peer support which will promote nurses' job satisfaction and decrease turnover in different settings.

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Chapter 5:
Integrated summary and its implications

5.1. Discussion

In this chapter, a summary of the study's key findings is presented, followed by a discussion of the implications and recommendations for nursing practice, education and research. The purposes of this dissertation were a) to identify the differences and similarities in extrinsic and intrinsic factors that influence job satisfaction among nurses in urban and rural southern Ontario; b) to examine the impact of job satisfaction on nurses' turnover intention in rural and urban settings; c) to develop a valid instrument that measures acute care nurses job satisfaction. The research questions addressed by the study were: a) is there is a difference in job satisfaction level between acute care nurses working in rural and urban settings? b) is there is a difference in turnover intention level between acute care nurses working in rural and urban settings? c) are there differences in extrinsic and intrinsic factors that influence job satisfaction among nurses working in urban and rural southern Ontario? d) what is the impact of job satisfaction on nurses' turnover intention among nurses working in rural and urban settings?

5.2. Key Findings

5.2.1. Acute Care Nurses' Job Satisfaction Scale (ACNJSS)

The findings of this study demonstrate evidence of acceptable reliability and validity of the newly developed ACNJSS. The exploratory factor analysis revealed a six-factor instrument, composed of 31 items rated on a six-point Likert scale format. The

items selection of this instrument was done after a careful review of the literature, combined with selecting suitable items from the Misener Nurse Practitioner Job Satisfaction Scale (MNPJSS) and testing the content validity using Content Validity Index (CVI) and the Lawshe method for calculating Content Validity Index (CVR; Lawshe, 1975).

The ACNJSS is a useful tool for measuring nurses' job satisfaction in acute care settings. Herzberg's two-factor theory was used as the theoretical foundation for the development of the ACNJSS. Nurses working in acute care settings have different work-related stressors and face different expectations than nurses working in other settings. For example, the accelerated pace of introducing advanced technology in acute care settings has escalated the demand for learning new technology (Elgin & Bergero, 2015). Consequently, the expectations for education, growth, and advancement may be different in acute care settings. For this reason and more, developing a dedicated research instrument that focuses on measuring job satisfaction of acute care nurses was deemed crucial.

5.2.2. Job Satisfaction in Rural and Urban Settings

The findings demonstrated no significant difference in job satisfaction levels between nurses working in rural and urban settings. This is consistent with Baernholdt and Mark (2009) study in the United States (US) where no difference in job satisfaction was found between rural and urban nurses. Job satisfaction is a subjective and multidimensional construct (Herzberg et al., 1959/2010), and the differences in expectations and availability of resources between rural and urban nurses may make it difficult to reveal a difference in the overall job satisfaction level. This argument is

supported by the finding that satisfaction from benefits and job security was significantly higher among rural nurses compared to urban nurses. Nurses in rural areas may have different expectations of benefit and job security but still have a similar level of job satisfaction compared to their urban counterparts considering the interaction between different expectations from other factors.

5.2.3. Extrinsic and Intrinsic Factors Affecting Job satisfaction

Several extrinsic and intrinsic factors were found to be significantly associated with job satisfaction. Achievement/job interest/responsibility had the highest impact on job satisfaction followed by quality of supervision and peer support/work condition. Intrinsic factors are considered to have a longer-lasting effect on improving job satisfaction compared to the extrinsic factors since satisfaction from intrinsic factors originates from the need for self-actualization (Herzberg,1966). In addition, intrinsic factors play an important role as motivators that lead to job satisfaction and are therefore the major players in improving job satisfaction. On the other hand, extrinsic factors play an important role in preventing job dissatisfaction rather than directly motivating for satisfaction as they originated from the need to avoid unpleasantness (Herzberg et al., 1959/2010). Thus, their main contribution is to the maintenance rather than the promotion of job satisfaction. Our study findings are consistent with the Herzberg assumption of the role of intrinsic factors in producing job satisfaction and the role of extrinsic factors in maintain and preventing job dissatisfaction (Herzberg et al., 1959/2010).

5.2.4. Turnover Intention in Rural and Urban Settings

Similar to job satisfaction, the study found no significant difference in turnover intention between nurses working in rural and urban settings. This is also consistent with Baernholdt and Mark (2009) study among rural and urban nurses in the United States. Several possible explanations may account for this. While nurses in urban hospitals typically have larger staff complements to deal with a higher workload and more complex cases, hospitals in rural areas generally have lower occupancy that overcomes the limited number of nurses (Baernholdt & Mark, 2009). The expectation of nurses working in rural areas may also be different than those in urban areas such as salary or workload expectations. Furthermore, family ties and community connectedness may alter nurses' decision to leave their job in rural areas; most nurses working in rural communities were born and raised in those communities and are thus less likely to leave their jobs there (MacLeod et al., 2017). All things considered, nurse turnover intention is a complex concept affected by several factors. Economic considerations, personal reasons, and community affiliations may affect the decision to leave or stay in the current job.

5.2.5. Job Satisfaction and Turnover Intention

Another key finding was a negative association between job satisfaction and turnover intention. This is consistent with recent studies of nurses' job satisfaction and turnover intention (Fasbender & Grimshaw, 2019; Gillet et al., 2018) with similar findings covering either rural, urban or both settings. Low job satisfaction is one of the leading causes of nurses' turnover intention. The effect of job satisfaction on turnover

intentions is similar for both rural and urban nurses. However, other factors may mitigate the impact of job satisfaction on actual turnover such as community satisfaction, job vacancy, and family ties. Market factors such as limited job offers and commitment to work in rural areas may also limit the actual nurses' turnover. In a recent metanalysis, it was found that the macroeconomic factors such as growth, inflation and unemployment may influence the relationship between turnover intention and actual turnover behavior (Wong, Feldman, & Cheng, 2017).

5.3. Implications for Nursing Practice (Management)

Published research suggests that nurse's job satisfaction correlates positively with the quality of nursing service (Koy, Yunibhand, Angsuroch, & Fisher, 2015), and patients' satisfaction (De Simone et al., 2018) and negatively with adverse patient outcomes (Boamah et al., 2018). In a situation where the quality of nursing service is under question and there is a high incidence of adverse patient outcomes, nurses' job satisfaction may be the subject of examination. Decision-makers may thus include nurses' job satisfaction as one of the possible causes of low-quality indicators. They may also use the ACNJS to guide the direction and priority of improvement measures and justify financial spending in order to improve nurses' job satisfaction.

As achievement/job interest/responsibility has the most significant impact on nurses' job satisfaction in this study, nursing managers may invest in developing strategies that improve structural empowerment and enhance the climate of work ownership to improve psychological empowerment. Celebrating individual and group achievements such that those involved feel the value of their work is being appreciated

may help in improving job satisfaction. These and similar strategies will increase work engagement, responsibility and job interest and consequently job satisfaction.

Quality of supervision was a significant predictor of job satisfaction. Therefore, the hospital education and training department should develop a policy of training programs for nursing managers that includes aspects that improve the quality of nurse supervisors. Also, the recruitment and selection process and interviews of suitable candidates for supervisory positions may include a focus on their proposed strategies to improve and maintain nurses' job satisfaction.

Peer support and work conditions were also found to be associated with nurses' job satisfaction. People tend to do better when they like their working condition and their colleagues. Thus, the human resource department may engage in developing team building activities to establish a friendly and fun working environment. Hospital designers may make practical aesthetic adjustments to hospital physical environments such as reducing white noise and light and maintaining adequate spacing and a natural look environment. Hospital management should also make efforts to recruit adequate staff so as to maintain a tolerable workload for those employed.

Finally, this study found that rural nurses were more satisfied with benefits and job security compared to urban nurses. In this regard, hospital administrators, nursing managers and other policymakers in urban settings may reform the existing policies to enhance benefits and job security. Nursing unions and other nursing professional organizations can use the findings of this study to ensure proper attention is given to the contracts of acute care nurses so that they receive acceptable benefits and job security plans as a strategy to prevent low job satisfaction.

5.4. Implications for Nursing Education

Many nursing programs are shifting curriculum from a traditional educational approach to a concept-based curriculum (Repsha, Quinn, & Peters, 2020). Collaboration, health care systems, health policy, leadership/management, and professional behaviors are all important concepts in nursing. These study findings may provide an evidence-based practice example when teaching these concepts. For example, students can participate in discussions of scenarios about the importance of the quality of supervision in improving nurses' job satisfaction. Job satisfaction has shown to play a critical role in nurses' turnover intention. Nursing leadership courses may use this finding to emphasize on the significance of integrating job satisfaction theories in the course curriculum. Last, but not least, consideration of intrinsic and extrinsic factors into nursing curriculum as a possible contributors of nursing job satisfaction may prepare the students for a better leadership role in the future and can be a proactive paradigm shift to reduce nurses' turnover.

5.5. Implications for Future Research

The findings of this study provide summary evidence of the significant impact of extrinsic and intrinsic factors on nurses' job satisfaction. There was no difference between rural and urban nurses in job satisfaction level and turnover intention, even though the expectations of nurses in these different settings may be different based on the context and community needs. Future researchers may replicate this study and examine the differences in nurses' job satisfaction in different Canadian and international contexts. For example, studies can compare the factors that affect job satisfaction of expatriate vs

local nurses or investigate the impact of community satisfaction or preferences of rural or urban lifestyle on nurses' job satisfaction.

Although in this study, job dissatisfaction was found to be an undisputed antecedent of turnover intention, other factors like personal, specific community, or other moderating effects can contribute to the prediction of nurses' turnover intentions, such as the demand and supply of nurses, opportunities for future jobs, and family ties. These factors could be examined in future studies. Furthermore, a qualitative study would probably reveal more interesting insights of this phenomenon. The ACNJSS is a new instrument designed specifically for measuring job satisfaction of nurses working in acute care settings. Future studies may be conducted to further validate or modify this instrument in English and non-English speaking communities based on specific cultural context and expectations. Furthermore, other validity and reliability measures may be used in future studies to provide further validation of the ACNJSS.

5.6. Conclusions

To the best of the author's knowledge, this study is the first one in the Canadian context to examine the differences in factors affecting nurses' job satisfaction in rural and urban settings. Findings from this study indicated that satisfaction derived from intrinsic and extrinsic factors can be used to improve acute care nurses' overall job satisfaction in both rural and urban settings and ultimately reduce nurses' turnover intention. Moreover, the findings signify the importance of achievement/job interest/responsibility as potentially powerful intrinsic factors in improving job satisfaction. The results of this study, which provide further empirical evidence of the validity of Herzberg's two- factor

theory, may have several implications for future research, nursing practice, and education.

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Appendices

Appendix A: Ethics Approval Letters

Western Research

Date: 15 January 2019

To: Dr. Mickey Kerr

Project ID: 111803

Study Title: Factors Affecting Job Satisfaction and Turnover Intention: A Comparison Study of Acute Care Nurses Working in Rural and Urban Communities

Application Type: HSREB Initial Application

Review Type: Delegated

Full Board Reporting Date: January 29, 2019

Date Approval Issued: 15/Jan/2019

REB Approval Expiry Date: 15/Jan/2020

Dear Dr. Mickey Kerr

The Western University Health Science Research Ethics Board (HSREB) has reviewed and approved the above mentioned study as described in the WREM application form, as of the HSREB Initial Approval Date noted above. This research study is to be conducted by the investigator noted above. All other required institutional approvals must also be obtained prior to the conduct of the study.

Documents Approved:

Document Name	Document Type	Document Date
Anticipated Turnover Among Nursing Staff	Online Survey	Received January 11, 2019
Anticipated Turnover Among Nursing Staff	Paper Survey	Received January 11, 2019
Demographic sheet	Online Survey	Received January 11, 2019
Demographic sheet	Paper Survey	Received January 11, 2019
Job Satisfactrion Survey	Online Survey	Received January 11, 2019
Job Satisfactrion Survey	Paper Survey	Received January 11, 2019
LOI	Letter Document	11/Jan/2019
LOI	Written Consent/Assent	11/Jan/2019
proposal FOR ETHICS	Protocol	Received January 11, 2019

No deviations from, or changes to, the protocol or WREM application should be initiated without prior written approval of an appropriate amendment from Western HSREB , except when necessary to eliminate immediate hazard(s) to study participants or when the change(s) involves only administrative or logistical aspects of the trial.

REB members involved in the research project do not participate in the review, discussion or decision.

The Western University HSREB operates in compliance with, and is constituted in accordance with, the requirements of the TriCouncil Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2); the International Conference on Harmonisation Good Clinical Practice Consolidated Guideline (ICH GCP); Part C, Division 5 of the Food and Drug Regulations; Part 4 of the Natural Health Products Regulations; Part 3 of the Medical Devices Regulations and the provisions of the Ontario Personal Health Information Protection Act (PHIPA 2004) and its applicable regulations. The HSREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000940.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Karen Gopaul, Ethics Officer on behalf of Dr. Philip Jones, HSREB Vice-Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Western Research

Date: 2 April 2019

To: Dr. Mickey Kerr

Project ID: 111803

Study Title: Factors Affecting Job Satisfaction and Turnover Intention: A Comparison Study of Acute Care Nurses Working in Rural and Urban Communities

Application Type: HSREB Amendment Form

Review Type: Delegated

Full Board Reporting Date: April 23, 2019

Date Approval Issued: 02/Apr/2019

REB Approval Expiry Date: 15/Jan/2020

Dear Dr. Mickey Kerr ,

The Western University Health Sciences Research Ethics Board (HSREB) has reviewed and approved the WREM application form for the amendment, as of the date noted above.

Documents Approved:

Document Name	Document Type	Document Date
Demographic sheet	Other	19/Mar/2019
LOI	Consent Form	19/Mar/2019
research protocol	Protocol	19/Mar/2019

REB members involved in the research project do not participate in the review, discussion or decision.

The Western University HSREB operates in compliance with, and is constituted in accordance with, the requirements of the TriCouncil Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2); the International Conference on Harmonisation Good Clinical Practice Consolidated Guideline (ICH GCP); Part C, Division 5 of the Food and Drug Regulations; Part 4 of the Natural Health Products Regulations; Part 3 of the Medical Devices Regulations and the provisions of the Ontario Personal Health Information Protection Act (PHIPA 2004) and its applicable regulations. The HSREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000940.

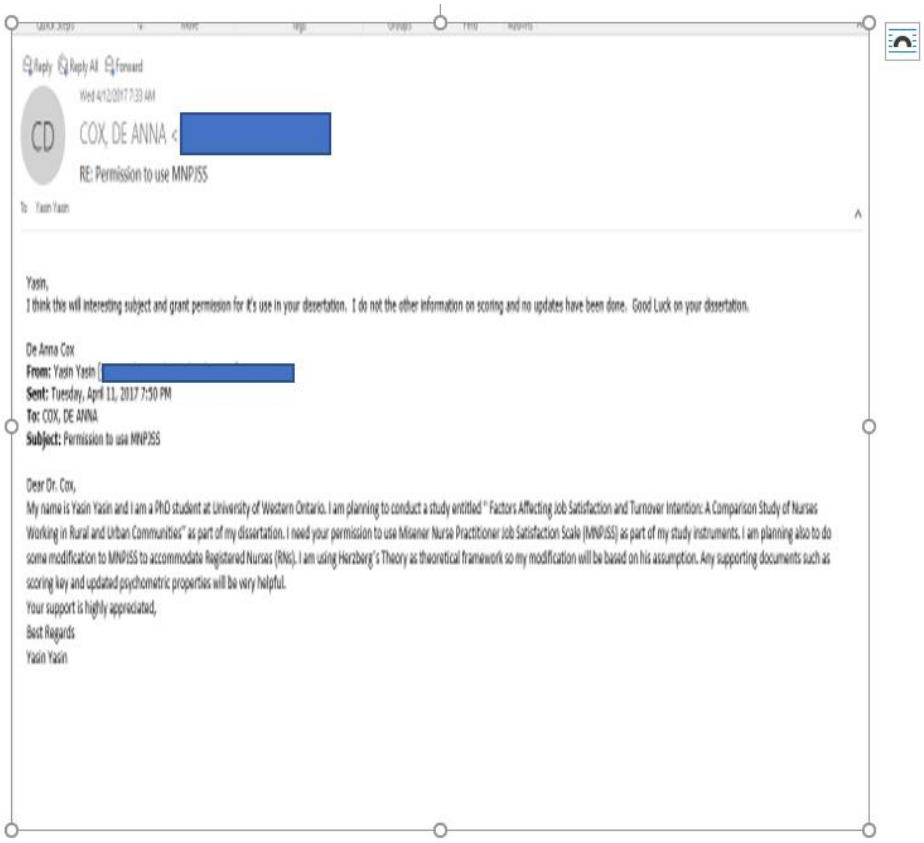
Please do not hesitate to contact us if you have any questions.

Sincerely,

Karen Gopaul, Ethics Officer on behalf of Dr. Philip Jones, HSREB Vice-Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Appendix B: The Misener Nurse Practitioner Job Satisfaction Scale Author Approval



Reply Reply All Forward

Wed 4/12/2017 7:33 AM

CD COX, DE ANNA <[redacted]

RE: Permission to use MNPJSS

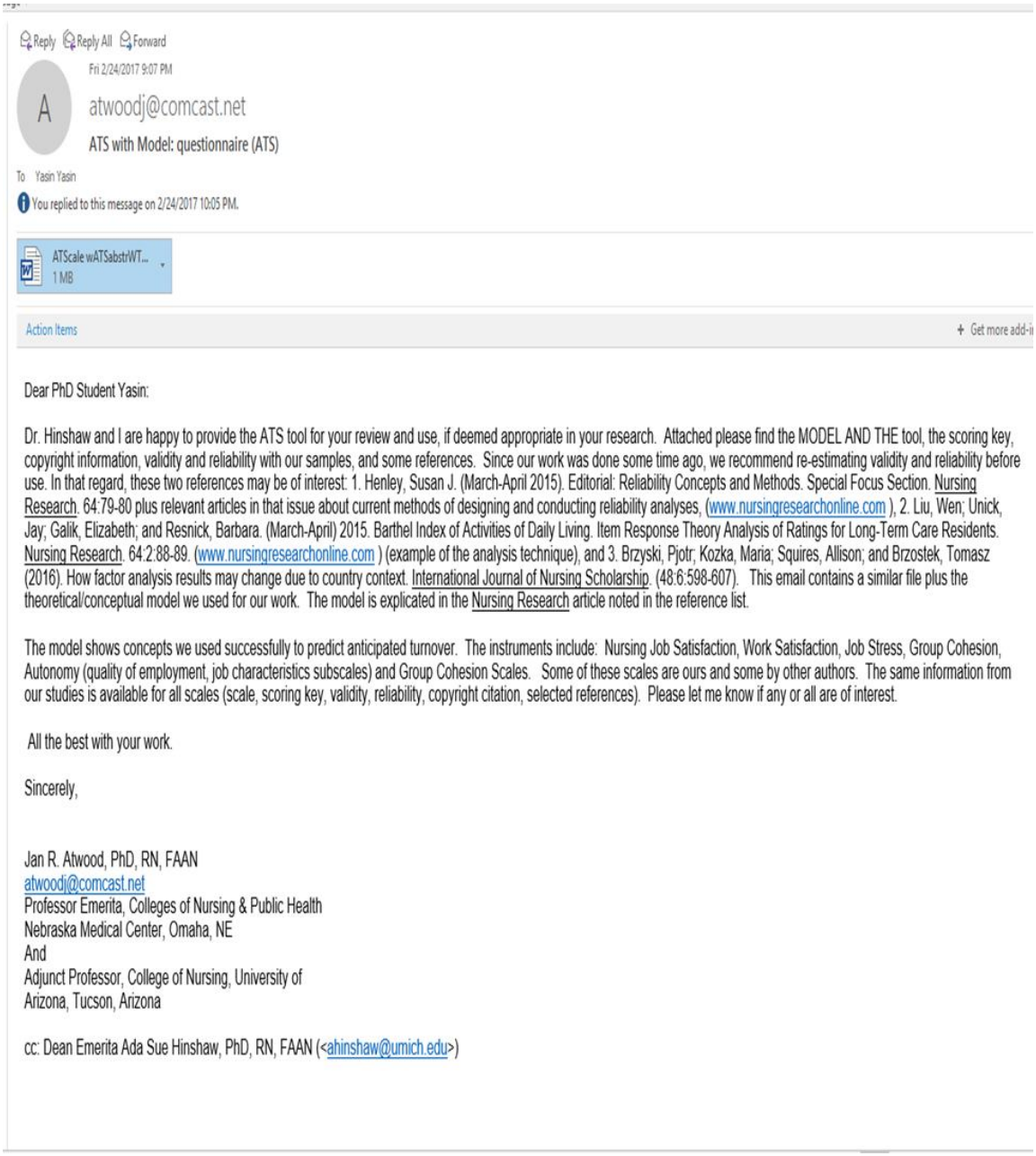
To Yasin Yasin

Yasin,
I think this will interesting subject and grant permission for it's use in your dissertation. I do not the other information on scoring and no updates have been done. Good Luck on your dissertation.

De Anna Cox
From: Yasin Yasin [[redacted]
Sent: Tuesday, April 11, 2017 7:50 PM
To: COX, DE ANNA
Subject: Permission to use MNPJSS

Dear Dr. Cox,
My name is Yasin Yasin and I am a PhD student at University of Western Ontario. I am planning to conduct a study entitled " Factors Affecting Job Satisfaction and Turnover Intention: A Comparison Study of Nurses Working in Rural and Urban Communities" as part of my dissertation. I need your permission to use Misener Nurse Practitioner Job Satisfaction Scale (MNPJSS) as part of my study instruments. I am planning also to do some modification to MNPJSS to accommodate Registered Nurses (RNs). I am using Herzberg's Theory as theoretical framework so my modification will be based on his assumption. Any supporting documents such as scoring key and updated psychometric properties will be very helpful.
Your support is highly appreciated,
Best Regards
Yasin Yasin

Appendix C: The Anticipated Turnover Scale Author Approval



Reply Reply All Forward

Fri 2/24/2017 9:07 PM

A atwoodj@comcast.net

ATS with Model: questionnaire (ATS)

To Yasin Yasin

You replied to this message on 2/24/2017 10:05 PM.

ATScale wATSabstrWT... 1 MB

Action Items + Get more add-i

Dear PhD Student Yasin:

Dr. Hinshaw and I are happy to provide the ATS tool for your review and use, if deemed appropriate in your research. Attached please find the MODEL AND THE tool, the scoring key, copyright information, validity and reliability with our samples, and some references. Since our work was done some time ago, we recommend re-estimating validity and reliability before use. In that regard, these two references may be of interest: 1. Henley, Susan J. (March-April 2015). Editorial: Reliability Concepts and Methods. Special Focus Section. Nursing Research. 64:79-80 plus relevant articles in that issue about current methods of designing and conducting reliability analyses, (www.nursingresearchonline.com), 2. Liu, Wen; Unick, Jay; Galik, Elizabeth; and Resnick, Barbara. (March-April) 2015. Barthel Index of Activities of Daily Living. Item Response Theory Analysis of Ratings for Long-Term Care Residents. Nursing Research. 64:2:88-89. (www.nursingresearchonline.com) (example of the analysis technique), and 3. Brzyski, Pjotr; Kozka, Maria; Squires, Allison; and Brzostek, Tomasz (2016). How factor analysis results may change due to country context. International Journal of Nursing Scholarship. (48:6:598-607). This email contains a similar file plus the theoretical/conceptual model we used for our work. The model is explicated in the Nursing Research article noted in the reference list.

The model shows concepts we used successfully to predict anticipated turnover. The instruments include: Nursing Job Satisfaction, Work Satisfaction, Job Stress, Group Cohesion, Autonomy (quality of employment, job characteristics subscales) and Group Cohesion Scales. Some of these scales are ours and some by other authors. The same information from our studies is available for all scales (scale, scoring key, validity, reliability, copyright citation, selected references). Please let me know if any or all are of interest.

All the best with your work.

Sincerely,

Jan R. Atwood, PhD, RN, FAAN
atwoodj@comcast.net
Professor Emerita, Colleges of Nursing & Public Health
Nebraska Medical Center, Omaha, NE
And
Adjunct Professor, College of Nursing, University of
Arizona, Tucson, Arizona

cc: Dean Emerita Ada Sue Hinshaw, PhD, RN, FAAN (<ahinshaw@umich.edu>)

Appendix D: Letter of information

Study Title: Factors Affecting Job Satisfaction and Turnover Intention: A Comparison of Acute Care Nurses Working in Rural and Urban Communities

Dear Madam/Sir,

My name is Yasin Yasin and I am a PhD student under supervision of Dr.Micheal S. Kerr. We are conducting a research study on job satisfaction and turnover in nurses who work in Rural and Urban communities. We have attached a letter of information and consent which provides further details on this study. Your help in this research project is greatly appreciated, for further information you can freely contact the study investigators with the following contact information.

Kind regards

Study Investigator:

Investigator 1:

Michael S. Kerr, PhD
Associate Director, Graduate Programs, Associate Professor,
The Arthur Labatt Family School of Nursing
FNB, Room 2307
Phone: **********
Fax: **********
e-mail: *********

Investigator 2:

Yasin Yasin, RN, PhD candidate
Arthur Labatt Family School of Nursing
University of Western Ontario
Phone: *********
e-mail: *********

Letter of Information for Study Participants

Invitation to Participate

You are being invited to participate in a study being conducted by a Ph.D. student from Western University. The purpose of this letter is to provide you with information required for you to make an informed decision regarding participation in this study. Your contact information was provided by the College of Nurses of Ontario (CNO). As you may recall, you gave consent to participate in research studies when you registered with CNO. CNO provided us access to your name and postal mailing address only. We do not have any other information about you.

Description of the study

This study aims to identify the factors that are leading to job satisfaction among nurses in urban and rural areas. Moreover, the study seeks to determine the impact of job satisfaction on nurses' turnover intention. Turnover intention is the degree to which you perceive that you would leave your job eventually at some unspecified time in the future.

Inclusion criteria

To participate in this study, you should meet the following inclusion criteria:

a) be a registered nurse working full-time or part-time in rural or urban southern Ontario
b) work in an acute care setting
c) have at least six months of work experience in the same work place
d) able to provide informed consent to participate in the study.

Exclusion criteria

Individuals who are

a) employed on a temporary basis

b) not involved in direct patient care

c) on temporary leave, are not eligible to participate in this study.

Study Procedures

If you agree to participate, you will be asked to complete the study questionnaire **either** on paper format **or** online: https://uwo.eu.qualtrics.com/jfe/form/SV_1SoVsyNtvZ7eWhf

also, you can scan the following QR code using your mobile to access the online survey

It is anticipated that your participation will take about 15-20 minutes to be completed.

Consent

Your completion and returning of the paper survey are an indication of your consent to participate. Or by filling out the online survey, you are giving consent to the study.

Are there any risks or discomforts?

There are no known or anticipated risks or discomforts associated with participating in this study.

What are the benefits of taking part?

Your experience of and perceptions about job satisfaction are very important information that only you have. With your permission, the information you share may be presented to others anonymously through journals, publications, and at conferences and meetings. Your views may help to influence future health policy, nursing research, education, and practice. You may benefit personally from your participation by gaining more insight about the topic and gain sense of empowerment by being part of the research. It is possible that you may not directly benefit from participating in this study, but information gathered may provide benefits to society as a whole which include improvement in nurses' job satisfaction and nurse job retention policies.

Compensation

A $ 200 draw will be conducted at the end data collection for the participants who return a complete survey.

Voluntary Participation

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time with no effect on your future employment.

What happens to the information that I tell you?

Your responses will be kept confidential. The only people who will be exposed to your answers will be the investigators involved in the study. The data will be stored in a highly secure manner encrypted and on password protected computers. Any information will never intentionally be released or disclosed in a form that could identify the participants.

The questionnaires will be locked in a secure place at University of Western Ontario and kept for future consultation by the researchers. The electronic survey will be stored in an encrypted hard drive on the PhD student laptop. Disk encryption software will be used. The raw data i.e. questionnaires will be destroyed after seven years of study completion. If you choose to withdraw from this study, your data will be removed and destroyed from our database.

Representatives of the University of Western Ontario Health Sciences Research Ethics Board may review the research data to monitor the conduct of the research.

Confidentiality/anonymity

The researchers will receive full names and addresses from College of Nurses of Ontario, which will be coded. Only the principle investigator and the PhD student will have access to the codes. The online and postal surveys will use a numerical subject identification system instead of participants' names to maintain their confidentiality.

Contacts for Further Information

If you require any further information regarding this research project or your participation in the study, you may contact the study investigator Yasin Yasin or Mickey Kerr by phone ********** or email **********

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Research Ethics (519) 661-3036, email: ethics@uwo.ca

Publication

If the results of the study are published, your name will not be used. If you would like to receive a copy of any potential study results, please provide your name and contact number on a piece of paper separate from the Consent Form.

Your completion and returning of the paper survey are an indication of your consent to participate. Or by filling out the online survey, you are giving consent to the study.

Appendix E: The Study Questionnaire

Demographic Data Sheet

- **Age: _____**Years
- **Overall nursing experience as RN: _____**Years
- **Overall nursing experience as RN in the current hospital: _____**Years
- **Please put χ beside the most appropriate answer**

➢ **Average working hours per week**

□ Less than 20 hours
□ 20 to 30 hours
□ 31 to 39 hours
□ More than 39

➢ **Is your employment: (choose all applicable choices)**

□ Full time
□ Part time

➢ **Marital Status:**

□ Single
□ Married
□ Divorced
□ Widowed
□ Prefer not to answer this question.

➢ **Position:**

□ Registered Nurse
□ Charge Nurse
□ others, specify_____

➢ **Gender:**

□ Male
□ Female
□ Other gender identity
□ Prefer not to answer this question.

- **Working Area:**
  - ☐ Day case
  - ☐ Hospital Clinic
  - ☐ Inpatient Ward (medical, surgical, pediatric, psychiatric,….)
  - ☐ Special Unit (CCU, ICU, OR, ER, PACU)
  - ☐ others, specify_____

- **Highest Level of Education:**
  - ☐ Diploma
  - ☐ Bachelor
  - ☐ Graduate

- **Which lifestyle do you prefer?**
  - ☐ Rural
  - ☐ Urban

- **Is there is a family member living in the same city/town of your current work?**
  - ☐ Yes
  - ☐ No

- **On a scale from 0 -10 (where 0 extremely urban and 10 extremely rural), how do you perceive the community that you are working in term of rurality (put circle on the scale),** ***Participants can use their own perception of rurality for this question – i.e. they self-declare as rural or not***

A CAD 200 draw will be conducted at the end data collection for the participants who return a complete survey. Are you interested in participation in this lottery?

- ☐ Yes, interested
- ☐ No, not interested

Anticipated Turnover Among Nursing Staff

Directions: For each item below, circle the appropriate response. Be sure to use the full range of responses (Agree Strongly to Disagree Strongly).

Response Options

AS	=	Agree Strongly
MA	=	Moderately Agree
SA	=	Slightly Agree
U	=	Uncertain
SD	=	Slightly Disagree
MD	=	Moderately Disagree
DS	=	Disagree Strongly

Options	Item
AS MA SA U SD MD DS	1. I plan to stay in my position awhile.
AS MA SA U SD MD DS	2. I am quite sure I will leave my position in the forseeable future.
AS MA SA U SD MD DS	3. Deciding to stay or leave my position is not a critical issue for me at this point in time.
AS MA SA U SD MD DS	4. I know whether or not I'll be leaving this agency within a short time.
AS MA SA U SD MD DS	5. If I got another job offer tomorrow, I would give it serious consideration.
AS MA SA U SD MD DS	6. I have no intentions of leaving my present position.
AS MA SA U SD MD DS	7. I've been in my position about as long as I want to.
AS MA SA U SD MD DS	8. I am certain I will be staying here awhile.
AS MA SA U SD MD DS	9. I don't have any specific idea how much longer I will stay.
AS MA SA U SD MD DS	10. I plan to hang on to this job awhile.
AS MA SA U SD MD DS	11. There are big doubts in my mind as to whether or not I will really stay in this agency.
AS MA SA U SD MD DS	12. I plan to leave this position shortly.

Nurses' Job Satisfaction Survey

Instructions:

The following is a list of items relating to job satisfaction among Registered Nurses. Although there may be items that do not pertain to you, please try to answer *ALL* statements by circling the most appropriate answer.

How satisfied are you in your current job with the following statements?

		Very Dissatisfied	Dissatisfied	Minimally Dissatisfied	Minimally Satisfied	Satisfied	Very Satisfied
1	**Recognition of your work from your peers**	**1**	**2**	**3**	**4**	**5**	**6**
2	**Supervisor competence**	**1**	**2**	**3**	**4**	**5**	**6**
3	**Benefits package**	**1**	**2**	**3**	**4**	**5**	**6**
4	**Enjoyment from your job**	**1**	**2**	**3**	**4**	**5**	**6**
5	**Being responsible for the work you do**	**1**	**2**	**3**	**4**	**5**	**6**
6	**Physical working conditions (lights, noise, cleanliness, heating, ventilation)**	**1**	**2**	**3**	**4**	**5**	**6**
7	**The way new policies are implemented**	**1**	**2**	**3**	**4**	**5**	**6**
8	**Opportunity for promotion within the organization**	**1**	**2**	**3**	**4**	**5**	**6**
9	**Clarity of work place employment policies**	**1**	**2**	**3**	**4**	**5**	**6**
10	**Availability of resources and supplies**	**1**	**2**	**3**	**4**	**5**	**6**
11	**Having the authority to delegate work**	**1**	**2**	**3**	**4**	**5**	**6**
12	**Completeness of workplace policies**	**1**	**2**	**3**	**4**	**5**	**6**
13	**Work schedule policy**	**1**	**2**	**3**	**4**	**5**	**6**

14	**Recognition of your work from your supervisors**	**1**	**2**	**3**	**4**	**5**	**6**
15	**Achievements at work**	**1**	**2**	**3**	**4**	**5**	**6**
16	**Ability to use your own judgement**	**1**	**2**	**3**	**4**	**5**	**6**
17	**Feeling pride about your job**	**1**	**2**	**3**	**4**	**5**	**6**
18	**Opportunity for professional growth**	**1**	**2**	**3**	**4**	**5**	**6**
19	**Ease of search for workplace polices**	**1**	**2**	**3**	**4**	**5**	**6**
20	**Peer support during the work shift (e.g. during admission, CPR, needs for assistance)**	**1**	**2**	**3**	**4**	**5**	**6**
21	**Ability to deliver quality care**	**1**	**2**	**3**	**4**	**5**	**6**
22	**Sense of value for what you do**	**1**	**2**	**3**	**4**	**5**	**6**
23	**How well appreciated you feel in your job**	**1**	**2**	**3**	**4**	**5**	**6**
24	**The stability of your employment**	**1**	**2**	**3**	**4**	**5**	**6**
25	**Challenge in your work**	**1**	**2**	**3**	**4**	**5**	**6**
26	**Opportunity to expand your scope of practice**	**1**	**2**	**3**	**4**	**5**	**6**
27	**Respect for your opinion**	**1**	**2**	**3**	**4**	**5**	**6**
28	**Retirement plan**	**1**	**2**	**3**	**4**	**5**	**6**
29	**Professional interaction with other disciplines**	**1**	**2**	**3**	**4**	**5**	**6**
30	**Process used in conflict resolution**	**1**	**2**	**3**	**4**	**5**	**6**

31	**Flexibility in practice protocols**	**1**	**2**	**3**	**4**	**5**	**6**
32	**The direct interaction between you and your supervisor**	**1**	**2**	**3**	**4**	**5**	**6**
33	**Recognition for your work from superiors**	**1**	**2**	**3**	**4**	**5**	**6**
34	**Your salary/hourly wage**	**1**	**2**	**3**	**4**	**5**	**6**
35	**Opportunity to develop and implement ideas.**	**1**	**2**	**3**	**4**	**5**	**6**
36	**The duties and tasks associated with your job**	**1**	**2**	**3**	**4**	**5**	**6**
37	**How you are informed about new policies**	**1**	**2**	**3**	**4**	**5**	**6**
38	**Your job security**	**1**	**2**	**3**	**4**	**5**	**6**
39	**Input into organizational policy**	**1**	**2**	**3**	**4**	**5**	**6**
40	**Evaluation process and policy**	**1**	**2**	**3**	**4**	**5**	**6**
41	**Your ability to plan your job**	**1**	**2**	**3**	**4**	**5**	**6**
42	**How employees treat each other**	**1**	**2**	**3**	**4**	**5**	**6**
43	**Supervisor support and backup**	**1**	**2**	**3**	**4**	**5**	**6**
44	**Sense of accomplishment**	**1**	**2**	**3**	**4**	**5**	**6**
45	**Support for continuing education (time and money)**	**1**	**2**	**3**	**4**	**5**	**6**
46	**Opportunity to seek advanced education.**	**1**	**2**	**3**	**4**	**5**	**6**
47	**Freedom to question decisions and practices**	**1**	**2**	**3**	**4**	**5**	**6**
48	**Vacation/Leave policy**	**1**	**2**	**3**	**4**	**5**	**6**

49	**Fairness of assignment distribution**	**1**	**2**	**3**	**4**	**5**	**6**
50	**Work load**	**1**	**2**	**3**	**4**	**5**	**6**
51	**Level of autonomy**	**1**	**2**	**3**	**4**	**5**	**6**

How satisfied are you in your community with respect to the following statements?

		Very Dissatisfied	Dissatisfied	Minimally Dissatisfied	Minimally Satisfied	Satisfied	Very Satisfied
1	**Your status in the community where your hospital is located**	**1**	**2**	**3**	**4**	**5**	**6**
2	**The community support where your hospital is located**	**1**	**2**	**3**	**4**	**5**	**6**
3	**The services available (e.g. health, education, social,…) in your community**	**1**	**2**	**3**	**4**	**5**	**6**

On a scale of 1 – 10, with 10 being the highest job satisfaction, how would you describe your overall current job satisfaction?

1 2 3 4 5 6 7 8 9 10

Extremely Dissatisfied

Extremely Satisfied

Appendix F: The Acute Care Nurses' Job Satisfaction Scale

Instructions: The following list of items known to have varying levels of satisfaction among registered nurses (RNs). Please answer all questions. If there is a question not applicable to you, please answer it based on your expectations if you have that option.

HOW SATISFIED ARE YOU IN YOUR CURRENT JOB AS A REGISTERED NURSE WITH THE FOLLOWING FACTORS?

V.D: Very dissatisfied **D: Dissatisfied** **M.D: Minimally dissatisfied**	**V.S: Very satisfied** **S: Satisfied** **M.S: Minimally satisfied**

Key	Item number
Factor 1: Achievement/job interest/responsibility	**1,7,9,12,16,23,25**
Factor 2: Hospital policy and	**4,14,15,24,28,30**
Factor 3: Quality of supervision	**10,13,18,19**
Factor 4: Peer support/work condition	**2,5,20, 21,26**
Factor 5: Growth and advancement	**8,11,17,27,29**
Factor 6: Benefits/job security	**3,6,22,31**

	Items	V.D	D.	M.D	M.S	S.	V.S
1	Feeling pride about your job	1	2	3	4	5	6
2	Ability to deliver quality care	1	2	3	4	5	6
3	Your salary/hourly wage	1	2	3	4	5	6
4	Clarity of workplace employment policies	1	2	3	4	5	6
5	Physical working conditions (lights, noise, cleanliness, heating, ventilation)	1	2	3	4	5	6
6	Your job security	1	2	3	4	5	6
7	Being responsible for the work you do	1	2	3	4	5	6
8	Opportunity to seek advance education	1	2	3	4	5	6
9	Sense of value for what you do	1	2	3	4	5	6
10	The direct interaction between you and your supervisor	1	2	3	4	5	6
11	Opportunity for professional growth	1	2	3	4	5	6
12	Ability to use your own judgment	1	2	3	4	5	6
13	Supervisor competence	1	2	3	4	5	6
14	How you are informed about new policies	1	2	3	4	5	6
15	The way new policies are implemented	1	2	3	4	5	6
16	Challenge in your work	1	2	3	4	5	6
17	Opportunity for promotion within the organization	1	2	3	4	5	6
18	Supervisor support and backup	1	2	3	4	5	6
19	Recognition for your direct superiors	1	2	3	4	5	6
20	Fairness of assignment distribution	1	2	3	4	5	6
21	Workload	1	2	3	4	5	6
22	Benefits package	1	2	3	4	5	6
23	Sense of accomplishment	1	2	3	4	5	6
24	Completeness of workplace policies	1	2	3	4	5	6
25	Enjoyment from your job	1	2	3	4	5	6
26	Peer support during the work shift	1	2	3	4	5	6
27	Opportunity to expand your scope of practice	1	2	3	4	5	6
28	Availability of resources and supplies	1	2	3	4	5	6
29	Opportunity to develop and implement ideas.	1	2	3	4	5	6
30	Ease of search for workplace policies	1	2	3	4	5	6
31	Retirement plan	1	2	3	4	5	6

Curriculum Vitae

Name:	Yasin Mohammad Yasin
Post-secondary Education and Degrees:	Western University London, Ontario, Canada 2016-2020 PhD. Laurentian University Greater Sudbury, Ontario, Canada 2013-2015 MBA. Jordan University of Science & Technology Al-Ramtha, Jordan 2003-2005 MScN. Jordan University of Science & Technology Al-Ramtha, Jordan 1998 to 2002 BScN.
Honours and Awards	Irene E. Nordwich Foundation Award for Academic Achievement 2017 Ontario Graduate Scholarship 2014-2015 Laurentian University Scholarship 2013-2014 Ministry of higher education scholarship for academic excellence 1999-2001, 2001-2002, 2002-2003
Related Work Experience	University of Calgary in Qatar 2019- now Graduate Teaching Assistant Western University 2016-2017 Clinical instructor at Coronary Care Unit Western University 2015- 2016

Graduate Teaching Assistant
Laurntian University
2013- 2015

Lecturer
International Academy for Health Science
2006- 2008

Lecturer
Philadelphia University
2006-2006

Managerial and Clinical Experience

Registered Nurse
Halton Healthcare
Oakville, Ontario, Canada
2017-2019

Registered Nurse
Lifemark
London, Ontario, Canada
2017- 2017

Head Nurse, ICU/CCU
Dr. Sulaiman Al-Habib Hospital
Al-Qassim, Saudi Arabia
2008-2013

Registered Nurse, then Charge Nurse in ICU
King Abdullah University Hospital
Al-Ramtha, Jordan
2002-2006

Publications:

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