JOB STRESS AND TURNOVER AMONG REGISTERED NURSES IN ACUTE CARE: A REGRESSION ANALYSIS

by

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We accept this thesis as conforming to the required standard

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Abstract

Nurse turnover needs further exploration in the Canadian experience. This study's purpose was to examine whether job stress, as indicated by burnout and psychological distress, explains turnover among acute care registered nurses. The research questions were: To what extent does job stress explain nurses' intent or likelihood of leaving their position or the nursing profession? What other factors, over and above job stress, explain nurses' intent or likelihood of leaving their position and the nursing profession? This secondary analysis of cross-sectional survey data from 522 acute care registered nurses in British Columbia was analyzed using ordinal logistic regression. Burnout, specifically emotional exhaustion, was consistently predictive of both *intent* and *likelihood to leave* the profession and the position. Emotionally exhausted nurses are two times more likely to have *intent to leave* the profession and 1.5 times more likely to do so. The other factors played a minimal role in explaining turnover.

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Dedication

For Jeff. Thank you for your full support during this emotional, intellectual, physical, roller-coaster ride of an educational journey. You have my heart.

For Old Father and Mommy. Thank you for your prayers, support, and love in my ongoing pursuit of knowledge. I love you!

For my brother and sisters. I love you. I could not have gotten here without your trail blazing and orienteering.

For my fellow nurses. We will make headway in our health care system, one nurse at a time.

Live. Love. Laugh. Learn. Bloom.

List of Abbreviations

BC British Columbia

CI Confidence interval

DP Depersonalization

EE Emotional exhaustion

MBI Maslach Burnout Inventory

MBI-GS Maslach Burnout Inventory – General Survey

MBI-HHS Maslach Burnout Inventory – Human Services Survey

OR Odds ratio

PA Personal accomplishment

PE Partial effect

RN Registered Nurse

SD Standard deviation

Chapter One: Introduction and Background

Job stress and turnover among nurses are prominent topics of discussion in the nursing literature. The discussion alludes to the turnover of registered nurses with the subsequent consequence of being unable to fulfill the care needs of society. So, what are the factors that explain why some nurses stay and others leave their position or the nursing profession? The purpose of this study is to examine whether job stress explains acute care registered nurses' *intent* and their self-reported*likelihoodtoleave* the profession or their current position. This study will increase our knowledge of job stress among registered nurses working in acute care settings as it relates to turnover, which will contribute to the improvement of health human resource planning.

Project Description

Having a sufficient number of registered nurses (RNs) to provide care to clients is an important aspect of health human resource planning. Of particular concern are RNs (also referred to as nurses) in the acute care setting given more than 65% of nurses work in that setting (Canadian Institute for Health Information [CIHI], 2010).The registered nursing workforce in Canada is currently growing at a rate of about 2% per year and the percentage of RNs who are educated outside of Canada is increasing (CIHI, 2010). Despite this increase, we know that the average age of RNs was 45.4 years in 2010 (CIHI, 2010). The demands for RNs does not meet the current and future needs for nurses. As such,nurses' *intent* and *likelihood of leaving* are important measures to determine the necessity for retention strategies as they relate to turnover among nurses. In their study of registered nurses in Ohio, Zurmehly, Martin, and Fitzpatrick, (2009) estimated that the percentage of nurses who indicate *intentto leave* the profession is greater than 5%. However, they did not have the corresponding human resources data to show

the actual turnover rates of the nursing staff. Understanding what affects nurses' *intent to leave* and *likelihood of leaving* the nursing profession or their current position is important to those in leadership positions in nursing resource and education planning. This study highlighted the commonalities and differences among acute care nurses who have varying intentions and degrees of *intent* or *likelihoodto leave*the nursing profession or their position.

Background

Turnover is an issue among acute care nurses. It is likely that multiple factors explain whether or not a RN is going to stay with their current profession or position. According to Hayes et al. (2011), turnover was associated with factors such as the identification of career priorities, workplace challenges and behaviours (e.g., high job mobility), variables that influence diminished job satisfaction, and thoughts about their current work experience. The literature synthesis completed by Utriainen and Kyngäs (2009) draws attention to important factors attributed to job satisfaction (an influence of turnover) which include interpersonal relationships, patient care, and organizational structure. They contend that job satisfaction is directly related to internal factors, such as communication between co-workers, interpersonal relationships, and the perception of the same (Utriainen&Kyngäs, 2009). Others have also identified that turnover among RNs is related to some of these same factors (Lavoie-Trembley, O'Brien-Pallas, Desforges, &Marchionnic, 2008;Zurmehlyet al., 2009). Some workplace factors that have been correlated with turnover are workload, shift work, and relationships with colleagues (McVicar, 2003). McVicar (2003) suggests that perceptions of nurses may differ between areas of practice and that stress patterns described within the literature are increasing by being built upon previous reported stressors. Health-related risk factors in their profession may also cause some nurses to want to leave the profession. For example, nurses are more likely, than their similarly educated

and employed counterparts, to report feeling stressed because of their employment, work, or job, after controlling for differences in demographic and socio-economic characteristics (Ratner & Sawatzky, 2009). This may or may not contribute to turnover rates among nurses.

Current literature shows that there is a sufficient and growing source of information detailing the scope and breadth of job stress in various nursing populations globally. Nursing job stress is associated with demanding jobs such as those in healthcare, which subsequently lead to depression, health problems, and decreased job satisfaction (Gelsemaet al., 2006). According to McVicar (2003), there are many contributions to job stress ranging from individual workload to management style to professional conflict and to the emotional cost of care giving. However, it would appear that there is less known about the extent to which job stress is associated with turnover among RNs.

Rather than examining turnover directly, there is good reason to examine nurses' self-reported *intent* and their degree of *likelihood to leave* the profession or their position. One of the first studies in the field of *intent to leave* was by Price and Mueller in the late 1970's. In that study, Price and Mueller (1981) identified that intent to stay had the largest impact on turnover among nurses when compared to the other significant variables (opportunity, job satisfaction, and economic determinants). Absent from the literature are concrete determinations as to the influence of job stress on nurses' *intent* and *likelihoodtoleave*the profession and their current position.

Intent and *likelihood* are not equal and it is important to distinguish the differences between the two variables. An additional field of study is the association as to whether nurses who intend to leave their position are likely to follow through on those intentions to actually leave the profession or their position. These are indirect measures that are indicators of turnover.

These are often used to better understand the factors that may lead to the outcome of turnover. The term '*intent*' in relation to turnover in the profession of nursing or their current position is used frequently in the literature as a proxy (Cavanagh, 1990; Fitzpatrick, Campo, Graham, &Lavandero, 2010; Hasselhornet al., 2003; Lavoie-Trembleyetal., 2008). The language of *intent* is relevant to the current trend in nursing literature and to the secondary data analysis described in this thesis. In their research on empowerment among nurses, Zurmehlyetal., (2009) found an association between turnover and *intentto leave* their current position and profession. The term '*likelihood*' is less frequently used in the literature in association with turnover among nurses. DeCola and Riggins (2010) conducted a study in 11 countries and then discussed the self-reported *likelihood* of turnover of nurses from their current job and the profession in general. They suggest that high workloads and inadequate time allotments for tasks are contributing factors to turnover among nurses. Further discussion about *likelihood* is needed, as it is an internationally used term for research about the profession of nursing.

Project Purpose and Objectives

The purpose of this study is to examine the extent to which job stress explains why some nurses stay and others leave the nursing profession or their position. In addition, it will take into account differences in other factors: workplace, employment, and demographic (see Appendix A). Specifically, the following research questions assisted in the determination of whether the factors explaining *intent*were the same or different from those that explain *likelihood*:

a) To what extent does job stress, as indicated by burnout and psychological distress, explain nurses' intent or likelihood to leave their profession?
b) To what extent does job stress, as indicated by burnout and psychological distress, explain nurses' intent or likelihood to leave their current position?

The hypothesis was that a relative increase in job stress and psychological distress would be associated with an increase in nurses' reported *likelihood* and their *intentto leave* their profession and/or their position.In the literature, there is support for the association between *intentto leave* and the *likelihood* of acting on those intentions. However, little is known as to whether the factors associated with likelihood and intent are the same. As such, the following questions were asked:

c) What other factors, over and above job stress, explain nurses' intent or likelihood to leave their profession?

d) What other factors, over and above job stress, explain nurses' intent or likelihood to leave their current position?

I hypothesized that workplace, education, and demographic factors were associated with an increase in nurses' reported *intent* and *likelihood to leave* their profession or position.

These questions arose from a passion to assist fellow nurses and a preliminary reading of the research done by Dr. Angela Wolff (Wolff, 2009). Understanding what it is that causes nurses to stay in their current position or the profession of nursing is an important and relevant concept for nursing now and for future resource planning.

Definitions

For the purpose of this study, the definitions of the main terms used are as follows. *Turnover* is the central dependent variable through this paper that uses the variables *intent* and *likelihood* as indicators of anticipated turnover based on nurses` perceptions regarding staying in their position or profession. Turnover among RNs refers to the changes in their current work position (i.e., the unit where they work) or within the profession. In this study, *anticipated turnover* is measured using four questions about nurses' *intention* and their *likelihoodtoleave*

their current position and the nursing profession (Fitzpatricket al, 2010). *Intent to leave* refers to a RN's plans to leave the position or profession (Coomber&Bariball, 2006). For this study, there was no given time period of when the job change may occur, but of how often the RN considered the change within the past year. The concept of *likelihood* is significant because it refers to the probability of a RN leaving the current position or the profession. The sole similarity between *likelihood of leaving* and *intent to leave* is that there is no length of time given. *Intent* is the plan to leave (Price & Mueller, 1981), but *likelihood* is the proxy measure of the probability of leaving (Lambert, Lambert & Ito, 2004). *Job stress* is the combination of the pressures of *burnout* and *psychological distress* or disturbance experienced by an acute care RN (McVicar, 2003). *Burnout* is defined by Leiter and Maslach (2009) as "a psychological syndrome that involves a prolonged response to chronic interpersonal stressors on the job" (p. 332). For this study, *psychological distress* is defined as a symptom of aindividual's surroundings and their inability to resolve all issues that are out of the ordinary (Goldberg & Williams, 1988).

Outline of the Paper

This paper will explore the current literature and discuss how this study fills the knowledge gap in chapter two. Chapter three examines the research design, methodology, and process of the current study. This chapter will also outline the design, sampling, variables, process, ethics, validity, and limitations. The findings will be summarized and analyzed in chapter four. Further analysis and discussionis laid out in chapter five. This final chapter will draw conclusions and bring forth recommendations on how this new information could best be disseminated and integrated into the current health care system. The references and appendices are the final components of this paper. Tables and figures are included in the text of each chapter where applicable.

Chapter Summary

Causes of nurses' *intent* and *likelihood to leave* their current position or profession are pertinent for gaining insight into turnover among nurses. This study will examine factors of job stress and other factors that may impact a nurse's *intent* or *likelihood toleave*. This study will examine whether job stress explains acute care RNs' *intent* and their self-reported*likelihoodto leave* the profession or their current position. The results will increase our knowledge of job stress among registered nurses working in acute care settings, which will contribute to the improvement of health human resource planning.

Chapter Two: Literature Review

Current literature shows that there is a significant amount of information detailing the scope and breadth of job stress in the global nursing population. This chapter summarizes a review of the current nursing research literature and identifies gaps that informed this study. The association between turnover job stress among nurses was examined. Intent and likelihood of leaving were further discussed to understand the differences between these outcomes and their use in the literature in relation to factors associated with nurses leaving their profession or current position.

Literature Search and Retrieval Strategies

The preliminary list of search terms for the CINAHL and PubMed searches included nurse, hospital, burnout, job stress, intent, and likelihood. How these terms were combined for each search engine is outlined below. Synonyms for these search terms were found and are as follows: nurses, nursing, acute care, hospitals, stress, psychological stress, turnover, retention, intent to leave, intent to stay, likelihood to stay, and likelihood to leave.

A primary search in each of the chosen databases was with the phrase “nursing turnover.” Relevant articles with multiple citations were examined to ascertain applicable major and minor subject headings. This assisted in expanding the search terms to be more inclusive and specific to the topic of nursing turnover. For the first database search, CINAHL, the Boolean operator OR was used to combine terms that represented the same concept and AND were used to combine the searches for each concept. The general terms are as follows; for the population (acute care RNs), the independent variables (job stress), and the outcome (intent or likelihood to leave nursing) (e.g., acute care nurse AND (intent OR likelihood) AND (stress OR psychological distress)). A time period was not included in the search as it may have been too limiting. To

expand upon the literature findings, synonyms were used in addition to the original general terms searches. Only peer reviewed articles were included.

The second database search using PubMed proved to be a similar systematic process. The controlled vocabulary in the PubMed was examined using the Medical Subject Heading (MeSH) tool. To do this, the terms “turnover,” “burnout,” and “stress” were entered and extrapolated to find the subject headings of “personnel turnover,” “burnout, professional,” and “stress, psychological.” These new terms were added to the original terms with the search of the PubMed database. Search terms were organized by concept and searched separately using the Boolean operator OR (e.g., acute care OR hospital). Using the Boolean operator AND, the results of each set of con in relevance to the thesis research questions.

The inclusion and exclusion criteria for relevant literature were as follows: publication in a peer reviewed journal; the use of quantitative or qualitative methods or metasynthesis; the authors conducted their study in a middle- to high-income country; one of the main search term variables (excluding the term “nurse”) was in the title; the setting was in acute care; investigators assessed or documented turnover or retention; and there were more than 60 participants for comparison with the data set for this analysis.

To get to the point of finding relevant articles, an effective search strategy was implemented. The searches were expanded to the specific databases, CINAHL and PubMed, by first performing a basic search, followed by tailoring the search terms such that they were specific to the database in question. This method led to higher recall when searches were combined to come up with a final number of 47 articles to which the inclusion and exclusion criteria were applied. The inclusion and exclusion criteria limited the sources to reputable

journals with quantitative studies of the specific population and research topic. Articles from the initial research conducted by Dr. Angela Wolff were also incorporated into the literature review.

Limiting the search to three databases was effective. Similar searches were conducted with the NURSEOne database from the Canadian Nursing Association, and the online library the College of Registered Nurses of British Columbia. These searches returned duplicate search results to the articles already located. To develop the search further and gain higher recall, expansion of the preliminary list of terms could have been incorporated. For the purpose of this analysis, the grey literature was not explored. Bias cannot be ruled out as a limitation in this study as the perspective of the author sets the tone for the search. Bias may have come through in the article selection of what is deemed to be relevant knowledge, which outcome terms were most important, and the priorities of the author.

Literature Review

This section begins with a discussion of the literature on the turnover of registered nurses followed by intentions and likelihood of nurses leaving their profession or current position. Following that, I present the literature on the independent variable about job stress and its relationship to turnover. Included in that discussion will be studies regarding burnout and psychological distress, given that these concepts are two means by which job stress can be measured.

Turnover Among Nurses.

Turnover among nurses is a complex problem requiring a multi-faceted solution (Brewer, Kovner, Greene, Tukov-Shuser, &Djukic, 2012). The potential cost to the health care system due to turnover among nurses is cited as upwards of $64,000 per nurse, which includes temporary staffing, training, recruitment, and hiring (O'Brian-Pallas,Murphy, Shamian, Li,

&Hayes, 2010). Nurses currently holding jobs may not have the intent to keep the position they possess. If hospital staffing levels are unstable, there is a resultant reduction in unit capacity, which may in turn negatively influence the quality of care that is provided (O'Brian-Pallaset al., 2010).

Interest in staffing and potential turnover is not a recently reported phenomenon. The causal model of turnover, developed by Price and Mueller (1981), mapped how the determinants of opportunity, routinization, participation, instrumental communication, integration, pay, distributive justice, promotional opportunity, professionalism, general training, and kinship relate to produce turnover. With continued research on the causal model, they found that intent to stay was significant in explaining variation in turnover among the participants (Price & Mueller, 1981). Significant direct effects included intent to stay, opportunity, and general training. Significant indirect effects included, job satisfaction, routinization, participation, instrumental communication, pay, promotional opportunity, kinship responsibility, amount of time worked, age, and length of service (Price & Mueller, 1981).A gap in their work was that there was no direct comparison between *intent* and *likelihoodto leave* or stay.

More recent studies identify that intent among nurses may be influenced by work conditions, job opportunities, and personal characteristics (Breweret al., 2012). According to Coomber and Barriball (2006), stress in any of the areas identified by Breweret al., (2012) may push nurses to explore other areas of work within or outside of the profession of nursing. Thus, stress reduction in the workplace would allow for improved rates in turnover among nurses (Coomber&Barriball, 2006). Additionally, Lieter and Maslach (2009) found that turnover among nurses is predicted by work-life balance. The authors also found that low personal accomplishment was predictive of turnover among nurses. Further, nurses are more likely than

their equally educated counterparts to report work stress and back pain (Ratner & Sawatzky, 2009), which may contribute to turnover rates among nurses. Brewer et al., (2012) found a correlation between more pain and strains and higher rates of turnover among the cohort of 1,653 nurses they surveyed. They suggest decreasing pain to reduce the turnover rates in hospital settings (Brewer et al., 2012). Finally, role clarity and feedback were found to be vital to decreasing turnover within organizations (O'Brian-Pallas et al., 2010).These findings in previous research led me to conclude thatfactors such as, work-life balance, pain, role clarity, and work stress may/could contribute to turnover among acute care nurses.

There is conflicting information about how turnover among nurses interacts with higher education. For example, Coomber and Barriball (2006) found that the educational background of nurses, diploma versus bachelor's degree, is a factor that requires further inquiry due to the changes in requirements for nurses entering practice in various countries around the globe (Coomber&Barriball, 2006). Similarly, Hayeset al., (2011) found that higher education increased nursing turnover in the current position, but it was not clear if these nurses were possibly more committed to their career than to their current employer.Given the mixed findings about the influence of nurses' education background, additional research is necessary.

In addition to educational background, length of tenure as a RN may also play an important role in turnover. Price and Mueller (1981) noted that length of service was a significant contributing factor to intent to stay among nurses. Nurses with advanced length of service have a higher intent to stay (Breweret al., 2012, Price & Mueller, 1981). Given the importance of tenure in other studies, this was included as an important variable to examine in this study.

Regardless of the length of time in nursing, nurses' employment status may also be a significant factor contributing to turnover. A majority of nurses holding part-time and casual jobs do not have the same benefits and job security as those who are employed in full-time positions, and thus tend to leave their position (Zeytinogluet al., 2006). Zeytinogluet al., (2006) also revealed that casually employed nurses were more likely to want to change their employment position or their employer (e.g., a hospital) due to their current work status. Brewer et al. (2012) found that a high rate of position changes in nurses was correlated with a lack of full-time employment status within their first two years of practice. In addition to these findings, voluntary overtime, having more than one paying job, and greater intentions to stay in a position were associated with a decreased rate of turnover among their sample (Brewer et al., 2012). Previous research findings support the inclusion of employment status as an important variable to examine in relation to predicting turnover among nurses.

A substantial contribution to the area of *intentto leave* and actual turnover is the nurses' early exit (NEXT) study, which examined nurses from 10 different European countries (Estryn-Behar et al.,2007). This extensive study and its database has been used by multiple researchers for publications related to the investigation of *intent to leave* nursing (Camerinoet al., 2006, Estryn-Beharet al., 2007, and Hasselhornet al., 2003). Of the 28,561 nurses who participated, 15.6% reported frequently considering *intent to leave*their position(Estryn-Behar et al., 2007). The results show a higher consideration of *intent* in those countries with poorer working conditions (Estryn-Beharet al., 2007). *Intent* frequency increased with the age of the nurses, which is potentially related to nearing of retirement or of upcoming parenthood (Camerinoet al., 2006). As such, age of nurses is another important demographic variable that may explain nurses' *intentions* and *likelihoodto leave* their current position and profession. There are

reportedage differences in how the different generations relate to turnover among RNs whether due to retirement, child rearing, or other life changing factors (Lavoie-Tremblayet al., 2010).*Likelihood of leaving* was not captured in the NEXT study data.

Intent to Leave.

Intent to leave the position or profession and the *likelihood of leaving* the position or profession are further examined in the literature here.

The use of the word '*intent'* is often used as a proxy to examine nurses' turnover in a position or profession is frequently used in the literature (Cavanagh, 1990; Fitzpatricket al., 2010; Hasselhornet al., 2003; Lavoie-Trembleyet al., 2008). *Intent to leave* is described as an outcome of affective variables (Coomber&Barriball, 2006). *Intent to leave* the current position is the most common distinction made (Leiter&Maslach, 2009). This language needs to be interpreted with caution, as it is only '*intent'* and not actual turnover within an organization (Dalton, Johnson, & Daily, 1999). This variable is relevant to the current trend in nursing research as "higher intent to stay consistently reduces turnover" (Breweret al., 2012, p. 522).

Zurmehlyet al., (2009) found that empowerment of nurses decreased their *intent to leave* their position or profession. For example, the authors showed that the rate of *intent to leave* the position was greater than 5%, but they did not have the corresponding human resources data to show the actual turnover rates of the nursing staff (Zurmehlyet al., 2009). In their study of 667 Canadian nurses, Leiter and Maslach (2009) found that *intent* was directly associated with the emotional exhaustion component of burnout that is indicative of individuals experiencing job stress.Moreover, Simon, Muller, and Hasselhorn (2010), found that *intent to leave* the profession and hospital was positively associated with all aspects of burnout (Simonet al., 2010). In addition, leadership quality and city size were correlated with *intent to leave* the

hospital.Zurmehlyet al. (2009) show that the workplace setting is an important factor in understanding nurses' *intent to leave*. Breweret al. (2012) found that workplace attributes, specifically employment status and education levels, contributed to the rates of turnover among nurses. Research around i*ntent* could be further expanded to compare actual nurse turnover data with *intent to leave* the position.

Likelihood of Leaving.

The term '*likelihood'* is less frequently used in the nursing literature as proxy to turnover among RNs than is the language of '*intent'*. DeCola and Riggins (2010) conducted a study in 11 countries and discussed the *likelihood* of turnover of nurses from the nursing profession or their position in general. They suggest that high workloads and inadequate time allotments for tasks contribute to turnover among nurses (DeCola& Riggins, 2010). No articles comparing *intent to leave* and *likelihood of leaving* were uncovered in the literature search related to RNs.

In this current study of human behaviour, the theory of planned behaviour (Ajzen, 1991) articulates the comparison of *intent* and *likelihood.* The theory suggests that multiple components, such as attitude toward behaviour, subjective norms, and perceived behavioural control, shape an individual's intention or behaviour (Ajzen, 1991).The theory states, "the stronger the intention to engage in a behaviour [sic], the more likely should be its performance" (Ajzen, 1991, p. 183). There is a distinction between the predictive likelihood and self-reported likelihood which is relevant to the current material, as it would suggest that nurses with higher *intent* would therefore have a higher *likelihood of leaving* and thus greater turnover among nurses. This would be true either in the profession or for changing their current nursing position.

Job Stress and Burnout.

In McVicar's (2003) literature review of workplace stress, he found that 'emotional labour' and workload were some of the main sources of nurses' distress over the years. This 'emotional labour' was defined as how nurses coped with sick patients and their families. He also found that stress levels of nurses were increasing in intensity or being added toyear by year, which leads to recruitment and retention challenges (McVicar, 2003).

Job stress is experienced in relation to the day-to-day work required of nurses (Shields & Wilkins, 2006). Stress is a multifaceted concept that needs to be addressed clearly within the context of turnover among nurses (Zeytinogluet al., 2006). Stress is defined by McVicar (2003) as "a subjective phenomenon based on individual perceptions, producing positive (eustress) and negative (distress) perspectives" (p. 640). Examination of stress is necessary because work stress is associated with fair or poor physical and mental health as well as reduced performance overall (Lowe, 2006;Shields & Wilkins, 2006). In regard to general and mental health, BC registered nurses were more likely to report fair or poor general (7.5%) or mental (5.7%) health than the national nursing averages of 6.6% and 5.5%, respectively (Shields & Wilkins, 2006).

On average, individuals in health occupations report higher work stress (39%) than all other occupations (27%) (Lowe, 2006). In Canada, 31% of female and 27% of male nurses reported some degree of job strain (Shields & Wilkins, 2006). According to Shields and Wilkins (2006), those who reported high job strain/psychological distress were more likely to report fair or poor health. Nurses with poor heath are more likely to think about leaving their current position or profession. Although not greatly evidenced in the literature, a gap being addressed by this study is the link between job stress and turnover.

Full-time RNs experience more distress than those working in part-time or casual positions (Zeytinogluet al., 2006). These researchers also found that stress was the "single most important factor significantly and positively correlated …with propensity to leave the profession" (p. 65). This study did not explore the inclination of nurses to leave their current position.Regardless, the findings from this study support the need to further understand the link between employment status, job stress and turnover.

Identified in the literature review is the link betweenthe job stress on individual nurses and turnover. Psychological distress is a factor associated with jobs stress as there are many other factors, besides ones work, that are associated with this form of distress. Some nurses also experience chronic interpersonal stressors on the job that arise due to nurses interacting with clients on a daily basis. This prolonged response to chronic stress could result in a psychological syndrome called burnout (Leiter&Maslach, 2009).Nurses are at a high risk for burnout due to the high stress and demanding positions they occupy (Kanste, 2008; Lee,Song, Cho, Lee, & Daly, 2003;Ross Jones, Callaghan, Earles, & Ashman, 2009). In western countries, burnout is self-reported by up to 45% of acute care nurses (Kowalskiet al., 2010). In a BC sample of nurses, Wolff (2009) reported a high degree of nuese experiencing emotional exhaustion (35%) and depersonalization (21%), however, personal accomplishment was within the normative range.

Burnout in nurses may lead to turnover (Kowalskiet al., 2010; Leeet al., 2003; Van Bogaert, Clarke, Roelant, Meulmans, & Van de Heyning, 2010). Van Bogaert, *et al.,* (2010) found that unit-level variation in rates of burnout was a significant factor in relation to the outcome of turnover.Burnout was found to be a predictive factor for *intent to leave*the position in nurses who participated in the NEXT study in Europe (Estryn-Beharet al., 2007).From these studies there is an indication between the association of job stress and *intentto leave* the

position,however, there is a paucity of research about job stress and likelihood of leaving both position and profession.

Literature Review Summary

Intent and *likelihood* are adequate measurement variables in predicting turnover among nurses. Job stress (including psychological distress and burnout) is an important factor that has been found to alter rates of turnover among nurses. Through the review of the literature, gaps have been identified. These areas of needed research include; turnover at the unit level in hospitals (Van Bogaert, et al. 2010); comparison of the difference between *intent to leave* and *likelihood of leaving* and the factors that affect these variables; the Canadian experience with the *intent* and *likelihood* variables; whether job stress variables affect turnover; and whether demographic characteristics affect turnover. The intent of this analysis was to address these gaps through multivariate analysis of the dependent variables of *intent* and *likelihood to leave* the profession or the position. The following questions were answered through these analyses;

a) To what extent does job stress, as indicated by burnout and psychological distress, explain nurses' intent or likelihood to leave their profession?
b) To what extent does job stress, as indicated by burnout and psychological distress, explain nurses' intent or likelihood to leave their current position?
c) What other factors, over and above job stress, explain nurses' intent or likelihood to leave their profession?
d) What other factors, over and above job stress, explain nurses' intent or likelihood to leave their current position?

The analysis of these questions follows in the next three chapters.

Chapter Three: Research Design, Methodology, and Process

The purpose of this project is based on a literature review of studies in the area of job stress, chosen covariate factors, and turnover in the nursing profession. Thissecondary data analysis examined the effects of job stress and psychological distress on turnover rates among acute care nurses in an urban setting. The research questions for this study were outlined in chapter one. My hypothesis was that a relative increase in job stress and psychological distress would be associated with an increase in nurses' reported *likelihood* and their *intentto leave* their profession and position. I also hypothesized that work, education, and demographic factorswould be associated with an increase in nurses' reported *intent* and *likelihood to leave* their profession or position (see Appendix A). The following section provides an overview of the methods of this thesis project. A review of the project design, study sample, variables, process, ethics, scientific quality, and limitations can be found on the following pages of this chapter.

Design

The data used for this study were from a previously conducted cross-sectional survey of registered nurses in acute care settings. This study involved a secondary analysis of existing data obtained via a cross-sectional survey study by Wolff (2009). Her dissertation focused on relational differences in demographics and work values and their associations with conflict and burnout among nurses.

A secondary analysis of this data was conducted to investigate hypothesized factors that may explain variability in nurses' *intent to leave* and their *likelihoodofleaving* the position or nursing profession. The analyses were constructed to specifically address the four research questions as identified in chapter one.

Sampling

This study focuses on RNs who are employed in hospital-based settings. The hospital setting is where 63% of all registered nurses in Canadaand 71% in BC work (CIHI, 2010). The questionnaire was completed by 603 nurses (RNs, licensed practical nurses, and nurse practitioners) in two acute care tertiary hospitals within a large urban health authority in British Columbia, Canada (Wolff, 2009). The 17 tertiary care units used include medical, surgical, paediatric, perinatal, and neonatal intensive care. The overall response rate was 82%. There were 879 participants identified, with 736 being eligible based on the selected criteria, of which 133 did not fully complete questionnaires. This left 603 participants, 522 of which are RNs. The current analysis involves only the data provided by the RNs (n = 522).Participant selection was based upon inclusion/exclusion criteria. The nurses had to be currently working on a frequent basis and could not be self-identified or unit manager or as not being a regular member of the nursing unit (Wolff, 2009).

The questionnaires were paper forms and informed by Dillman's (2000) *Tailored Design Method,* and were administered by using multiple points of written contact in combination with in-person contact (Wolff, 2009). Data collection was completed over an eleven-week period in 2007 with nurses who had 50 to78 days to complete the survey. After recruitment, contacts were made with participants in person, through the use of paper-based forms, and e-mail, to encourage survey completion.

Measures and Variables

The measures and variables that were included in the data analysis are outlined in Table 1 (see Appendix B).

Dependent Variables.

Turnover among RNs is the dependent variable in this study. RNs in this study are defined as acute care nurses working in a hospital setting. Turnover among RNs refers to the changes in their current work position (i.e., the unit where they work) or within the profession. In this study, *anticipated turnover* was measured using four questions about nurses' *intent* and their *likelihoodto leave* their current position and the nursing profession (Fitzpatricket al., 2010). These RNs were asked to report how often in the past year they had considered leaving the profession of nursing or their current position on the hospital unit (see Appendix C). The two questions related to *intenttoleave* were: (1) *How often in the past year have you thought about changing your current position on this unit to work on another nursing unit in the hospital*? and (2) *How often in the past year have you thought about permanently leaving the nursing profession?* The response options form a 7-point Likert scale (1 = never, 2 = a few times, 3 = about once a month, 4 = two or three times a month, 5 = about once a week, 6 = more than once a week, and 7 = every day).

"Likelihood" refers to nurses reports of how likely they are to look actively for another job or another position in the hospital and outside the profession of nursing. The two questions related to likelihood of leaving were: (1) *how likely is it that you will actively look for another nursing job in this hospital in the next year?* and (2) *how likely is it that you will actively look for employment outside the nursing profession in the next year?* The response options for these questions are based on a 4-point Likert scale (1 = not likely at all, 2 = slightly possible, 3 = quite possible, and 4 = almost certain) (Hasselhornet al., 2003; Wolff, 2009).

Independent Variables.

Job stress, is conceptualized as encompassing both psychological distress and burnout, which were measured using the*General Health Questionnaire-12* and*Maslach's Burnout Index* (MBI-HSS) respectively. The General Health Questionnaire has been used internationally since its inception in the 1970s (Donath, 2001;Kalliath, O'Driscoll, &Brough, - 2004). It is primarily used to measure psychological distress and is used extensively in areas of mental health research (Donath, 2001;Kalliathet al., 2004; Maslachet al., 2001). There are four versions comprised of 60-, 30-, 28-, and 12-item scales. The General Health Questionnaire-12 is the shortest version and has been validated in multiple psychometric analyses (Kalliathet al, 2004; Maslachet al., 2001). It consists of 12 questions related to the mental health of the subject (see AppendixD). Respondents are asked to answer each question on a scale of one to four with one being 'better than usual' and four being 'much less than usual'. Higher scores are correlated with higher levels of psychological distress (Donath, 2001).Each question is scored from 1 to 4, therefore the total scores range from a minimum of 12 to a maximum of 48. Due to their work environment, nurses' psychological distress is an important component of their overall health. Psychological distress in nurses has been associated with job stress and is therefore included as a potential indicator of job stress in this study. This scale has been used in multiple studies in nursing research to determine components of health such as occupational wellbeing and work-related stress (Cocco, Gatti, de Mendonça Lima, & Camus, 2003; Ross, Jones, Callaghan, Earles, & Ashman, 2009;WengBoey, 1999). Internal consistency reliability (Cronbach's alpha) of this instrument ranges from 0.87 to 0.92 (Kalliathet al., 2001; Rosset al., 2009).

The MBI-Health Services Survey (MBI-HSS) has been used since its initial publication in the early 1980s and is generally referred to as the 'gold standard' to assess burnout in human

services (Schutte, Toppinen, &Kalimo, 2000). Burnout is most frequently measured with the MBI-HSS (Lieter&Maslach, 2009; Poghosyan, Aiken, & Sloane, 2009). The MBI-HSS was published in 1981 by Maslach and Jackson for application in human service occupations (Maslach,Schaufeli, &Leiter, 2001). This tool measures emotional exhaustion, depersonalization, and personal accomplishment (Kanste, 2008; Kowalskiet al., 2010). High levels of emotional exhaustion and depersonalization with low levels of personal accomplishment lead to burnout syndrome (Leiter&Laschinger, 2006; Maslachet al., 2001). Emotional exhaustion is sometimes the focus of studies on burnout (Laschinger, Finegan, Shamian, &Wilk, 2003). Poghosyanet al., (2009) compared the use of the MBI-HSS across eight countries and found that it performed similarly in each country. The countries compared included; Armenia, Canada, Germany, Japan, New Zealand, Russia, the United Kingdom (UK), and the United States (US) (Poghosyanet al., 2009). This comparison further solidifies the predictive validity and increases the confidence of using the MBI-HSS tool with nurses internationally and when comparing studies using this tool.

Burnout is defined as “a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who work with people in some capacity” (Maslach, Jackson, &Lieter, 1996, p. 4). It is further defined by Leiter and Maslach (2009) as “a psychological syndrome that involves a prolonged response to chronic interpersonal stressors on the job” (p. 332). The MBI-HSS contains 20 questions and three subscales that measure the occurrence of depersonalization (5 items), emotional exhaustion (8 items), and diminished personal accomplishment (7 items) (Appendix E). Examples of the

burnout items for each subscale are:[1] EE – "*I feel like I'm at the end of my rope*," DP – "*I feel I treat some recipients as if they were impersonal objects*," and PA – "*I feel I'm positively influencing other people's lives through my work*." The low reference ranges for the burnout scale in medical professionals is less than 16 for emotional exhaustion, less than 5 for depersonalization, and greater than 40 for personal accomplishment (Maslach, etal, 1996). The moderate range is 19-26 for emotional exhaustion, 6-9 for depersonalization, and 39-34 for personal accomplishment (Maslachet al, 1996). The high range is greater than 27 for emotional exhaustion, greater than 10 for depersonalization, and less than 33 for personal accomplishment (Maslachet al, 1996).Depersonalization refers to negative and impersonal attitudes and feelings towards other people (Maslach et al, 1996). Emotional exhaustion is integral to the burnout scale and accounts for feelings of being drained and over-extended from their emotional resources (Maslach et al, 1996). Personal accomplishment relates to how people compare themselves negatively to those around them and their own competence (Maslach et al, 1996). When the scores are calculated, those at risk for burnoutscore lower in the area of personal accomplishment and higher in the areas of depersonalization and emotional exhaustion. The MBI's internal validity is confirmed by the initial scale and by subsequent tests (Kalliath et al, 2004; Maslach, 2001). For other studies, the reliability of the MBI is supported by acceptable Cronbach's alpha values for each subscale (depersonalization = 0.89, emotional exhaustion = 0.89, and personal accomplishment = 0.92) (Leiter&Maslach, 2009;Poghosyan, Clarke, Finlayson, & Aiken, 2010). The corresponding values in the present study are 0.86 for the General Health Questionnaire-12. The corresponding values in the present study were acceptable for the MBI-HSS

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(depersonalization = 0.76, emotional exhaustion = 0.89, personal accomplishment = 0.78). This study confirms internal consistency of this standardized tool.

Generalizability of this instrument is supported by further exploration of the data from six of the eight countries in a large study (n = 53,846). In Canada (16,844 hospital nurse respondents from Alberta, British Columbia, and Ontario) the mean scores were 22.5 for emotional exhaustion, 6.2 for depersonalization was 6.2, and 37.4 for personal accomplishment (Poghosyanet al., 2010). These responses show moderate rates of burnout for Canadian nurses (Maslachet al., 1996). Interestingly, this study also revealed a lower rate of burnout in Canadian, New Zealand, and UK nurses than German, Japanese, and US nurses.

Covariates.

Several covariates were included in the analysis to control for other factors that may be associatedwith turnover (i.e., nurses'*intent to leave* and their *likelihood of leaving*). These include workplace, demographic, and employment factors (see Appendix B).The demographics of age, gender, and educational background will allow for comparison among studies and will improve the generalizability of the data so that it can be applied in the setting of human resource management. Age was calculated based on year of birth and participants were divided into equal quartiles for analysis (<30, 30-39, 40-50, and >50). Gender was separated into male and female (male = 0, female = 1). Educational background was separated into highest qualification, with diploma = 0 and bachelors degree and higher = 1 (see Appendix B).

The work factors related to hospital location and unit type are integral to the work of this study because it will aid in the comparability of this study to other sites in unit type and hospital resources (see Appendix A). Including workplace factors assists with the overall analysis by not assuming similarities between work sites and unit types (Zurmehlyet al. 2009). This study

includes the variables of the years worked as a nurse in addition to current employment status (i.e., permanent full- or part-time, or casual or temporary). Concerning education, the variables of the graduation year, level of education achieved, and the country of education were included in the analysis. The survey questions were: What year did you complete your first/initial education program in nursing? What is your highest educational qualification in nursing? And,In what country did you complete your first/initial education program in nursing?

Methods of Analysis

The population chosen was full- or part-time employed acute care RNs in an urban setting, as this was the sample used in the original surveys that were gathered in the primary analysis. The dependent variables of *intent to stay* and *likelihood of leaving theposition* or *profession* were chosen based on questions that were asked in the original investigation (Appendix E). The independent variables were chosen as a way to measure job stress using burnout and health survey scores. Descriptive statistics were used to evaluate variability in RNs *intent* and *likelihood of leaving* and to describe distributions of the burnout variables and the work, demographic, and employment characteristics in the sample. Frequencies were used to represent categorical variables, and means and standard deviations were used to summarize the continuous variables. The distributions of the continuous variables were examined using skewness and kurtosis statistics and by graphing histograms and box blots to ascertain whether they approximate a normal distribution. Cronbach's alpha was used to examine the internal consistency of the multi-item measurement instruments (i.e., the measures of burnout and psychological distress). For the present study, Cronbach's alpha was 0.86 for the General Health Questionnaire-12. Internal consistency in the present study was also acceptable for the MBI-HSS (depersonalization = 0.76, emotional exhaustion = 0.89, personal accomplishment = 0.78).

Regression analysis was used to evaluate the extent to which this variation in RN's *intent* and *likelihood to leave* (dependent variables) is explained by the aforementioned job stress factors (independent variables), including burnout and psychological distress, while controlling for workplace, demographic, and employment factors (co-variates). An ordinal logistic regression, using a proportional odds model, was applied to accommodate the ordinal level of measurement of the dependent variables. The dependent variables are measured using an ordinal scale and therefore an ordinal regression is the most appropriate approach (O'Connell, 2006).

The proportional odds model produces one odds ratio for independent variables. The odds ratio pertains to the comparison of the values at or below one of the response option categories to those above the category (for example,1 vs. 2, 3, 4, and 1, 2 vs. 3, 4, and 1, 2, 3, vs. 4). There is no proportional odds ratio for the last category because there is no group above it. The proportional odds ratios are assumed equivalent for the three other categories (hence there is only one odds ratio for each variable) (O'Connell, 2006). The parallel odds assumption refers to this equivalency.

The analytical process involved three steps. First, the variables chosen for the analysis were examined through bivariate analyses (O'Connell, 2006). This first analysis examined each of the job stress variables and their individual associations with each of the dependent variables (*intent* or *likelihood to leave* the profession or position). In this first step, each independent variable was analyzed to determine its significance in its relation to the dependent outcome variables.

In step two, the job stress variables were included concurrently into anmultivariate ordinal logistic regression for each of the four dependent variables.This step was necessary to examine the interaction of the independent variables with the dependent variables

In the final step 3, the untrimmed models (i.e., all independent variables remained in the model; variables were not subsequently excluded from the analysis) were analyzed. This is in keeping with following the research question and not forming the question to the model (O'Connell, 2006). These ordinal regression models included each job stress and covariate variable in relation to the dependent variable of *intent* or *likelihoodto leave* the profession or the position. The IBM Statistical Package for the Social Sciences (SPSS) Statistics 20 software was used for the computations in the analysis.

Ethics

The primary data for this study received initial regulatory ethics board approval by the ethics review boards of both a university and a health authority (Wolff, 2009). As this project is a secondary analysis of participant's surveys, the ethics board at Trinity Western University required an ethics submission and approval for testing on human subjects. This process was completed in accordance with the regulatory requirements and the approval was received in April of 2012 (see Appendix F). Following this approval, access to the specific variables and data was granted. This lead to the viewing and analyzing of the data set.

Summary

The study has been designed to gain insight into the impact job stress may have on turnover among nurses. With the use of the General Health Questionnaire-12 and MBI-HSS as measures of job stress and the *intent* or *likelihood* scales for leaving the profession and position the research questions were answered. Though there are limitations to the study, it will meaningfully contribute to the current body of nursing research knowledge.

Chapter Four: Findings

This chapter will describe the sample and the results from the data analysis that was completed. First, the descriptive results of this sample will be presented followed by the reported level job stress experienced by registered nurses (RN) working in acute care. The regression analysis comprises the largest portion of this chapter. The four sections of the regression analysis results correspond with the research questions and are organized as follows: *intent to leave the profession*(question A); *likelihood to leave the profession*(question C); *intent to leave the position*(question B); and finally *likelihood to leave the position*(question D). A brief conclusion paragraph summarizes this chapter.

Descriptive Results

This study involved a secondary analysis of existing data obtained via a survey that enrolled 606 nurses, including RNs and licensed practical nurses. For the purpose of this study, only the RN data was used. The RNs (n = 522) were from 17 units at two tertiary hospitals within a large urban health authority in BC (Wolff, 2009). The hospital units included medical, surgical, pediatric, perinatal, and neonatal intensive care.

The sample demographics are presented in Table 2. Of the RN population, 95% were female, 71% came from a medical and/or surgical unit, 55% were permanent full time employees, 59% had worked for 15 years or less (mean = 14 years), and 59% completed their nursing education after 1990. Most of the nurses received their initial nursing education in Canada (71%), 76% completed their education in English, 50% had a RN diploma as their highest level, and 69% reported English as their first language. Almost two-thirds of this population was over the age of 35 years (57% (mean = 40 years, SD=11.3)).

Table 2

Sample Characteristics

Variable (missing)	Frequency (n)	Valid Percent (%)
Gender (2)		
Male	24	5
Female	496	95
Unit type (0)		
Medical and/or surgical	376	72
Non-medical/surgical	146	28
Age (14)		
<30 years	137	26
30 to 39 years	132	26
40-50 years	116	23
> 50 years	123	25
Years worked as a nurse (3)		
less than 1 year	49	10
1-2years	58	11
3-5years	59	11
6-10 years	90	17
11-15 years	55	11
16-20 years	46	9
21-25 years	45	9
26-30 years	55	11
> 30 years	62	12
Current employment status on unit (0)		
Full Time (FT)	289	55
Part Time (PT)	134	26
Temporary FT or PT	17	3
Casual	82	16
Country of 1st education (7)		
English	397	77
non-English	118	23
Ethnicity* (5)		
White	300	58
Filipino	88	17
South Asian	58	11
Chinese	34	7
Black	8	2

Variable (missing)	Frequency (n)	Valid Percent (%)
West Asian	8	2
South East Asian	7	1
Japanese	4	1
Latin American	3	1
Korean	3	1
First Nations, Aboriginal, Métis	3	1
Highest education qualification (1)		
RN diploma	262	50
BSN	253	49
MN, PhD	6	1

Note. N = 522, * not included in the regression analysis. Due to rounding, the valid percentages may not add to 100%.

In this study population for burnout and job stress, 324 (62.4%) reported moderate to high emotional exhaustion, 206 (39.6%) reported moderate to high depersonalization, 327 (63%) reported moderate to high diminished personal accomplishment, and 39% reported excellent general health (General Health Questionnaire-12) (see Table 3). This means that two-thirds of all nurses in this study experience emotional distress and have a low sense of self-efficacy. As well, almost half tended to distance themselves from others.In Table 3, the mean scores areremarkably similar to the norm reference values located in the MBI Manual as the standard for Medicine (emotional exhaustion = 22.19 [9.53],depersonalization = 7.12 [5.22], &personal accomplishment = 36.53 [7.34]) (Maslachet al., 1996).

Table 3

Reported Job Stress

Measure	Mean (SD)	Potential Range	Categories of Scores, n (%)		
Burnout (MBI-HSS)			High	Moderate	Low
Emotional Exhaustion (EE)	22.6 (10.8)	0-53	179 (34.5)	145 (27.9)	195 (37.6)
Depersonalization (DP)	5.7 (5.3)	0-26	107 (20.6)	99 (19.0)	314 (60.2)
Personal accomplishment (PA)	36.9 (6.4)	0-48	133 (25.6)	194 (37.4)	192 (37.0)
Psychological Distress					
GHQ-12 score	11.7 (4.9)	0-36 (0-32)	38 (7.3)	152(29.2)	331 (63.4)

Note. The low reference ranges for the burnout scale in medical professionals for EE is <16, DP is <5, PA is >40 (Maslach, et al., 1996). The moderate range is 19-26 for EE, 6-9 for DP, and 39-34 for PA (Maslachet al, 1996). The high range is >27 for EE, >10 for DP, and <33 for PA (Maslachet al., 1996). The maximum possible score for EE is 53, DP is 26, and PA is 48. The low reference range for the GHQ-12 is low <12, moderate 15-20, and high >20.

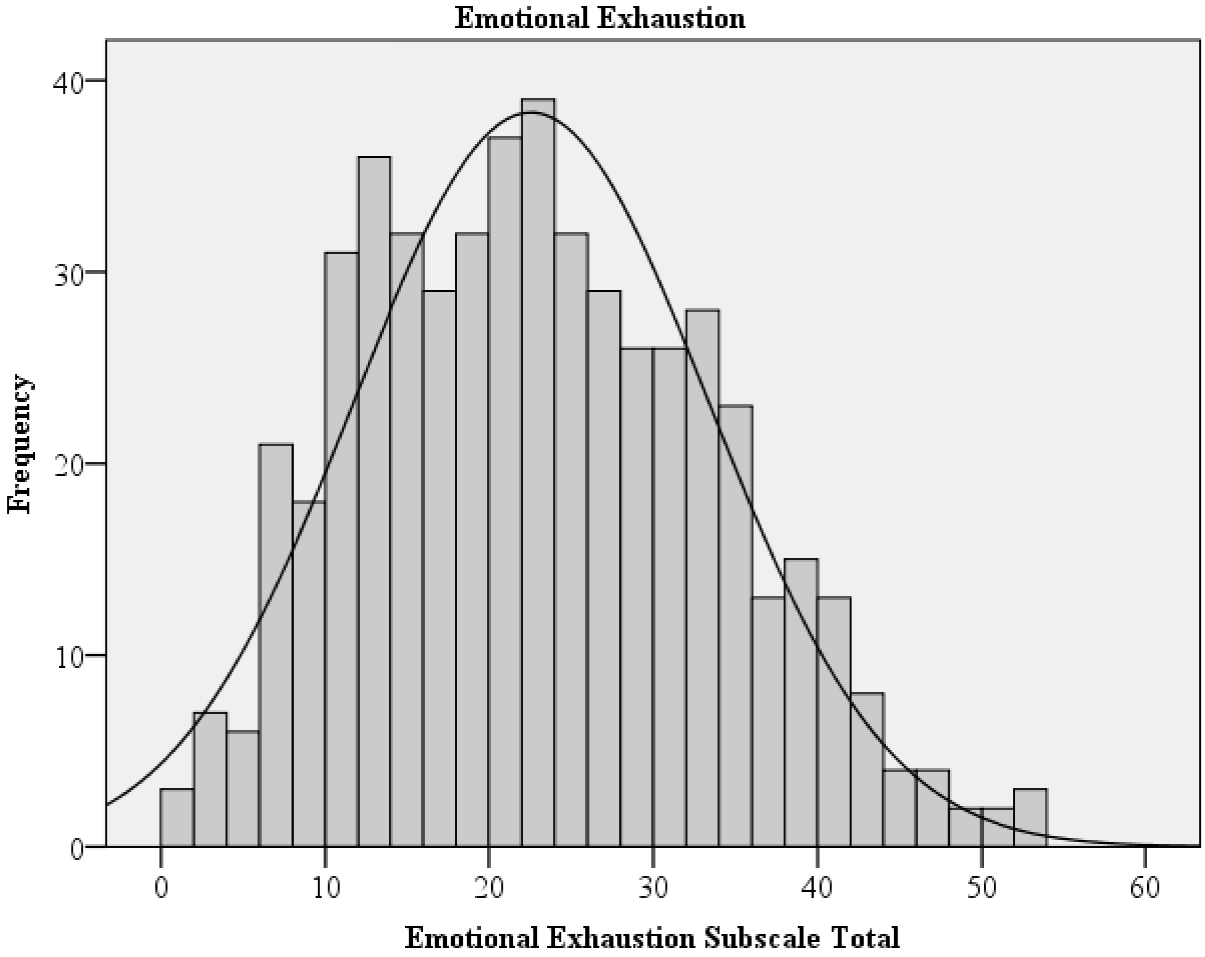


Figure 1. Histogramof Emotional Exhaustion variable scores. Mean result = 22.5, SD = 10.8. N=522.

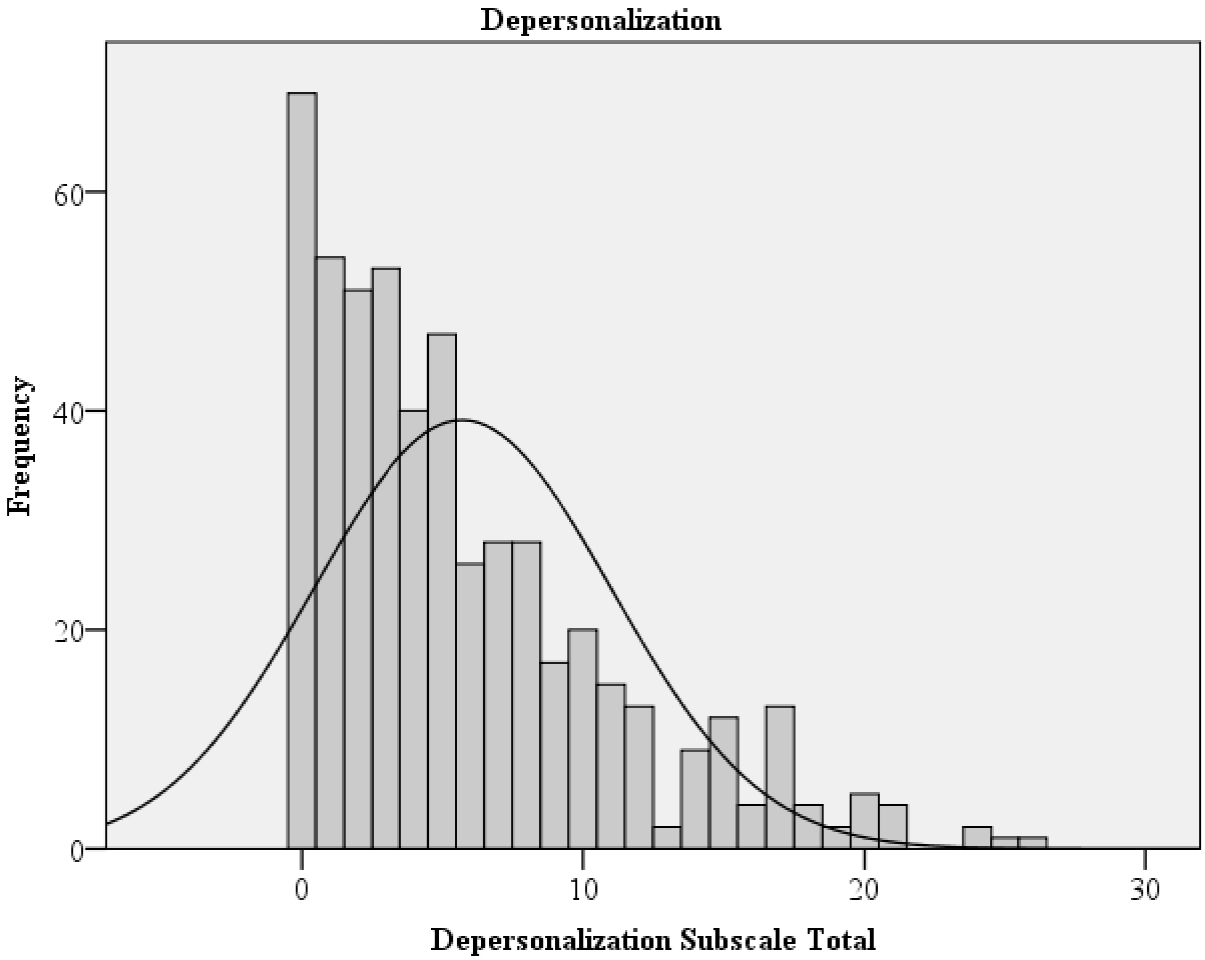


Figure 2. Histogramof Depersonalization variable scores. Mean result = 5.7, SD = 5.3. N=520.Missing 2.

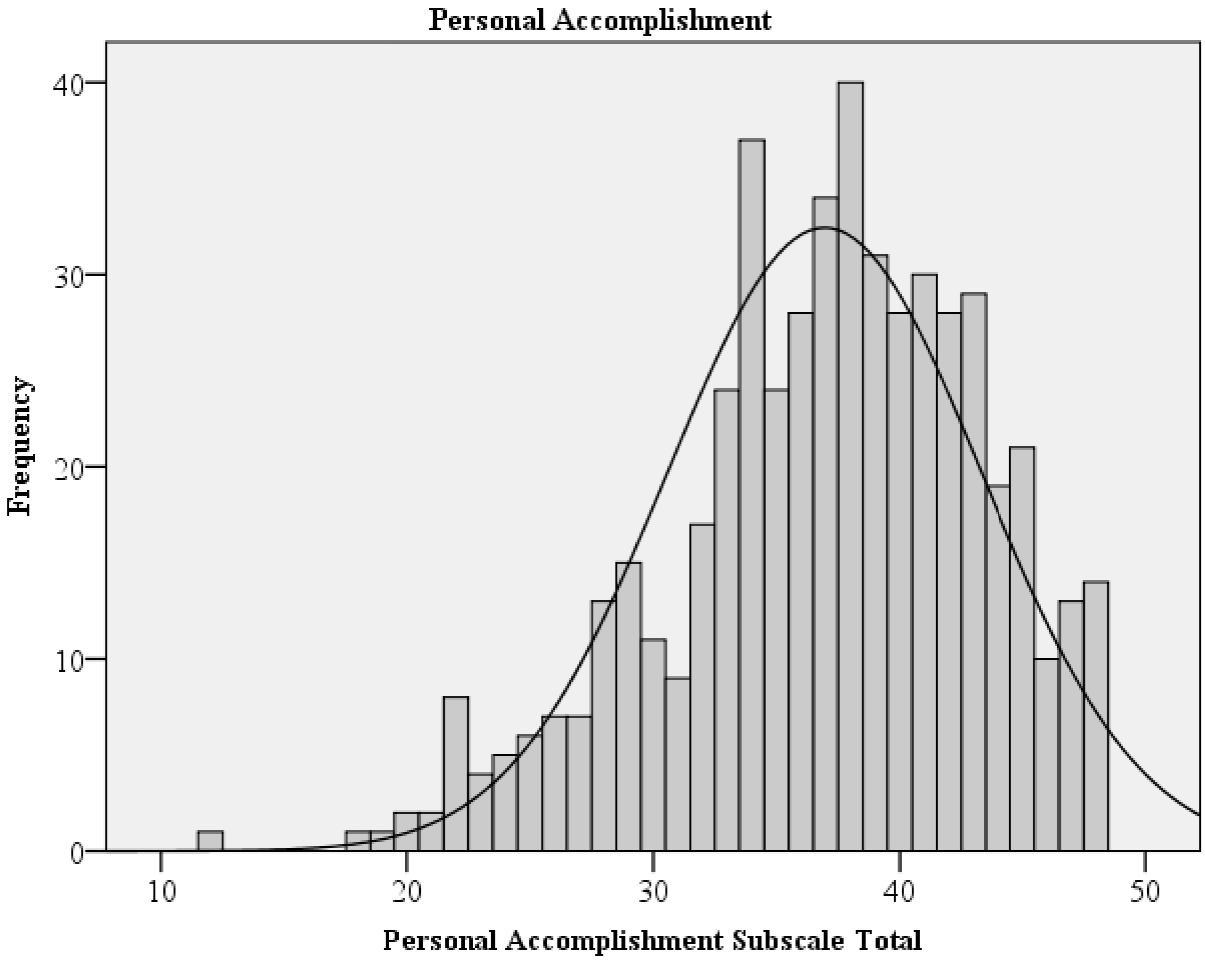


Figure 3. Histogram of Personal Accomplishment variable scores. Mean score = 36.9. SD = 6.4. N = 519. Missing = 3.

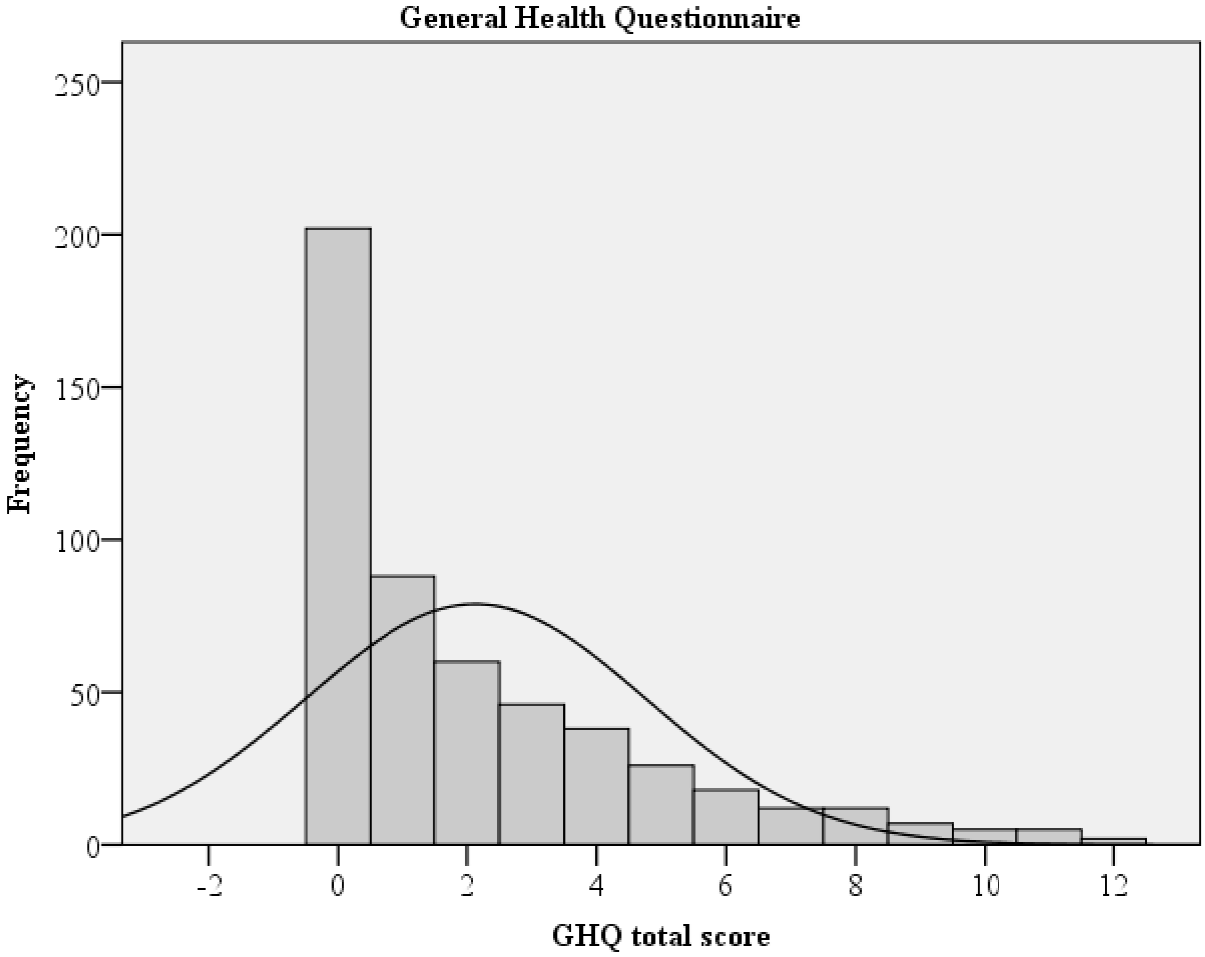


Figure 4. Histogram of General Health Questionnaire variable scores. Mean score = 11.7. SD = 4.9. N = 521. Missing = 1.

Seventy-five percent of nurses' GHQ-12 scores in this sample population were indicative of low to moderate psychological distress (see Table 3).The mean psychological distress score of nurses was 12 (see Table 3) out of a possible range of 0 to 36.The univariate distributions for the job stress variables were examined to determine whether they were normal. There were no significant concerns with the distributions of the continuous job stress variables (see Figures 1, 2, 3, 4): all skewness and kurtosis results were below 1.3 (skewness) and 1.6 (kurtosis).

The distributions of the *intent* and *likelihood* variables of nurses in their profession or position are described below (see Figures5 and 6). The percentages for profession ranged from ‘never’ (58%) to ‘every day’ (3%) for *intent to permanently leave* the nursing professionand from ‘not likely at all’ (78%) to ‘almost certain’ (3%) for *likelihood of leaving the profession.* The percentages of responses ranged from ‘never’ (34%) to ‘every day’ (5%) (see Figure 6) for the question on *intent to leave the current position.* For *likelihoodto leave the current position* the responses ranged from ‘not likely at all’ (47%) to ‘almost certain’ (10%)(see Figure 5). *Intention* and *likelihood*are positively correlated; the stronger the *intent to leave the profession* or *position*, the higher the *likelihood to leave*. *Intent* and *likelihood* are moderately correlated with leaving the profession and the position (Spearman rank order correlations are0.54 and 0.62, respectively).

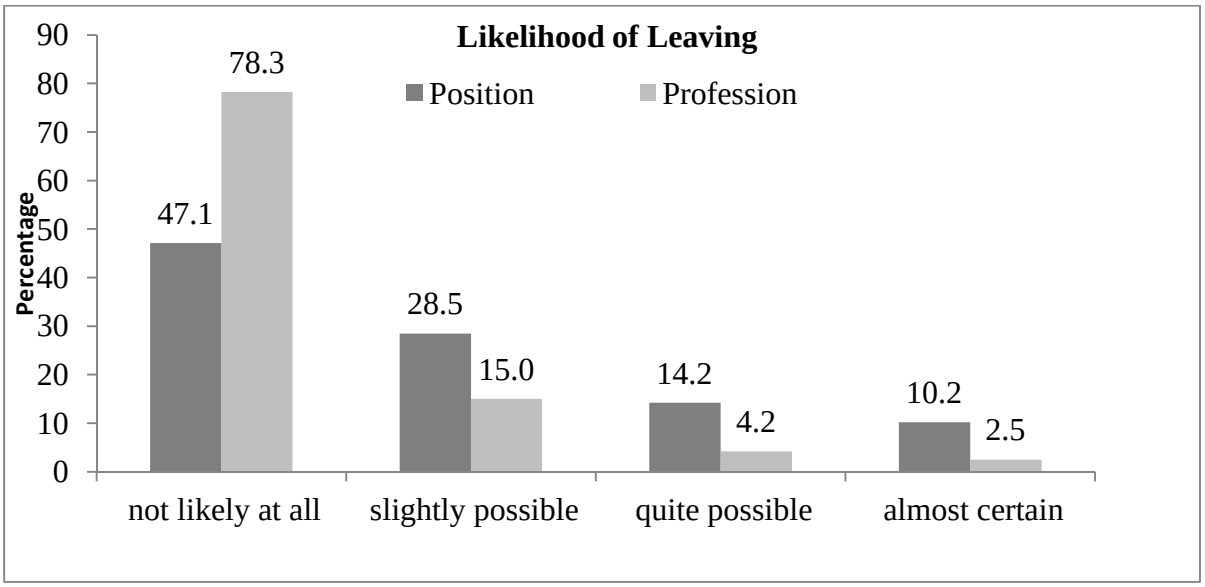


Figure 5.Distribution of likelihood variables.Median result for position response was ‘not likely at all,’ and median result for profession response was ‘never.’ N = 521. Missing = 1.

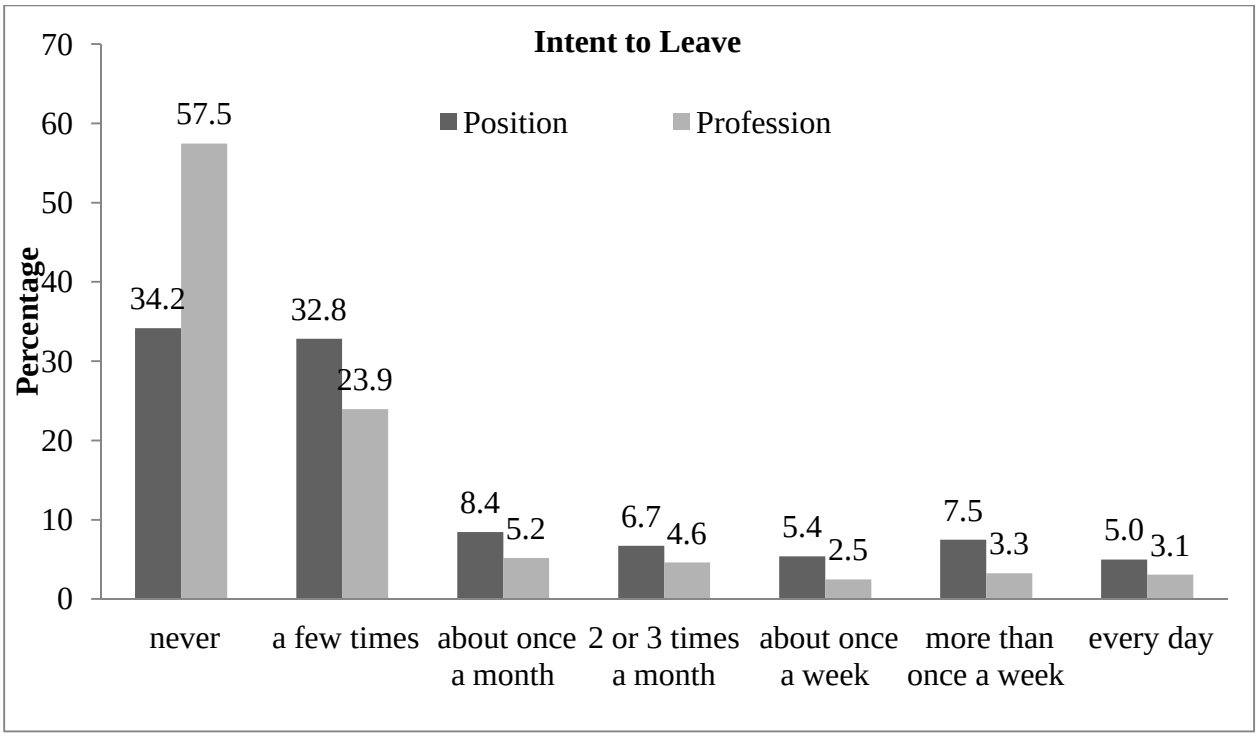


Figure 6. Distribution of intent variables. Median result for position response was 'a few times,' median result for profession response was 'never.' N = 520. Missing = 2.

Regression Analysis Results

This regression analysis section is divided into two parts to answer the original research questions. Each section is then divided into the analyses of *intent* and *likelihood*. The first section focuses on the **profession of nursing**. This is separated into the analysis for the *intent to leave* the profession and the *likelihood to leave* the profession. The second section examines *intent* and *likelihoodto leave* **the nursing position** currently held by the respondent.

To answer the research questions, the job stress variables were examined in relation to *intent* and *likelihood to leave the profession* or *the position*. Thus, there were four sets of analyses. Each analysis involved three steps (see Tables4& 6): (1) separate bivariate proportional odds logistic regression analyses for each job stress variable, (2) a multivariate logistic

proportional odds regression analysis including all job stress variable, and (3) a multivariate logistic proportional odds regression including all job stress variables and covariates.

The Profession.

Intent to Leave the Profession.

The first question of this analysis to answer is, "to what extent does job stress, as indicated by burnout and psychological distress, explain nurses' intent of leaving the profession?"

Step 1 (bivariate analyses)

In step 1, all the job stress variable responses were significantly associated with the RN's *intent to leave the profession.* Those with greater *intenttoleave* the profession were more likely to experience emotional exhaustion (OR = 2.41), depersonalization (OR = 1.97), to have poorer psychological health (OR = 1.26), and they were less likely to experience personal accomplishment (OR = 0.56) (see Table 3). The McFaddenR^2values are quite small suggesting that there are other explanatory variables in addition to these individually examined job stress variables that contribute to the *intent to leave* the profession.

Step 2 (multivariate analyses with job stress variables)

In step two of the analyses, emotional exhaustion is positively associated with the RNs' *intent*as indicated by an odds ratio of 1.99 times (see Table 4). This means that RNs are approximately two times more likely to report *intent* for every unit increase in burnout scores in the area of emotional exhaustion (Confidence Interval (CI) 95% = 1.62-2.44) when depersonalization, personal accomplishment, and psychological health score remain constant. Thus, for every one unit increase in emotional exhaustion the odds of rating their intention in a higher category is two times more than reporting in a lower rating. The psychological distress

(OR = 1.05) is also positively associated with *intent.* Conversely, a relative increase in personal accomplishment is associated with a lower rating of intent (OR = 0.70). This corresponds with a 1.45 *increase* in the *intent* given a one-unit *decrease* in personal accomplishment (1/effect = inverse odds ratio: 1/0.70 = 1.45). The association between depersonalization and intent is no longer statistically significant. The McFaddenR^2value increased from step 1 to 0.113 in step 2. Adding the job stress variables into a multivariate analysis has increased how much each of these variables together account for *intent to leave* the profession, but suggests that there are other variables that contribute to*intent to leave* the profession.

Step 3 (multivariate analyses with covariates)

The next question to address is "what other factors, over and above job stress, explains nurses' *intent to leave the profession*?" To answer this question, the workplace, demographic and employmentfactors were included in the logistic regression analysis of the profession of nursing. In this third step, emotional exhaustion is positively associated with *intent* with a corresponding OR of 2.1(CI 95% = 1.68-2.62) (see Table 3). With the other variables staying constant, this means that RNs are more likely to report greater *intent* if they are experiencing emotional exhaustion, whereby feeling emotionally overextended. Thus, for every one unit increase in emotional exhaustion the odds of reporting greater intent (a higher rating) are two times more than reporting less intent (a lower rating). Relative increases in depersonalization (OR = 1.26) and personal accomplishment (OR = 1.64 (positive OR = 1/0.61 = 1.64)) are also associated with increased *intent* when all the other covariates are entered into the model. Psychological distress was not statistically significant for this portion of the analysis.

The workplace, demographic, and employment factors showed that age, employment status, and country of first education are positively associated with *intent to leave the profession*.

Age is significantly associated with intent to leave. In particular, nurses who were between 39 and 50 years of age were 2.6 times more likely than their older co-workers to report a higher rating of *intent* (CI 95% = 1.19-5.58). Nurses with permanent status were 2.3 times less likely to have *intent* (positive OR = 1/0.43 = 2.33). The final work variable that was significant was the language of the country in which the nurse received their first education. This factor was significant showing that nurses educated in English were affected by 2.37 times to have higher reported *intent.* The McFaddenR^2value increased from 0.113 in step 2 to 0.157 in step 3 (see Table 5). Adding the workplace, demographic, and employment factors to the multivariate analysis has increased how much each of these variables together account for *intent to leave* the profession, but still suggest that other factorscontribute to the nurse's*intent to leave* the profession.

Likelihood to Leave the Profession.

The second question is, "to what extend does job stress, as indicated by burnout and psychological distress, explain nurses' likelihood of leaving the profession?"

Step 1 (bivariate analyses)

In step 1, emotional exhaustion, depersonalization, personal accomplishment and the psychological distress responses were significantly associated with *likelihood to leave the profession*(see Table 4). The McFaddenR^2values are also small suggesting that there are other explanatory variables, in addition to these individually examined job stress variables,that contribute to the *likelihood to leave* the profession.

Step 2 (multivariate analyses of job stress variables)

In step two of the analyses, emotional exhaustion was positively associated the RNs *likelihood* by 1.54 times (see Table 4). This means that RNs are approximately one and a half

times more likely to report greater *likelihood* for every unit increase in burnout scores in the area of emotional exhaustion (CI 95% = 1.20-1.98) when the other job stress variables remain constant. Thus, for every one unit increase in emotional exhaustion the odds of reporting a higher rating is one and a half times more than reporting in a lower rating. Psychological distress (OR = 1.07) was also positively associated with *likelihood to leave the profession.* The CI for the OR of depersonalization and personal accomplishment cross 1, which means that the OR of 1.17 (CI 95% = 0.92-1.48) and 0.88(CI 95% = 0.66-1.18)respectively were not statistically significant. Therefore, personal accomplishment and depersonalization arenot associated with *likelihood to leave the profession* when emotional exhaustionor psychological distress are taken into account. There was a marginal increase in the McFaddenR^2value from step 1 to 0.091 in step 2 (see Table 4). Adding the job stress variables into a multivariate analysis has increased how much each of these variables together account for *intent to leave* the profession, but still suggest that other variables contribute to the *likelihood to leave* the profession.

Step 3 (multivariate analyses with covariates)

The next question to address is "what other factors, over and above job stress, explain nurses' *likelihood to leave the profession*?" To answer this question, the workplace, demographic, and employmentfactors were included in the logistic regression analysis of the profession of nursing. In the third step, emotional exhaustion is positively associated with *likelihood* with a corresponding OR of 1.72 (CI 95% = 1.31-2.27) (see Table 4). With the other variables staying constant, this means that RNs are more likely to provide a higher *likelihood* rating if they are experiencing emotional exhaustion, whereby feeling emotionally drained and at the end of their rope. Thus, for every one unit increase in emotional exhaustion, the odds of rating their *likelihood* in a higher category are one and three quarter times more than providing a

lower rating. This means that RNs report having a higher *likelihood to leave the profession* if they are emotionally fatigued when the other job stress and workplace, demographic, and employment factors remain constant.

The workplace, demographic, and employment factors showed that there were no significant correlations with *likelihood of leaving the profession.* Thus, the workplace, demographic, and employment factors were not associated with differences in the responses to the *likelihood* question. The McFaddenR^2value increased from 0.091 in step 2 to 0.133 in step 3 (see Table 5). Adding the employment, demographic, and workplacefactors to the multivariate analysis has increased how much each of these variables together account for *intent to leave* the profession, but still suggest that there are other explanatory factorsthat contribute to the *likelihood to leave* the profession.

Summary of Findings Regarding Leaving the Profession.

Overall, nurses in this sample showed that emotional exhaustion was an important factor predicting *intent* and *likelihood to leave the profession*. However, although higher scores of depersonalization and psychological distress were associated with increased *intent*they were not associated with *likelihoodofleaving*. In addition,feelings of being ineffective in their role (personal accomplishment) did not have statistically significant associations with *intent* or *likelihoodtoleave* the profession.

The commonality between *intent* and *likelihood* in the step three analyses was the presence of emotional exhaustion. There were no further shared similarities between these two variables. For *intent*, age, current status on the unit, and the language of English for their initial nursing education were significant factors in step three. Not all factors associated with *intent* were the same as those associated with *likelihood.*

Table 4

Multivariate Analysis – Profession

	Intent to leave profession		Likelihood of leaving profession	
Step	OR (95% CI)	R^2	OR (95% CI)	R^2
1				
Emotional Exhaustion	**2.41 (2.05-2.84)**	0.098	**1.96 (1.62-2.37)**	0.077
Depersonalization	**1.97 (1.68-2.31)**	0.052	**1.73 (1.44-2.07)**	0.047
Personal Accomplishment	**0.56 (0.45-0.69)**	0.022	**0.69 (0.53-0.89)**	0.011
Psychological Distress	**1.26 (1.19-1.35)**	0.038	**1.22 (1.13-1.31)**	0.038
2		0.113		0.091
Emotional Exhaustion	**1.99 (1.61-2.44)**		**1.54 (1.20-1.98)**	
Depersonalization	1.14 (0.936-1.39)		1.17 (0.92-1.48)	
Personal Accomplishment	**0.69 (0.55-0.88)**		0.88 (0.66-1.18)	
Psychological Distress	**1.05 (1.00-1.09)**		**1.07 (1.02-1.12)**	
3		0.157		0.133
Emotional Exhaustion	**2.10 (1.68-2.62)**		**1.72 (1.31-2.27)**	
Depersonalization	**1.26 (1.01-1.57)**		1.10 (0.85-1.43)	
Personal Accomplishment	**0.61 (0.47-0.79)**		0.80 (0.59-1.10)	
Psychological Distress	1.05 (0.97-1.13)		1.06 (0.96-1.16)	
Gender				
Male	0.67 (0.24-1.88)		0.78 (0.20-3.00)	
Female*				
Unit Type				
Medical/surgical	0.95 (0.61-1.50)		0.84 (0.47-1.49)	
Non-medical/surgical*				
Age				
<30 years	1.33 (0.43-4.12)		0.30 (0.07-1.23)	
30-39 years	1.74 (0.68-4.45)		0.85 (0.26-2.82)	
39-50 years	**2.57 (1.19-5.58)**		0.91 (0.34-2.44)	
>50 years*				
Years worked as a nurse				
<3 years	3.38 (0.84-13.58)		3.45 (0.63-18.78)	
3-11 years	1.02 (0.34-3.04)		1.25 (0.31-4.98)	
11-25 years	1.22 (0.55-2.71)		1.41 (0.49-4.07)	
>25 years*				
Current employment status on unit				

	Intent to leave profession	Likelihood of leaving profession
Permanent	**0.43 (0.27-0.69)**	0.60 (0.34-1.06)
Temporary*		
Year Completed 1st Educational Qualification in nursing		
<1980	1.36 (0.30-6.21)	1.14 (0.18-7.39)
1980-1993	0.84 (0.25-2.78)	0.63 (0.15-2.56)
1993-2002.25	1.28 (0.49-3.34)	0.85 (0.29-2.45)
>2002.25*		
Country of 1st Education		
English	**2.37 (1.34-4.19)**	1.95 (0.90-4.20)
Non-English*		
Highest education qualification		
Diploma	0.97 (0.60-1.55)	0.58 (0.32-1.04)
BSN, MN, or PhD		

Note: Step 1 is the bivariate analysis, step 2 is the multivariate analysis with only the job stress variables, and step 3 is the multivariate analysis including the job stress variables and the covariates.McFaddenR^2 is used in this analysis.
*referent variable, **bold** indicates significant variable

Table 5
Comparison of McFadden R^2 between Step 2 and Step 3

	Job Stress	Job Stress and Covariates	
Dependent Variable	McFadden R^2	McFadden R^2	ΔR^2
Intent to leave profession	.113	0.157	0.044
Likelihood to leave profession	.091	0.134	0.043
Intent to leave position	.075	0.144	0.069
Likelihood to leave position	.036	0.148	0.112

The Position.

Intent to Leave the Position.

The next question is, ‘to what extent does job stress, as indicated by burnout and psychological distress, explain nurses’ intent to leave their position?’

Step 1 (bivariate analyses)

For the initial step in the analysis of *intent to leave the position*, all of the job stress variables were significant. In other words, those with greater *intentions to leave the position* were more likely to be experiencing job stress as measured by the MBI-HSS(burnout) and the General Health Questionnaire-12 (psychological distress). These nurses reported greater emotional exhaustion, depersonalization, psychological distress, and lower personal accomplishment. Nurses reporting high emotional exhaustion or depersonalization were approximately two times more likely to have greater *intent.* Low reported personal accomplishment was associated with 1.5 higher reported *intent* (1/0.67 = 1.49). Those who reported higher psychological distress were 1.2 times more likely to report greater likelihood of *intent to leave the position.* The McFaddenR^2valueswere quite small suggesting that there are other variables that contribute to the *intent to leave* the position

Step 2 (multivariate analyses of job stress variables)

According to the step two analyses, the OR for emotional exhaustion in relation to *intent* is 1.74 (see Table 6). Thus, RNs are more likely to have *intent* at higher ratings of emotional exhaustion (CI 95% 1.45-2.10). Thus, for every one unit increase in emotional exhaustion the odds of being in the highest category are 1.75 times more than being in the lower categories when the other job stress variables remain constant. Depersonalization (OR = 1.43) is also positively associated with *intent* (CI 95% 1.18-1.73). The association of psychological distress (General Health Questionnaire) and the personal accomplishment with *intent to leave the position* is not statistically significant in this second step of the analyses. The McFaddenR^2value increased from step 1 to 0.075 in step 2(see Table 6). Adding the job stress variables into a multivariate analysis increased how much each of these factors together account for *intent to*

leave the position, but still suggest that other variables contribute to the *intent to leave* the profession.

Step 3 (multivariate analyses with covariates)

The next question to address is "what other factors, over and above job stress, explain nurses' intent to leave the position?" To answer this question, the workplace, demographic, and employment factors were included in the logistic regression analysis of the current position on the nursing unit. According to step three of the analyses, emotional exhaustion is positively associated with *intent* because it has a corresponding OR of 1.8 (see Table 6). With the other variables staying constant, this means that RNs are more likely to report greater *intent* if they are experiencing emotional exhaustion, whereby feeling emotionally drained and at the end of their rope (CI 95% 1.47-2.21). Thus, for every one unit increase in emotional exhaustion the odds of being in the highest category is over one and a half times more than being in the lower categories. The other job stress variables were not significant in this step of the analyses.

The workplace, demographic, and employment factors showed that unit type (medical/surgical),the year of first education qualification completion in nursing (greater length of time since completion),language of first education (those educated in non-English), and less education qualification were all significant variables associated with *intent to leave the position.* Nurses who were working on a medical or surgical unit or a combination of the two were 4.91 times increased likelihood to have *intent to leave the position* than RNs who were on a specialty unit (CI 95% 3.15-7.67). The length of nursing tenure showed that those with longer time since program graduation had greater *intent* than those who were recent nursing graduates. Specifically, nurses who had completed their primary nursing education prior to 1980 (approximately 25 years or more ago)were 5.04 times more likely to report *intent* (CI 95% 1.34-

19.03). Those nurses educated in non-English speaking programs has greater intentions to leave their current position (OR = 1.85 (1/effect = inverse odds ratio;1/0.54=1.85)).Nurses who had less education were 1.55 times more likely than those with university education to have *intent to leave.* The McFaddenR^2value increased from 0.075 in step 2 to 0.144 in step 3 (see Table 5). While the workplace, demographic, and employment factorswith the job stress variables account for 14% of the *intent to* leave the position factors, there remain factors that are not accounted for in this analysis.

Likelihood to Leave the Position.

The next question to answer is, 'to what extend does job stress, as indicated by burnout and psychological distress explain nurses' *likelihood of leaving the position*?'

Step 1(bivariate analyses)

For the initial step in the analyses of *likelihood to leave the position,* all of the job stress variables were significant. Nurses reporting high emotional exhaustion or depersonalization were more than 1.5 times more likely to have *likelihood.* Nurses with lower reported personal accomplishment were 1.3 times more likely to report greater *likelihood* (1/0.772 = 1.30). Those with poorer psychological health were 1.1 times more likely to have *likelihood to leave* the position. The McFaddenR^2values are quite small suggesting that there are other contributory variables to the *likelihood to leave* the position (see Table 6).

Step 2 (multivariate analyses of job stress variables)

The analysis of the *likelihood of leaving the position* was completed using the proportional odds regression analyses in step two. It was found that emotional exhaustion is positively associated *likelihoodtoleave*(OR = 1.45; CI 95% 1.20-1.74). This means that RNs who reported beinga one unit higher level of emotional exhaustion were almost one and a half

times more likely to have increased *likelihood to leave the position.* Depersonalization, personal accomplishment and psychological distress were not significantly associated with the *likelihood of leaving the position.*The McFaddenR^2value increased marginally from step 1 to 0.036 in step 2 (see Table 6). Adding the job stress variables into a multivariate analysis has increased how much each of these variables together account for *intent to leave* the profession, but still suggest that there are other contributory factorsto explain the *likelihood to leave* the position.

Step 3 (multivariate analyses with covariates)

The final question of this analysis is, "what other factors, over and above job stress, explains nurses' *likelihood to leave the position*?" To answer this question, the workplace, demographic, and employmentfactors were included in the logistic regression analysis of the current nursing position. According to step three, emotional exhaustion is positively correlated with *likelihood* because it has an OR of 1.46 (see Table 6). When the other variables stay constant, RNs in this study were more likely to report greater *likelihood to leave the position* (CI 95% 1.18-1.80). The remaining job stress variables (depersonalization, personal accomplishment, and psychological distress) were not significant in this step of the analysis.

Upon completing this final analysis piece, the workplace, demographic, and employment factors showed that unit type, current employment status on the unit, and the language of their nursing educationwere statistically significantly associated with *likelihood*. Nurses who were working on a medical or surgical unit or a combination of the two were 5.58 times more likely to have *likelihood to leave the position* than RNs who were on a specialty unit (CI 95% = 3.39-9.21). Those with permanent status had higher *likelihood* than their temporary counterparts (OR = 1.87, CI 95% = 1.16-3.02). Though surprising, this means that permanent staff were more likely to leave than the temporary staff nurses. Education language was significant, showing that

nurses educated in non-English were 2.17 times more likely to have *likelihood* (positive OR = 1/0.46 = 2.17).The McFaddenR^2value increased from 0.036 in step 2 to 0.148 in step 3 (see Table 5). Adding the workplace, demographic, and employment factors to the multivariate analysis has increased how much each of these variables together account for *intent to leave* the profession, but still suggest that there are other contributing factorsto the *likelihood to leave* the position.

Summary of Findings for Leaving the Position.

In summary, the step two analyses showed that the RNs in this sample experiencing high dissociation from their work (depersonalization) or feeling emotionally exhausted were more likely to have *intent to leave the position* while *likelihood to leave the position* was only influenced by greater feelingsof emotionally exhaustion. There were also similarities in the multivariate analysis of step three. Feeling emotionally exhausted, working on a medical and/or surgical unit, and the country of first education in a language other than English all had statistical significance in this final step in each of the analyses for *intent* and/or *likelihood to leave the position*.Differences were that those with a greater number of years since completion of initial nursing education and who had a higher education status had greater *intentions* to leave their position, but greater *likelihood* was not identified. *Likelihood of leaving* the position was influenced by employment status (permanent) but *intent* was not.

Table 6

Multivariate Analysis – Position

	Intent to leave position		Likelihood of leaving position	
Step	OR (95% CI)	R^2	OR (95% CI)	R^2
1				
Emotional Exhaustion	**2.13 (1.85-2.46)**	0.065	**1.59 (1.38-1.82)**	0.033
Depersonalization	**2.11 (1.80-2.47)**	0.049	**1.51 (1.30-1.76)**	0.022

		Intent to leave position		Likelihood of leaving position	
	Personal Accomplishment	**0.67 (0.55-0.82)**	0.010	**0.77 (0.63-0.95)**	0.005
	Psychological Distress	**1.19 (1.13-1.27)**	0.019	**1.11 (1.04-1.18)**	0.008
2			0.075		0.036
	Emotional Exhaustion	**1.74 (1.45-2.10)**		**1.45 (1.20-1.74)**	
	Depersonalization	**1.43 (1.18-1.73)**		1.18 (0.97-1.43)	
	Personal Accomplishment	0.85 (0.69-1.06)		0.92 (0.74-1.15)	
	Psychological Distress	1.00 (0.97-1.04)		0.99 (0.96-1.03)	
3			0.144		0.148
	Emotional Exhaustion	**1.80 (1.47-2.21)**		**1.46 (1.18-1.80)**	
	Depersonalization	0.87 (0.32-2.34)		1.02 (0.82-1.27)	
	Personal Accomplishment	0.79 (0.56-1.11)		1.02 (0.80-1.29)	
	Psychological Distress	1.07 (0.99-1.15)		1.08 (0.99-1.17)	
	Gender				
	Male	0.76 (0.33-1.72)		0.49 (0.21-1.16)	
	Female*				
	Unit Type				
	Medical/surgical	**4.91 (3.15-7.67)**		**5.58 (3.39-9.21)**	
	Non-medical/surgical*				
	Age				
	<30 years	1.09 (0.34-3.51)		1.78 (0.60-5.28)	
	30-39 years	0.69 (0.27-1.18)		1.98 (0.77-5.09)	
	39-50 years	0.53 (0.26-1.11)		1.30 (0.58-2.89)	
	>50 years*				
	Years worked as a nurse				
	<3 years	1.01 (0.37-2.81)		0.39 (0.11-1.33)	
	3-11 years	1.66 (0.69-3.96)		0.45 (0.16-1.27)	
	11-25 years	0.93 (0.45-1.91)		0.53 (0.24-1.18)	
	>25 years*				
	Current employment status on unit				
	Permanent	1.40 (0.89-2.20)		**1.87 (1.16-3.02)**	
	Temporary*				
	Year Completed 1st Educational Qualification in nursing				
	<1980	**5.04 (1.34-19.03)**		3.56 (0.87-14.51)	
	1980-1993	**3.99 (1.42-11.18)**		2.53 (0.89-7.21)	
	1993-2002	**2.23 (1.01-4.93)**		1.55 (0.69-3.46)	
	>2002*				
	Country of 1st Education				

	Intent to leave position	Likelihood of leaving position
English	**0.54 (0.33-0.87)**	**0.46 (0.28-0.76)**
Non-English*		
Highest education qualification		
Diploma	**1.55 (1.01-2.37)**	0.79 (0.51-1.24)
BSN, MN, or PhD*		

Note. Step 1 is the bivariate analysis, step 2 is the multivariate analysis with only the job stress variables, and step 3 is the multivariate analysis including the job stress variables and the covariates.McFaddenR^2 is used in this analysis.
*Referent variable, **bold** indicates significant variable

Summary of Findings

The research questions were divided into both profession and position analyses. This was further separated to examine the responses to *intent* and *likelihood.* By analyzing each question separately, the analysis was able to uncover an answer to the initial research questions. The overall findings from this study were that emotional exhaustion was consistently associated with an increase in *intent* and *likelihood* for both the profession and position for all steps. In summary, nurses with the greatest *intent of leaving* the profession were those emotionally overextended. Relative increases in professional nursing experience education in the Englishlanguage were associated with relatively greater *intent* and *likelihoodto leave the profession*. As well, those nurses who were over the age of 39 years (relative to older nurses), graduated from an English speaking program and were in non-permanent positions had greater *intentions to leave* the profession. Nurses in medical/surgical units were more likely to report greater *intent* and *likelihood to leave their current position*. Not all factors associated with *intent* were the same as those associated with *likelihood.*

Chapter Five: Discussion

This secondary data analysis is relevant to the current nursing profession as it highlights the associated relationships between job stress and anticipated turnover. This final chapter summarizes the results, compares the outcomes to the current literature, outlines the limitations, and presents final recommendations.

Summary of Findings

With regards to leaving the profession, nurses who are emotionally exhausted are almost two times more likely to have intentions to leave the profession and one-half times more likely to do so. Burnout, specifically increased emotional exhaustion, was the sole variable that was consistently predictive of both *intent* and *likelihood to leave the* profession and the position. When nurses psychologically distance themselves from others (depersonalization) they are approximately two times more likely to have intentions to leave the profession but are not likely to do so. Those who experience a diminished sense of their own sense accomplishments (personal accomplishment) are more likely to have *intentions to leave*the profession however; the likelihood of doing so is not significant. In additional to feeling emotionally exhausted, nurses that had less than three years of experience in the nursing profession and that received their initial nursing education in an English speaking program, had greater *intentions to leave* the profession, but this did not influencetheir*likelihood* to do so. Thus, not all factors associated with *intent* were the same as those associated with *likelihood* (e.g., depersonalization, personal accomplishment, age, employment status, and country of first education were associated with *intent* and not *likelihood*) and thus these dependent variables are not synonymous with the same outcome.

The nurses' current position and *intent* or *likelihood* had more predictive outcomes than those of the profession. RNs in this sample experiencing high dissociation from their work (depersonalization) and greater emotional exhaustion were more likely to have *intent to leave their current position*; however, the *likelihood* of doing so was only influenced by greater emotional exhaustion. When combined with all variables, emotional exhaustion, working on a medical and/or surgical unit, and being educated in a non-English speaking program were statistically significant and predictive of *intent* or *likelihood to leave the position*. It is important to note, that though significant factors were discovered that contribute to the explanation of turnover among nurses, the explained variances of the statistical regression models are not very large (highest McFadden $R^2 = 0.157$). Thus, there are perhaps more significant factors that explain more than half of the variance in nurses' intentions or their likelihood to leave the profession or the position.

Relation to the Literature

The literature review that was conducted provided insight into this area of research related to turnover among nurses. This secondary data analysis is relevant to the current nursing profession and literature in highlighting the associations between job stress and nurses'self-reported *intent* and *likelihoodto leave* their position and the profession. The covariates enable the data analysis to be controlled for some of the employment, demographic, and workplace differences in this sample, which may have implications for recruitment and retention of nurses in acute health care settings (Cavanaugh, 1990). First, I will discuss the job stress factors followed by the workplace, demographic and employmentfactors.

Job Stress Factors

The responses of this sample of acute care RNs and those from the study conducted by Pogyhosyanet al., (2010) were similar in the mean responses to the burnout scale categories. This was consistent with the reporting that Canadian nurses report moderate rates of burnout (Maslachet al., 1996). The rates of reported burnout were higher in the current study than were found by Kowalskiet al. (2010), who studied acute care nurses and nurses in training in Germany.They reported rates of up to 45%, while this study showed that nurses' reporting moderate to high levels of emotional exhaustion was greater than 60%. Previous studies have reported a positive association between *intent to leave* and emotional exhaustion (MBI-HSS) (Estryn-Beharet al., 2007; Leiter&Maslach, 2009; Simonet al., 2010; and Van Bogaertet al., 2010). Estryn-Behar et al.(2007) found this association for the profession, Van Bogaertet al.(2010) and Leiter and Maslach (2009) found that burnout was significantly associated with intent to leave the position, and Simon et al.(2010) studied this relation for both the position and the profession. One other study has found that depersonalization and a diminished sense of personal accomplishment were predictive of turnover among nurses, concerning their position (Lieter&Maslach, 2009). Of significant importance is the finding that nurses who are emotionally overextended intend to leave their position and profession as well as are more likely to leave. As was found by Zeytinoglu et al (2006), job stress, but not the demographic variables, were the most positively correlated with the propensity to leave the profession.

More than 30% of nurses in the current study reported moderate to high psychological distress. This correlates with other studies that have found that nurses report higher psychological distress than the general population (Hayeset al., 2011; McVicar, 2003). If emotional exhaustion and psychological distress are strong proxies for actual turnover then it is

important for individuals and organizations to support nurses experiencing stress. The literature suggests that stress reduction in the workplace is associated with improved rates in turnover among nurses (Coomber&Barriball, 2006). Furthermore, McVicar (2003) found that this distress was associated with the workload, style of current leadership or management, professional conflict, and the emotional cost of caring. Creating a culture on the unit where nurses feel comfortable, management is approachable, and conflict resolution is a priority would be beneficial in assisting to decrease the level of workplace stress for nurses (Gering & Connor, 2002).

Workplace, Demographic, and EmploymentFactors

There were several non-stress factors that are worthy of discussion in this chapter. First, it was interesting to note that nurses with permanent status were almost two times more likely to leave their current position than those RNs who were identified as having temporary status. This, surprisingly, was the opposite for *intent to leave the profession*. A possible explanation for this is that nurses who are permanent have worked in a particular practice area for a number of years and are now looking for new opportunities in another position. Those RNs in temporary positions are more likely as union employees to be successful in being hired in another area when they do not have permanent status. The findings from this study differ from others who have found that nurses with longer lengths of services are have lower intentions and likelihood of leaving their position (Breweret al., 2012;, Price & Mueller, 1981). As was found in the literature, *intent to leave*the profession was consistently higher with nurses who were casually employed (Zeytinogluet al., 2006). But, Breweret al. (2012) found that temporary or casual nurses were less likely to leave their position, compared to their full–time employed

counterparts. Perhaps this is related to increasing tenure and seniority within their role to attain job stability if their position changed.

This study did not show significance with nurses who had less than three years of experience in the nursing profession. A study of graduate nurses found that nurses under the age of 30 had higher rates of *intent* than those over 30 (Beecroft, Dorey, &Wenten, 2007). They also found that there was higher rate of *intent* if the individuals were over 30 and were not working on a unit they chose (Beecroft, et al., 2007). This is consistent with the literature review-discussing turnover conducted by Hayeset al(2011).

Also of note, those who work on a medical or surgical unit (rather than specialty areas of practice) are nearly five times more likely to report greater *likelihood of leaving* the position, even when controlling for job stress variables. This was not significant predictor of leaving the profession. One plausible explanation for this is that medical and surgical units are often entry level units where beginning nurses are hired to provide a solid foundation for all areas of nursing practice. As well, the medical and surgical areas are typically practice settings where nurses go to obtain a baseline level of experience prior to moving into more specialty areas of practice. As they gain experience, nurses then look for other practice opportunities in acute care specialty areas as well as public health, home health and mental health. As such, nurses working in these areas have a shorter tenure before changing positions. In the literature, it has been documented that nurses that practice for less than three years are typically new graduate nurses that work on a medical and/or surgical unit (Breweret al., 2012). It would make sense then that these are the same individuals that have greater *intent* and *likelihood to leave* their current position. Breweret al., (2012) found that 18.1% of nurses left their current position within the first year of starting.

A finding that was not expected is that nurses that receive their initial nursing education in a non-speaking English program have lower intentions to leave the profession, but higher intentions to leave their current position. Breweret al., (2012) found that language was not a significant factor in predicting *intent to leave* their position. One reason for this finding may be that nurses from non-English speaking schools are more likely to be internationally educated nurses. When they arrive to Canada and are perhaps less familiar with the Canadian health-care system, they may become discouraged in their nursing role, experience greater challenges with nursing practice given the Western context of health care therefore deciding to leave their current position while remaining in the profession of nursing. Another explanation is that they may accept entry level positions and then transition to new roles once they are within the Canadian health care system. However, nurses that graduate from English speaking programs are perhaps more confident in obtaining jobs outside nursing and hence more likely to leave the profession.

The findings of this study correspond with Hayeset al. (2011) with respect to *intent to leave the position* and the factor of having advanced education. Those RNs with higher levels of education in nursing had greater *intent to leave their position*, but not the profession. A possible explanation of this is that as nurses pursue additional post-secondary education, such as RN post-graduate certification or a master's degree, they are intent to leave their current position to pursue additional roles in the health care system. This may show a strong commitment of RNs in the sample to their nursing career overall.

Limitations

Despite the valuable results, there are limitations that must be taken into account. Firstly, the data are non-random and were collected at only one point in time creating cross-sectional data from 522 acute care RNs in a large urban health authority in BC, Canada.One way that this

limitation was minimized was by obtaining a population sample of nurses on the participating units. Due to the cross-sectional nature of the data, causal inferences cannot be made and longitudinal analysis would be recommended. On average, 83% of the nurses from each unit participated (range = 61% to 97%) (Wolff, 2009). Though this data set is unique, the drawback is that it is only generalizable to nurses in acute care hospital settings in urban contexts; however, in Canada and BC 61% and 68% of nurses respectively do work in this setting (CIHI, 2012). In addition, the challenges in smaller rural hospitals may be quite different.

In addition to these limitations, all of this data is captured using self-reported data and does not include the actual turnover rates in the selected hospitals. Though self reporting may not show the turnover rates for this point in time, it does allow for insight into the nurses' perspective and perception of *intent* and *likelihood*. This places value on the experiences and perspectives of the participants. To enrich the data it could be correlated with actual turnover rates of these two hospital settings from that time period. In addition, this study was limited by the variables that were included in the original study. For example, present or perceived employment opportunities could be used as a control variable, as the perception of these may influence nurses' turnover rate (Estryn-Beharet al., 2007). Interpretation of this data are to be approached with caution, as it is only 'intent' and not actual turnover within an organization that is measured (Dalton, Johnson, & Daily, 1999).

Practical Implications

The consistent finding in the current study is that nurses who are feeling emotionally overextended are more likely to leave their current position and the nursing profession. When only the job stress variables were considered, nurses with the greatest *intent of leaving the profession* were relatively more emotionally overextended and mentally distant from others

(patients and coworkers), and that had a lower sense of self-efficacy about their work. When multiple factors were considered, emotional exhaustion remained significant. In addition, nurses who were 39 to 50 years of age (relative to older nurses), graduated from an English-speaking program and were in non-permanent position were found to have greater intent to leave the profession of nursing. This *likelihood* then of following through on this intent to leave the profession was only influenced by greater emotional exhaustion. Similarly, nurses with the *greatest intent of leaving the positions* were those emotionally overextended as well as those working on a medical surgical floor, graduated from a non- English speaking program and graduated prior to 1980 (i.e., those closer to retirement or looking for a change). This *likelihood* then of following through on this intent were only influenced by individuals who are feeling emotionally extended, in permanent positions and graduated in non-English speaking programs.

On a practical level, these findings highlight the needs for intervention at the individual, manager and organizational level. At the individual level, it would be important for nurses to identify effective coping strategies to deal with stress. Taking advantage of employee assistance programs for feeling emotionally depleted would be equally important. Nurses may benefit from enhanced work-life balance to mitigate the effects of job stress. For example, the employer could have formal career planning programs to ensure nurses stay with the employer as they seek new positions in specialty or non-hospital practice areas or offer promotions after higher education is completed.

Managers and senior leaders in organizations also need to consider the perceived job-stress of their staff. This may involve finding ways to assist the work-life balance of their employees, for example, creating the option for self-scheduling on the unit. Other ways to alleviate perceived job stress is to have participative leadership management where employers

check in regularly with employees to ask about the workload and ask about improving processes on the unit (Van Bogaertet al., 2010). Improving processes may increase workplace efficiency and decrease perceived job stress.Exhibiting care for their employees and modelling coping and management of their own job stress is needed. This could be done at the organizational level, as it would be important to have workplace health programs geared towards stress reduction. For example, in Ontario, Canada, an initiative to reduce workload stress is the 80-20 model, where nurses aged 55 years and older spend 20% of their clinical time on teaching, research, or on-the-job mentoring (Shamian& El-Jardali, 2007). This initiative is also aimed at addressing the retention of nurses who may be considering retirement.

Furthermore, in new graduate programs offered by health authorities, it would be important to include curriculum content around the effects of job stress to mitigate turnover later. Those nurses who have high levels of burnout are more likely to have *intent* or *likelihood to leave* and thus supports for these nurses should be created and implemented. Empowerment of nurses who are experiencing burnout has decreased *intent* leading to turnover (Zurmehlyet al., 2009).Turnover is an inevitable outcome of employment that employers can influence but not eliminate. The complexity of current turnover among nurses means that there is no one solution to decreasing turnover; multiple points of intervention exist.

Concerning nursing education, self-care and setting boundaries in a caring environment need to be taught and carried through from school days into the workforce. This education links to nursing practice because what is learned in the classroom or from colleagues on the acute care units, is then implemented. If there is a culture of chronic burnout in a unit, this needs to be explored and addressed.

There are also practical implications from this research for counteracting the effect of the demographic, workplace, and employment variables. Average age on a unit needs to be considered to allow for projection of potential retirement and family planning. There may be some restrictions for the number of full or part time jobs on a given unit, but allowing for job sharing and shift swapping would improve flexibility of nurses' time. Discussing workload and process improvements with nurses on medical or surgical units, where turnover is most likely, may assist in helping nurses feel responsibility and ownership of their current unit and keep them longer in their current position (Van Bogaertet al., 2010).

Retention strategies are integral to the long-term health of registered nurses who work in these settings. Understanding what affects nurses' intent to leave and their likelihood of leaving is vital and pertinent to those in leadership positions within the profession of nursing. This data analysis is a feasible method of understanding nurses' *intent to leave* or their *likelihood of leavingtheir current unit* or *profession*. As was found with Ajzen's (1991) theory of planned behaviour, the stronger the *intent to leavethe profession* or *position* the higher the *likelihood to leave*. The theory of planned behaviour states, "the stronger the intention to engage in a behavior, the more likely should be its performance" (Ajzen, 1991, p. 181). It assumes that intentions capture what factors motivate or influence a certain behavior. This theory suggests that nurses with higher *intent* would therefore have a higher *likelihood of leaving* and thus greater turnover among nurses. This may correlate with actual turnover among the nurses in this study, but this data was not captured. This would be true either in the profession or for changing their current nursing position.

This study shows that though nurses may report a high *intent* the *likelihood* reported is not equivalent. *Likelihood* may be a better predictor of turnover than *intent*as *intent* refers to

having a historical plan to leave, but *likelihood* refers to the current probability of leaving. By showing a comparison between *intent* and *likelihood to leave the profession* or *position,* this study shows that there are few factors that were held in common. More research is needed in the area of the *likelihood of leaving* to expand upon its correlation with actual turnover among nurses. In addition, further studies comparing intent and likelihood should be added to create more robust findings in this area. This study has started to fill the gap in the literature that compares *intent* and *likelihood* in the Canadian nursing experience. Moreover, the current study illustrates there are certain factors that causes nurses to think about leaving (intent) however, when identifying triggers that may lead nurses to the likelihood of acting, the only consistent factor is emotional exhaustion. This speaks to the important and the management of emotional exhaustion and self-care, as already discussed.

Future Research Directions

Further research is needed to examine the moderating effects, such as nurses' resilience, that may mitigate the effect of higher levels of burnout that is associated with greater intentions and likelihood of leaving the profession and position. The factors of work stress, full-time positions, and mental health compound the impact of job stress on individual nurses, making this an imperative topic for nursing research both locally and globally. This could mean that opportunities are needed for nurses on busy units for engagement with more education, voicing their concerns and having validation along with reprieve.

Further exploration is needed to understand why there is a difference between the years worked as a nurse and the age as the odds ratio differs in this study for *intent to leave the profession*. Though it is evident that nurses are more likely to report the *intent* or *likelihood to*

leave their position if they are feeling emotional exhaustion this does not mean that all nurses who are emotionally exhausted will leave their current position, nor the profession.

According to the analysis, the explained variances of the models were not very large, which means that further research is needed on predictors of anticipated turnover other than job stress. Though job stress is important, there are other factors that are likely to be more important. Turnover is a multifaceted yet inevitable concern of health human resource planners (Price & Mueller, 1981). Apker and Propp (2009) found that nurses had lower *intent* if there was empowerment of team members and found that mentoring was conversely predictive of *intent*. Nedd (2006) found that *intent* was not significantly related to individual characteristics of the nurses who participated, but to nurses' perceptions of access to opportunities, support, and resources. These factors that may impact or contribute to the outcome of *intent* were not included in this analysis, but would further the exploration of this research area.

Chapter Summary

Job stress and its relation to turnover has been evaluated in this study and has contributed to the expansion nursing research knowledge. This information may assist decision and policy makers with improving health human resource planning. Nurses who are emotionally overextended are more likely to have *intent to leave* their current profession and position. By mitigating the factors that contribute to job stress, there is the potential to decrease the amount of turnover among acute care nurses. Future research is needed to understand the other factors that are predictive of anticipated turnover among nurses.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50,* 179-211.

Apker, J., Propp, K., & Ford, W. (2009). Investigating the effect of nurse-team communication on nurse turnover: Relationships among communication processes, identification, and intent to leave. *Health Communication, 24*(2), 106-114. doi:10.1080/10410230802676508

Beecroft, , P.C., Dorey, F. &Wenten, M. (2008). Turnover intention in new graduate nurses; A multivariate analysis. *Journal of Advanced Nursing 62*(1), 41-52. doi: 10.1111/j.1365-2648.2007.04570.x

Brewer, C., Kovner, C., Greene, W., Tukov-Shuser, M., &Djukic, M. (2012). Predictors of actual turnover in a national sample of newly licensed registered nurses employed in hospitals. *Journal of Advanced Nursing, 68*(3), 521-538. doi:10.1111/j.1365-2648.2011.05753.x

Camerino, D., Conway, P. M., Van der Heijden, B.I.J., Estryn-Behar, M., Consonni, D., Gould, D., &Hasselhorn, H. M. (2006). Low-perceived work ability, ageing and intention to leave nursing: A comparison among 10 European countries. *Journal of Advanced Nursing, 56*(5), 542-552. doi:10.1111/j.1365-2648.2006.04046.x

Canadian Institute for Health Information [CIHI] (2010). *Registered Nurses: Canadian Trends, 2006-2010*. Retrieved from http://secure.cihi.ca/cihiweb/products/RegulatedNursesCanadianTrends2006-2010_EN.pdf

Canadian Institute for Health Information [CIHI] (2012). *Registered Nurses: Canadian Trends, 2006-2010*. Retrieved from https://secure.cihi.ca/free_products/Regulated_Nurses_EN.pdf

Cavanagh, S.J., (1990). Predictors of nursing staff turnover. *Journal of Advanced Nursing, 15,* 373-380.

Cocco, E., Gatti, M., de Mendonça Lima, C.A., & Camus, V. (2003). A comparative study of stress and burnout among staff caregivers in nursing homes and acute geriatric wards. *International Journal of Geriatric Psychiatry, 18*, 78-85. doi: 10.1002/gps.800

Coomber, B., &Barriball, K. (2007). Impact of job satisfaction components on intent to leave and turnover for hospital-based nurses: A review of the research literature. *International Journal of Nursing Studies, 44*(2), 297-314.

Dalton, D.R., Johnson, J.L., & Daily, C.M. (1999). On the use of "intent to…" variables in organizational research: An empirical and cautionary assessment. *Human Relations, 52*(10).

DeCola, P., & Riggins, P. (2010). Nurses in the workplace: Expectations and needs. *International Nursing Review, 57*(3), 335-342. doi:10.1111/j.1466-7657.2010.00818.x

Dillman, D. (2000). *Mail and internet surveys: The tailored design method*. New York: John Wiley.

Donath, S. (2001). The validity of the 12-item general health questionnaire in Australia: A comparison between three scoring methods. *Australian & New Zealand Journal of Psychiatry, 35*(2), 231-235.

Estryn-Behar, M., Van der Heijden, B., Oginska, H., Camerino, D., Le Nezet, O., Conway, P., Fry, C., &Hasselhorn, H. (2007). The impact of social work environment, teamwork characteristics, burnout, and personal factors upon intent to leave among European nurses. *Medical Care, 45*(10), 939-950.

Fitzpatrick, J.J., Campo, T.M., Graham, G., &Lavandero, R (2010). Certification, empowerment, and intent to leave current position and the profession among critical care nurses. *American Journal of Critical Care 19*(3), 218-26.doi: 10.4037/ajcc2010442

Gelsema, T.I., Van Der Doef, M., Maes, S., Janssen, M., Akerboom, S., &Verhoeven, C. (2006) A longitudinal study of job stress in the nursing profession: Causes and consequences. *Journal of Nursing Management 14*, 289-299.

Gering,J., & Connor, J. (2002). A strategic approach to employee retention. *Healthcare Financial Management 56* (11), p. 40-44.

Goldberg, D., & Williams, P. (1988).*Ausersguide to the General Health Questionnaire*. London, UK: NFER Nelson Publishing Company Ltd.

Hasselhorn, H.M., Tackenberg, P., Kuemmerling, A., Wittenberg, J., Simon, M., Conway, P.M.,& Mueller, B.H. (2006). Nurses' health, age and the wish to leave the profession--findings from the European NEXT-study. *La Medicina Del Lavoro, 97*(2), 207-214.

Hayes, L.J, O'Brien-Pallas, L., Duffield, C., Shamian, J., Buchan, J., Hughes, F., Spence Laschinger, H.K., & North, N. (2011). Nurse turnover: A literature review – An update, *International Journal of Nursing Studies49* (7), 887-905. doi:10.1016/j.ijnurstu.2011.10.001

Kalliath, T. J., O'Driscoll, M. P., &Brough, P. (2004). A confirmatory factor analysis of the general health questionnaire-12. *Stress & Health: Journal of the International Society for the Investigation of Stress, 20*(1), 11-20. doi:10.1002/smi.993

Kanste, O. (2008). The association between leadership behaviour and burnout among nursing personnel in health care. *Nordic Journal of Nursing Research & Clinical Studies / VårdiNorden, 28*(3), 4-8.

Kowalski, C., Ommen, O., Driller, E., Ernstmann, N., Wirtz, M.A., Kohler, T., & Pfaff, H. (2010). Burnout in nurses – the relationship between social capital in hospitals and emotional exhaustion. *Journal of Clinical Nursing 19*, 1654-1663. doi: 10.1111/j.1365-2702.2009.02989.x

Lambert , V.A., Lambert, C.E., & Ito, M. (2004) .Workplace stressors, ways of coping and demographic characteristics as predictors of physical and mental health of Japanese hospital nurses. *International Journal of Nursing Studies 41,* 85-97. doi:10.1016/S0020-7489(03)00080-4)

Laschinger, H., Finegan, J., Shamian, J., &Wilk, P. (2003). Workplace empowerment as a predictor of nurse burnout in restructured health care settings. *Longwoods Review, 1*(3), 2-11. Retrieved from http://www.longwoods.com/content/17242

Lavoie-Tremblay, M., O'Brien-Pallas, L., Desforges, N, &Marchionnic, C. (2008). Addressing the turnover issue among new nurses from a generational viewpoint. *Journal of Nursing Management 16,* 724-733. doi: 10.1111/j.1365-2934.2007.00828.x

Lee, H., Song, R., Cho, Y. K., Lee, G. Z., & Daly, B. (2003). A comprehensive model for predicting burnout in Korean nurses. *Journal of Advanced Nursing, 44*(5), 534-545. doi:10.1046/j.0309-2402.2003.02837.x

Leiter, M. P., &Laschinger, H. K. (2006). Relationships of work and practice environment to professional burnout: Testing a causal model. *Nursing Research, 55*(2), 137-146.

Leiter, M.P., &Maslach, C. (2009). Nurse turnover: The mediating role of burnout. *Journal of Nursing Management 17,* 331-339.

Lowe, G. S. (2006). *Creating healthy health care workplaces in British Columbia: Evidence for action*. Vancouver, BC: Provincial Health Services Authority.

Maslach, C., Jackson, S. E., &Leiter, M. P. (1996). *Maslach Burnout Inventory manual* (3rd ed.). Mountain View, CA: Consulting Psychologists Press.

Maslach, C., Schaufeli, W., &Leiter, M. (2001). Job burnout. *Annual Review of Psychology, 52,* 397-422.

McVicar, A. (2003). Workplace stress in nursing: A literature review. *Journal of Advanced Nursing, 44*(6), 633-642. doi:10.1046/j.0309-2402.2003.02853.x

Nedd, N. (2006). Perceptions of empowerment and intent to stay. *Nursing Economic$, 24*(1), 13-19.

O'Brien-Pallas, L., Murphy, G. T., Shamian, J., Li, X., & Hayes, L. J. (2010). Impact and determinants of nurse turnover: A Pan-Canadian study. *Journal of Nursing Management, 18*(8), 1073-1086. doi:10.1111/j.1365-2834.2010.01167.x

O'Connell, A. (2006). *Logistic regression models for ordinal response variables.* (Series/Number 07-146).Thousand Oaks, CA: SAGE Publications.

Poghosyan, L., Aiken, L. H., & Sloane, D. M. (2009). Factor structure of the Maslach Burnout Inventory: An analysis of data from large scale cross-sectional surveys of nurses from eight countries. *International Journal of Nursing Studies, 46*(7), 894-902. doi:10.1016/j.ijnurstu.2009.03.004

Poghosyan, L., Clarke, S. P., Finlayson, M., & Aiken, L. H. (2010). Nurse burnout and quality of care: Cross-national investigation in six countries. *Research in Nursing and Health, 33*(4), 288-298. doi:10.1002/nur.20383

Price, J. L., & Mueller, C. W. (1981). A causal model of turnover for nurses. *Academy of Management Journal, 24*(3), 543-565. doi:10.2307/255574

Ratner, P. A., & Sawatzky, R. (2009). Health status, preventive behaviour and risk factors among female nurses.*Health Reports, 20*(3), 53-61.

Ross, J., Jones, J., Callaghan, P., Earles, S., & Ashman, N. (2009). A survey of stress, job satisfaction and burnout among haemodialysis staff. *Journal of Renal Care 35*(3), 127-133.

Schutte, N., Toppinen, S., Kalimo, R., &Schaufeli, W. (2000). The factorial validity of the Maslach Burnout Inventory-General Survey (MBI-GS) across occupational groups and nations. *Journal of Occupational & Organizational Psychology, 73*(1), 53-66.

Shamian, J., & El-Jardali, F., (2007). Healthy workplaces for health workers in Canada: Knowledge transfer and uptake in policy and practice. *HealthcarePapers, 7*(Sp), 6-25. doi:10.12927/hcpap.2007.18668

Shields, M., & Wilkins, K. (2006). *Findings from the 2005 National Survey of the Work and Health of Nurses.* Ottawa, ON: Health Canada and Canadian Institute for Health Information.

Simon, M., Müller, B., &Hasselhorn, H. M. (2010). Leaving the organization or the profession - a multilevel analysis of nurses' intentions. *Journal of Advanced Nursing, 66*(3), 616-626. doi:10.1111/j.1365-2648.2009.05204.x

Utriainen, K. &Kyngäs, S.H, (2009). Hospital nurses' job satisfaction: A literature review.*Journal of Nursing Management, 17*, 1002–1010.

Van Bogaert, P., Clarke, S., Roelant, Meulmans, H., & Van de Heyning, P. (2010). Impacts of unit-level nurse practice environment and burnout on nurse-reported outcomes: a multilevel modelling approach. *Journal of Clinical Nursing, 19*, 1664-1974. doi: 10.1111/j.1365-2702.2009.03128.x

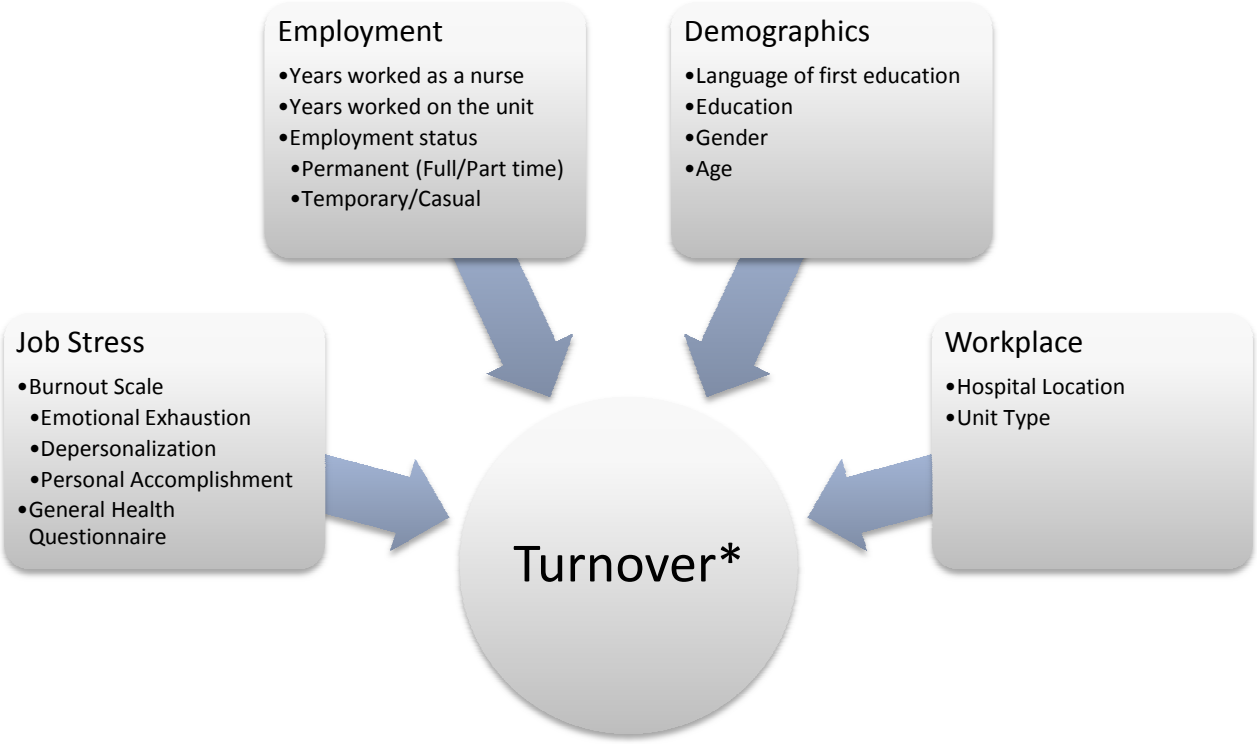
WengBoey, K. (1999). Distressed and stress resistant nurses. *Issues in Mental Health Nursing 19*, 33-54

Wolff, A. (2009). *Do relational differences in demographics and work values result in conflict and burnout in the nursing workforce?* (unpublished Doctoral dissertation). University of British Columbia, Canada.

Zeytinoglu, I. U., Denton, M., Davies, S., Baumann, A., Blythe, J., & Boos, L. (2006). Retaining nurses in their employing hospitals and in the profession: Effects of job preference, unpaid overtime, importance of earnings and stress. *Health Policy, 79*(1), 57-72.

Zurmehly, J., Martin, P.A., & Fitzpatrick, J.J. (2009). Registered nurse empowerment and intent to leave current position and/or profession. *Journal of Nursing Management 17,* 383-391.

Appendix A: Model of the Relationship Between Turnover, Job Stress and Other Factors



*Likelihood of leaving profession and their position and Intent to leave profession and their position

Appendix B: Variables in the Model

Table 1

Variables in the Model

Domain	Variable Value	Rationale
Independent variables		
Job Stress		
Burnout Scale (MBI-HSS)		The MBI is generally referred to as the 'golden standard' to assess burnout in human services (Schutte, Toppinen, &Kalimo, 2000
Emotional Exhaustion	0-53	
Depersonalization	0-26	
Personal Accomplishment	0-48	
General Health Score (GHQ-12)	0-36	The GHQ-12 is used to detect "the prevalence of minor psychiatric disorder in samples" (Kalliath, O'Driscoll, &Brough, 2004, p. 14). The GHQ-12 is the short version, which has been tested using multiple factor models and analyses.
Covariates		
Employment		
Age		There may be a connection between age differences in the turnover rates of nurses (Lavoie-Tremblay et al, 2010) and in the degree of burnout experienced by nurses.
<30		
30-40		
40-50		
>50	Referent variable	
Years worked as a nurse		
<3 years		
3-11 years		
11-25 years		
>25 years	Referent variable	
Employment Status		
Permanent	0	
Temp/Casual	1	
Demographics		
Ethnicity (language)		
English	0	
Non-English	1	
Education		
Canada	0	
Non-Canada	1	
Highest level of Education		
RN Diploma	0	
Bachelors Degree or higher	1	
No response	99	

Domain	Variable Value	Rationale
Gender	0	
Male	1	
Female		
Workplace Variables		
Unit Type		The workplace variables are integral because
Med/Surg	0	it will aid in the comparability of this study
Non Meg/Surg	1	to other sites in unit type and hospital resources. Zurmehly et al (2009) show that the workplace setting is important in nurses intent to leave outcomes. Including workplace factors assists with the overall analysis by not assuming similarities between work sites and unit types.
Dependent variables		
Intent to leave		This has great implications for recruitment
Unit	1-7	and retention of nurses in health care settings
Nursing	1-7	(Cavanaugh, 1990). It is used to measure
Likelihood of leaving		and describe the intention or likelihood of an
Unit	1-5	individual to leave their place of work, or
Nursing	1-5	their current profession (Fitzpatricket al, 2010).

Appendix C: Intent and Likelihood to Leave the Position or Profession

Section I

This section is divided into two parts.

For each question please **CIRCLE** the number that best represents **your intentions**.

Important: If you **work in more than one nursing unit** at this hospital, **answer for the unit where you received the survey**. **Note:** The unit name is listed on the address label of your study information package delivered to your unit.

Part 1: The following questions about **your employment and career intentions in nursing**.

	1 Never	2 A few times	3 About once a month	4 Two or three times a month	5 About once a week	6 More than once a week	7 Every day
1. How often **in the past year** have you thought about **changing your current position** on this unit **to work on another nursing unit in this hospital**?	1	2	3	4	5	6	7
2. How often **in the past year** have you thought about **quitting your current nursing job at this hospital**?	1	2	3	4	5	6	7
3. How often **in the past year** have you thought about **permanently leaving the nursing profession**?	1	2	3	4	5	6	7

Part 2: The following questions ask about the **likelihood of you looking for another job**.

	1 Not likely at all	2 Slightly possible	3 Quite possible	4 Almost certain
1. How likely is it that you will **actively** look for another nursing job **in this hospital in the next year**?	1	2	3	4
2. How likely is it that you will **actively** look for another nursing job **in another hospital in the next year**?	1	2	3	4
3. How likely is it that you will **actively** look for **employment outside the nursing profession in the next year**?	1	2	3	4

Appendix D: GHQ-12 Questionnaire

Section D

We would like to know if **YOU** have had any medical concerns, and how **your health** has been, in general, **during the past few weeks**.

Please answer **ALL** the following questions by **CIRCLING** the number which you think most nearly applies to **you**.

Remember that we want to know about **present and recent concerns**, not those you had in the past. It is important that you to answer **ALL** of the questions.

HAVE YOU RECENTLY:				
1. Concentrate	Better than usual 1	Same as usual 2	Less than usual 3	Much less than usual 4
2. Lost sleep	Not at all 1	No more than usual 2	Rather more than usual 3	Much more than usual 4
3. Useful	More so than usual 1	Same as Usual 2	Less useful than usual 3	Much less useful 4
4. Capable of decisions	More so than usual 1	Same as usual 2	Less so than usual 3	Much less capable 4
5. Strain	Not at all 1	No more than usual 2	Rather more than usual 3	Much more than usual 4
6. Overcome difficulties	Not at all 1	No more than usual 2	Rather more than usual 3	Much more than usual 4
7. Enjoy activities	More so than usual 1	Same as usual 2	Less so than usual 3	Much less than usual 4
8. Face problems	More so than usual 1	Same as usual 2	Less able than usual 3	Much less Able 4
9. Unhappy and depressed	Not at all 1	No more than usual 2	Rather more than usual 3	Much more than usual 4
10. Losing self-confidence	Not at all 1	No more than usual 2	Rather more than usual 3	Much more than usual 4
11. Worthless	Not at all 1	No more than usual 2	Rather more than usual 3	Much more than usual 4
12. Happy	More so than usual 1	About same as usual 2	Less so than usual 3	Much less than usual 4

Appendix E: Maslach Burnout Inventory

Study Constructs	Observed indicator (Questionnaire subscale and items)
Emotional Exhaustion	Drained
	Used up
	Fatigued
	Work strain
	Burned out
	Frustrated
	Work hard
	People stressful
	End of rope
Depersonalization	Impersonal
	Callous
	Hardening
	Not care
	Patients blamed
Personal Accomplishment	Understand Patients
	Deal with problems
	Positive influence
	Energetic
	Create atmosphere
	Exhilarated
	Accomplished
	Deal calmly

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Appendix F – Trinity Western University Ethics Approval

TRINITY WESTERN UNIVERSITY
Research Ethics Board (REB)
CERTIFICATE OF APPROVAL

Principal Investigator: Carolyn Klassen

Department: School of Nursing

Supervisor (if student research): Richard Sawatzky

Co-Investigators:

Title: Job stress and turnover among registered nurses in acute care: A regression analysis

REB File No.: 12ED02

Start Date: April 3, 2012

End Date: July 1, 2013

Approval Date: April 3, 2012

Certification

This is to certify that Trinity Western University Research Ethics Board (REB) has examined the research proposal and concludes that, in all respects, the proposed research meets appropriate standards of ethics as outlined by the "Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans".

Sue Funk, B.A. for Phillip Wiebe, Ph.D.
REB Coordinator REB Chair

This Certificate of Approval is valid for one year and may be renewed.
The REB must be notified of *all* changes in protocol, procedures or consent forms.
A final project form must be submitted upon completion.

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