

THE DETERMINANTS OF TURNOVER INTENTION IN MAINE NURSES: A MULTI-
TEMPORAL ASSESSMENT

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THE DETERMINANTS OF TURNOVER INTENTION IN MAINE NURSES: A MULTI-TEMPORAL ASSESSMENT

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Abstract

In Maine, nurses are a crucial element of every healthcare system, but employers are struggling to reduce the turnover intention of their nurses. Like many other jobs, there are a wide variety of determinants that impact nurses' decision to leave their positions at their organizations. This study examines the most significant reasons that nurses would choose to leave their positions and the timeframe in which they would choose to do so. Through a self-designed study, data regarding a nurse's self-selected reasons to leave their roles and their timelines for such a decision was provided by the National Sample Survey of Registered Nurses. According to the data, certain reasons to leave are noted by Maine nurses more often than others, but over different timelines, there are few reasons to leave that impact the turnover intention of Maine nurses to a significant level.

KEYWORDS: (Nursing, Turnover Intention, Healthcare, Maine)

JEL CODES: (J32, J44, I12)

ON MY HONOR, I HAVE NEITHER GIVEN NOR RECEIVED
UNAUTHORIZED AID ON THIS THESIS

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Signature

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1. Introduction

At some point in the life of the average American, there will very likely come a time when the services of a nurse are required. Nurses are critical staff in hospitals and other medical settings, who shoulder many of the day-to-day tasks required of a hospital. Nursing teams in hospitals must be well-staffed. If they are not, the systems in place that keep a hospital functioning can break down and lead to worse patient health outcomes. It is also very important to retain the nurses that are working at a given moment. Nursing turnover rates are generally higher than other professions and not only harm staff morale and cohesion but also cost hospitals large sums of money all of which negatively affect the service and care a healthcare system can provide. Factors contributing to turnover rates include compensation, job satisfaction, and adequate staffing levels.

Across the country, nurses are the backbone of healthcare, offering physical and emotional aid during a patient's visit to a medical center. Nursing requires a realistic mindset, strong stress management skills, and high compassion for patients. However, nurses are human too, and negative experiences in the hospital can accumulate and lead to nurse burnout (Edward-Elmhurst Health, 2022). Nurses have a very high turnover rate with nurses with under one year of experience witnessing the highest rates of turnover in the profession (An et al, 2022). When nurse turnover rates are high, hospital systems devote precious resources to finding and hiring new nurses, which creates unnecessary strain on the system. Apart from the impacts on the finances of a healthcare system nurse turnover can have, patients will also suffer from a lack of nurses in the hospital. Without an adequate nursing staff

patients may experience worsening pressure sores or the development of new pressure sores, an increase in 30-day hospitalization rates, and an increased rate of medical errors. In addition, a lack of nurses may increase the chance a hospital will receive infection control citations (An et al, 2022). Financially, the cost of a nurse's turnover in the United States averages around 40,000 dollars and a loss of 5 million dollars on average for a hospital (An et al, 2022). Since many hospitals belong to healthcare systems, a loss of 5 million dollars per hospital can place significant strain on the financial resources of a healthcare system. To understand and decrease the level of turnover in the nursing profession, it is crucial to understand the factors that impact a nurse's turnover intention.

Turnover intention is a psychological process that is influenced by a complicated set of personal or system-wide factors (De Vries et al, 2023). Turnover intention is considered a better metric on which to focus, than actual turnover (De Vries et al, 2023) because actual turnover is a symptom of the underlying issue of turnover intention. To understand the turnover intention of a group of employees, it is important to understand their job satisfaction. People who are unhappy with their work are more likely to find an alternative job that increases their happiness. Some of other factors that impact a nurse's turnover intention include personal issues, such as personality and stress, along with job-related issues like empowerment, opportunities for career progression, and compensation (Campbell et al., 2020). Additionally, the character of an organization plays a role in a nurse's turnover intention as management and a stressful workplace culture can impact nurses (Campbell et al., 2020). A high level of stress is associated with some nursing careers like

emergency room nursing, hospice nursing, and other departments in which a nurse is exposed to death or other emotionally difficult situations. This can cause considerable stress as nurses who are exposed to these conditions can have adverse mental reactions. A high workload is also associated with lower job satisfaction. This can be exacerbated by the national nursing shortage causing working nurses to take on an even higher workload (An et al, 2022). Being compensated fairly is also important for nurses as nurses engage in very important work which their salaries should reflect. Compensation is a key factor in whether a nurse feels satisfied with their job (Mills, 1989). Studies show that a strong salary retains nurses, whereas an unequal effort-reward imbalance was likely to lead to more turnover intention. These factors are closely connected and low job satisfaction among nurses can be due to a combination of these reasons (Mills, 1989).

Considering the importance of nurses in medical settings, this research aims to examine how the different reasons listed by the National Sample Survey of Registered Nurses (NSSRN) impact the probability that a nurse feels burned out in their job. This research is an investigation into the relationships between these factors and burnout, which can offer insights into the turnover intention of hospital nurses. This research uses data regarding the reasons Maine nurses would consider leaving their job, and how those reasons impact the likelihood that the same nurses feel burnt out. By examining the relationships between these factors, potential interventions can be explored to improve job satisfaction and the retention of nurses in Maine.

2. Literature Review

While this study focuses on burnout, the ultimate conclusion in which this paper aims to contribute to, is the problem of turnover in the nursing profession. Nurse retention is a complex issue. There are many factors that impact a nurse's intention to turnover. Some factors, such as compensation, can be easily measured in dollars and other factors, such as job satisfaction, are deeply personal and differ from nurse to nurse. Understanding the factors that create a positive workplace for nurses is essential in ensuring an adequately staffed hospital. Existing research suggests that a nurse's turnover intention is impacted by many different factors, but is heavily related to burnout (Özkan, 2022). These issues can be categorized as relating to job satisfaction, personal problems with their employment, and organizational issues (An et al., 2022; Campbell et al., 2020; De Vries et al., 2023; Hart et al., 2018; Kirschling et al., 2008). This leaves the door open for future studies that explore the effects each factor can have on one another, exacerbating stressors or alleviating them.

Determinants of Nurse Turnover

At first glance, job turnover might not seem all that complicated. If an employee is unhappy with their job, they are likely to find work elsewhere, therefore leaving a vacancy in their previous role. However, the personal reasons that lead to an employee deciding to leave their job can be difficult to understand. This phenomenon is commonly known as turnover intention, which refers to an employee's complex psychological process of making the decision to vacate their role (An et al., 2022). This leaves employers with an important question. What are the reasons that one of their employees would

choose to leave their job, and how can the employer eliminate these reasons? To address this question, identifying the factors that impact an employee's turnover intention is crucial.

Nursing as a profession comes with a slew of emotional, physical, and intellectual challenges, some of which do not identify themselves until much later in a nursing career. Many of these factors directly contribute to a nurse's job satisfaction. Similarly, stress is consistently flagged as one of the most important factors that contribute to low job satisfaction and nurse turnover (An et al, 2022). A National Institute of Health study shows that ethical stress can also contribute to low job satisfaction (Ulrich et al, 2007). Nursing may be inherently strife with ethical dilemmas. Nurses exist within a healthcare framework that can be bureaucratic and contradictory (Ulrich et al, 2007). There may be situations where a nurse is providing care to a patient but cannot carry out the morally ethical action due to rules and regulations that they must follow (Ulrich et al, 2007). Some examples of morally grey circumstances that a nurse might find themselves in could be situations where they and other medical professionals are deciding if or when a patient is medically deceased, the limits of how much medical intervention a patient needs, patient quality of life concerns and other difficult decisions that must be made on a patient's behalf (Ulrich et al, 2007). These situations can contribute significantly to the stress a nurse feels when working and can lead to a feeling of job dissatisfaction (Ulrich et al, 2007). According to the National Sample Survey of Registered Nurses (NSSRN), one of the most common reasons a nurse would leave their current job is due to "Burnout." Burnout in the nursing profession is one of the most significant predictors of turnover intention

(Özkan, 2022). Burnout in nursing can be due to prolonged levels of stress in the workplace or hospital and may lead to a detached feeling from oneself. While burnout may not be closely related to the work-life balance of a nurse, it can affect every aspect of life (Özkan, 2022) leading to a decline in the quality of life for someone employed as a nurse. Burnout has also been noted to worsen performance and the well-being of employees, which is a risk factor for worse health outcomes for patients (Özkan, 2022, Hyeonmi et al., 2022). Not only does burnout have negative consequences for nurses, but hospitals and healthcare systems are significantly impacted by unengaged and poor-performing employees (Özkan, 2022). Turnover leads to high amounts of spending from hospitals and healthcare systems who wish to maintain their staffing levels (De Vries et al, 2023). Understanding the factors that impact burnout in nurses can be invaluable knowledge for healthcare and nursing leaders to consider when rethinking nurse retention strategies.

In addition to the personal stressors a nurse faces, they also must deal with high workload stress (Woodward and Willgerodt, 2022). As the population ages and more chronic illnesses are diagnosed, nurses must compensate by working more and harder to provide care to an increasing number of new patients. Fatigue among nurses is associated with poorer health outcomes for patients and a less safe work environment for the nurses at the hospital (Hyeonmi et al., 2022). High workloads for nurses can have significant impacts on the efficiency and quality of nursing care (Hyeonmi et al., 2022). This can have far-reaching impacts on nurses and their longevity at their organizations. High workload places nurses at a higher risk for psychological distress, musculoskeletal disorders, lower degrees of cognitive

functioning, more sick days, and turnover (Hyeonmi et al, 2022). All these conditions brought on or exacerbated by a high amount of workload can result in medical errors and turnover, both of which have significant financial impacts for healthcare organizations (Hyeonmi et al, 2022).

Organization problems that healthcare systems face can impact a nurse's intentions to leave their role (Campbell, 2021). Even as the United States shifts its care model from intervention to preventative care to mitigate the high number of projected novel patients, nearly 50% of the nation's nurses have considered leaving their jobs at some point in their careers (Watts et al, 2021). As early as 2001, lawmakers identified a healthcare skilled worker shortage in Maine, and initiatives were undertaken to attract and maintain nurses and other healthcare workers (Kirschling et al, 2008). Maine is one of the best states to receive healthcare with higher numbers of nurses and doctors in comparison to its relatively low population, however, national trends like nursing shortages impacted Maine as well (Kirschling et al, 2008). Several studies show that these nursing shortages are particularly difficult for a healthcare system due to the multiple problems a shortage of nurses can cause. First, a nursing shortage causes a hospital to spend unnecessary money recruiting new nurses (De Vries et al., 2023), resulting in millions lost for the hospital and even more losses system wide (An et al., 2022; De Vries et al. 2023). Second, a nursing shortage contributes to a lower quality of care and medical errors that could be avoided by an adequately staffed nursing crew, along with a breakdown of care continuity and an increased number of unsatisfied patients (De Vries et al, 2023). Finally, nursing shortages apply extra pressure on nurses who are working and contribute to a higher workload

for each nurse lowering team morale (De Vries et al, 2023). These problems exacerbate each other and can quickly lead to job burnout and turnover intention if left unchecked (De Vries et al, 2023). For a team of nurses to function at its best within a medical setting, it is crucial that responsibilities are spread among an appropriate number of nurses to avoid financial losses, poor medical service quality, and low morale – all of which impact turnover intention.

Offering a nurse, a competitive salary is an important part of increasing their intentions to stay and improving job satisfaction (Government Accountability Access Office [GAO], 2008). In areas where the labor market for nursing is competitive, it is important to offer competitive salaries to attract and ultimately retain nursing in a healthcare organization (GAO, 2008). Not only does inadequate compensation lead to lower likelihood of job satisfaction from nurses, but nurse turnover can cost employers more than the normal salaries of nurses (Campbell et al., 2021). Nursing wages remain steady within geographical regions (Bradley, 2021). These wages are calculated by using a nurse's years-of-experience, and specialty (Bradley, 2021). In narrow-band pay structures, nurses can expect to reach the top of their pay range quickly and may see the need to change roles in order to be adequately compensated for their experience and work (Bradley, 2021). In wide-band pay structures, a nurse may be adequately compensated for their experience level, but this pay structure can lead to subjective decisions about compensation, and can be difficult to compare the compensation of nurses (Bradley, 2021). In addition to salaries, incentives can be used as compensation such as sign-on bonuses, and student loan payments. These

incentives must be carefully evaluated to meet organizational goals (Bradley, 2021). While performance-based bonuses are widely available to corporate and executive roles, nurses begin to see these bonuses if their care is exceptional and leads to higher quality metrics for hospitals (Bradley, 2021). To complicate this issue, healthcare employers have opted lately to use travel nurses to minimize the impacts of staffing shortages on the health outcomes of their patients (Faller et al. 2018). These external staff can come at a high premium for healthcare organizations so balancing these costs with the risks of employing nurses who are not loyal to the organization is crucial (Bradley, 2021). While these traveling nurses can be a monetary challenge for healthcare organizations, this model proves to be a good recruitment channel for hospitals and other healthcare offices. While travel nurses have expensive salaries, they may save healthcare organizations money due to the overlooked costs that full-time nurses demand (Faller et al., 2018). These overlooked costs include benefits, insurance plans, investment matching, and other costs that are not reflected in the cash value of a nurse's salary (Faller et al., 2018). However, travel nurses are not full-time employees and while they can temporarily help healthcare organizations meet staffing needs, they do not solve the underlying issue of the unmet demand for nurses in healthcare offices.

3. Theory and Methodology

Theory

Retaining nurses is important for any healthcare system seeking to provide quality care. Because of the personal nature of the decision to leave a job, there are many reasons a nurse would choose to turnover. However, there

are several different variables that a nurse may consider when choosing to leave their place of employment and find work elsewhere. Since management cannot do anything about an employee turning over, they can manage the variables that impact an employee's desire to stay at the organization. Ensuring that nurses wish to continue working for their healthcare systems is crucial for hospitals and other medical settings. Failure to retain these nurses' results in lower-quality healthcare and worse health outcomes. This theory section explores the impact of personal, organizational, and job-related stressors on the turnover intention of Maine nurses.

The variable "Turnover Intention Timeline" is the desire of an employee to leave their job at their current employer within a certain amount of time. The nurses surveyed chose between the options to note that they are planning on leaving their job within one year, within one year to three years, and in over three years. This metric is used to measure employees' willingness to leave their job voluntarily and is crucial in preventing actual turnover (An et al, 2022, Wang et al, 2023). Since turnover intention is the precursor to turnover, addressing turnover intention can result in longer-lasting retention for an organization and its employees (An et al, 2022). Turnover intention is influenced by many different factors such as job satisfaction, adequate levels of compensation, organizational commitment, workload, career growth opportunities, and work conditions (An et al 2022, Wang et al, 2023, Woodward & Willgerodt, 2022). Understanding turnover intention is important for companies and organizations to develop strategies to retain their talent. In the case of hospitals and healthcare systems, failure to understand why their nurses would willingly leave their positions is extremely important

due to the decreased quality of care they would provide in a nurse deficit, in addition to suffering significant financial losses (An et al, 2022).

It is widely accepted that higher levels of job satisfaction led to a higher degree of organizational commitment. Interestingly, job satisfaction can be an amalgamation of all the different variables explored in this regression. For example, enjoying a high level of relative compensation can increase job satisfaction (Lum et al, 1998). Job satisfaction can be measured without considering the factors that influence it and may be understood by asking employees directly whether they are happy with their work (Lum et al, 1998). Job satisfaction is an important variable because if employees are not satisfied with their work, it can be indicative of a larger systemic issue that an organization must address. Like turnover intention, job satisfaction can be reduced to a combination of factors that influence overall satisfaction (Lum et al, 1998). It is hypothesized that a higher degree of job satisfaction should result in a lower degree of burnout in the population of nurses in Maine.

Compensation, measured in dollars and benefits, is a significant part of employee retention. Compensation can come in several forms such as money and benefits. In addition to a competitive salary, nurses identified benefits at other organizations as a reason they would consider leaving their current place of employment (Woodward & Willgerodt, 2022). The notion that increasing compensation impacts employee retention is not a novel idea. Unfortunately, financial pressures and supplemental staff rates have been impacting the level of nurse compensation in hospitals (Mills, 1989). Due to the vast number of professionals and staff employed by healthcare systems, nurses can be competing for internal company resources which can reduce their

compensation, especially when hospitals try and cut costs to pay the salaries of other employees at the expense of nurses (Mills, 1989). Ensuring nurses receive appropriate compensation is a necessary aspect of retention. It is hypothesized that a high degree of dissatisfaction with compensation rates will increase the chances that a nurse experiences burnout in Maine.

Studies show that organizational commitment is one of the best predictors in assessing the turnover intention of a group of employees (Lum et al, 1998). Organizational commitment is the level of loyalty an employee feels towards their organization due to personal factors like a connection to their employer, or impersonal factors like the desire to maintain their compensation level (Wang et al, 2023). This is an important metric because employers can create a work environment that fosters organizational commitment.

Organizational commitment is often regarded as a precursor to turnover or retention depending on whether a group of employees is committed to the organization or not (Wang et al, 2023). An employee's organizational commitment may also have a mediating effect on other negative factors that contribute to turnover intention (Wang et al, 2023). If employees feel committed to their organization, they may feel more inclined to tolerate unfavorable work conditions, burnout, job dissatisfaction, and other factors that have a negative impact on turnover intention (Wang et al, 2023). In the same vein, employees that do not feel committed to their organization may feel more inclined to leave their jobs earlier when unfavorable conditions exist in the workplace (Wang et al, 2023). Measuring the level of organizational commitment is crucial for hospitals and healthcare systems to gauge the turnover intention of their nurses. It is hypothesized that organizational

reasons to leave the job with a low level of responses should not impact burnout to a high degree in the nurse population of Maine.

3.1. Methodology

This data comes from the 2018 National Sample Survey of Nurses (NSSRN). The NSSRN is a survey organized by a United States government agency, the Health Resources and Services Administration in collaboration with the US Census Bureau. It collects longitudinal data regarding demographics, education/licenses, employment, work environment, earnings, and hours of the United States' nursing workforce. The data is comprised of 102,690 registered nurses (RN) from a population of 4.6 million nurses country-wide. The licensure records are provided by individual state records and the National Council of the State Boards of Nursing. The collection of data lasted for 24 weeks with online and paper copies of the survey available. Of the 102,690 RNs within the United States, 50,273 of those RNs completed the survey. The average age of an RN who surveyed is 50 years old. 63.9% of RNs held college degrees and 19.3% held a master's or doctorate degree. Telehealth was available to 32.9% of the registered nurses' workplaces. The average yearly income of full-time RNs was \$73,929. Of the registered nurses that completed the survey 404 of them are from Maine. Since this was an optional survey, the responses may reflect voluntary-response bias which may potentially skew the results of the NSSRN.

In the NSSRN, there were several questions that are related to job satisfaction and turnover intention along with questions regarding why a nurse prefers to continue to be employed by their current employer and why a nurse will choose to leave their current job in the future. There are different

questions because the NSSRN surveyed registered nurses who are currently employed in a nursing role and those who are not currently employed in a nursing role. For clarity, questions marked with a ‘(C)’ for ‘current,’ are referring to current registered nurses, and questions marked with a ‘(F)’ for ‘former’ are referring to former registered nurses. These questions and the possible responses to them are listed below.

The data show that some variables impact the turnover intention of the Maine nursing workforce more than others. The nurses had the option to skip the question if the response did not pertain to them, or to mark “YES,” if the response is a reason that they would consider leaving their position, which is considered a “NO” response in this study. The median “YES” response rate is 55 of 404 nurses marking that one category as a reason to leave their job. The “YES” response rate varies with a standard deviation of 57 responses of “YES” in either direction. Every category in the survey was marked by at least 7 of the 404 nurses as a reason to leave their jobs.

Table 1: Answers and Variable Codes to NSSRN Survey Question:
“REASONS TO LEAVE”

RE_LVE (Reasons to leave) possible responses
RE_LVE_PAY: Better pay/benefits
RE_LVE_BRNOUT: Burnout
RE_LVE_CARADV: Career advancement/promotion
RE_LVE_CARCHG: Career change
RE_LVE_CHDSCL: Change in child’s school

RE_LVE_DISAB: Disability/illness
RE_LVE_FAM: Family caregiving
RE_LVE_INAB: Inability to practice to the full extent of license
RE_LVE_INSTAFF: Inadequate staffing
RE_LVE_INTERP: Interpersonal differences with colleagues or supervisors
RE_LVE_ADVOPP: Lack of advancement opportunities
RE_LVE_COLLAB: Lack of collaborative communication between healthcare professionals
RE_LVE_GDMNG: Lack of good management or leadership
RE_LVE_COMMTE: Length of commute
RE_LVE_PATPOP: Patient population
RE_LVE_PHYSIC: Physical demands of job
RE_LVE_GEO: Relocation to different geographic area
RE_LVE_RETIRE: Retirement
RE_LVE_SCHED: Scheduling/inconvenient hours/too many hours
RE_LVE_EDUC: School/educational program
RE_LVE_SIGNON: Sign-on bonus offered
RE_LVE_SPEMP: Spouse's employment opportunities
RE_LVE_STRSSWE: Stressful work environment
RE_LVE_OTH: Other

Source: National Sample Survey of Registered Nurses

While more metrics are important to the overall healthcare landscape, it is important to analyse these responses in a more granular way so that conclusions can be drawn about a nurse’s turnover intention specifically. In addition to the “REASONS TO LEAVE” category, the survey also recorded responses for “REASONS FOR LEAVING,” “REASONS FOR EMPLOYMENT CHANGE,” “REASONS FOR NOT WORKING,” and “REASON TO REMAIN.” For the purposes of this study, it is only necessary to consider the responses under the “REASON TO LEAVE,” category due to the insights this category can reveal about turnover intention. The data points for these variables are binary (0 = No/1 = Yes). Through this data, it is possible to weigh the significance of each reason to remain or leave in its respective category by collecting the instances of “YES” or “NO” as a response to each question. By learning which of the reasons a nurse would remain or stay at their job and the likelihood that a nurse is experiencing turnover intention, outlined by the NSSRN, it is possible to learn the areas that Maine healthcare systems can focus on or improve so that registered nurses have more of an incentive to continue working in their current positions.

To understand the turnover intention of the nurses, a variable named RE_WHENLV is included in the dataset. This variable asks the nurses when they plan on leaving their positions. The responses to this survey question are as follows:

Table 2: When Do Working Nurses Plan to Leave Their Positions

RE_WHENLV (Plan to Leave This Position) possible responses:
1. Less than 1 year from now

2. 1 – 3 years from now
3. More than 3 years from now
4. Not sure

Source: National Sample Survey of Registered Nurses

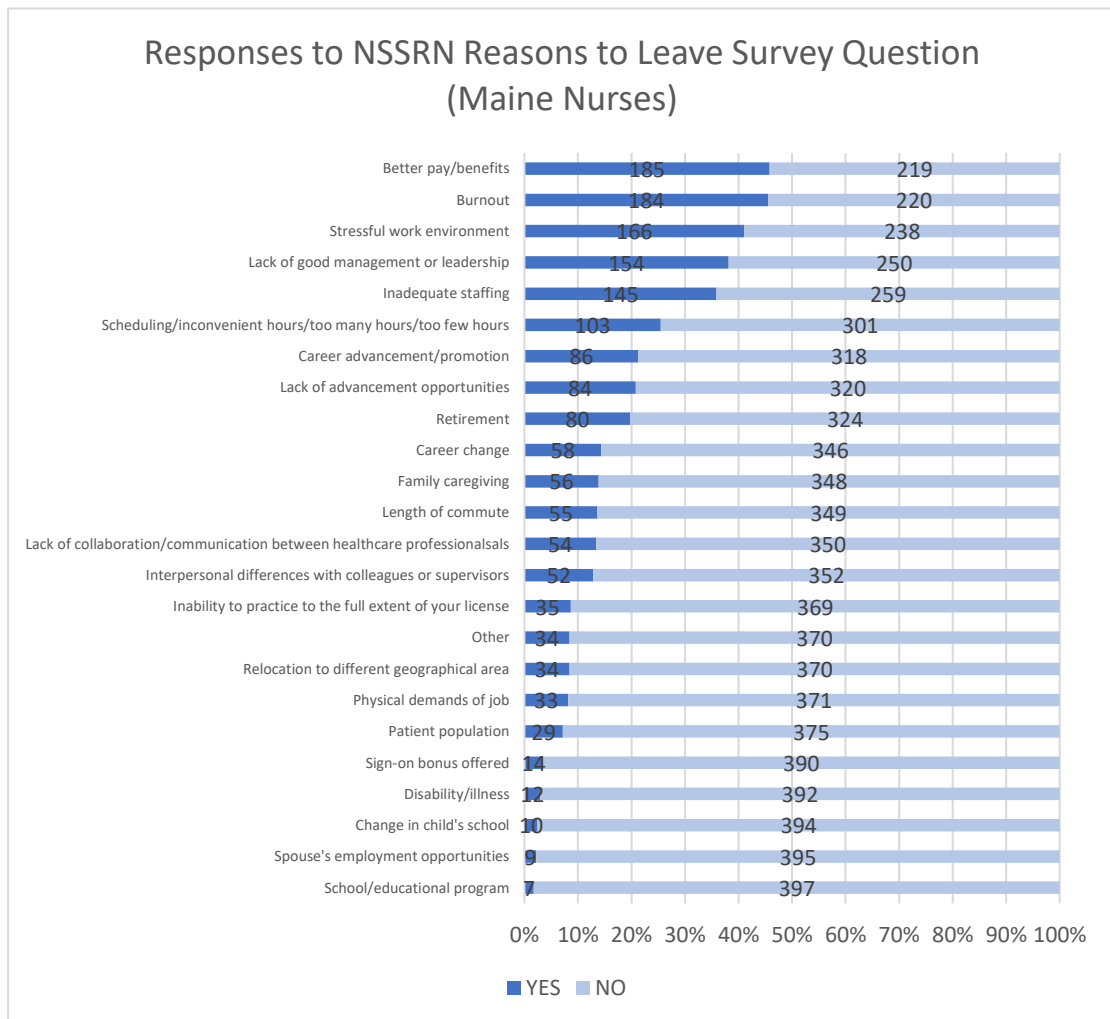
To understand how the “REASONS TO LEAVE,” variable impacts the timeline a nurse is planning on leaving their job, dummy variables were created from the categorical variable “RE_WHENLV.” 50 (12.4%) nurses plan on leaving their jobs within a year, 121 (30.0%) nurses plan on leaving their jobs within a year to three years, 68 (16.8%) nurses plan on leaving their jobs in more than three years. 165 (40.4%) nurses are unsure when they will leave their jobs. For this study, a regression will only be run on the categories in which a nurse marked that they certainly plan on leaving their position. Due to constraints in the data set, the data may not fully represent the sentiments of the nurses who fell into the “NOT SURE” category, in the variable which recorded the timeframes of Maine nurse’s intentions to leave their jobs. For the purposes of this study, the response “NOT SURE” was treated as a nurse deciding to stay and be employed at their organization. This was due to the definitive nature of the other responses which signified with certainty that a nurse was intent on leaving their job. To run a regression on these variables it is important to consider any desire to leave as turnover intention, and to treat the “NOT SURE,” category as a nurse choosing to stay at their current job.

The NSSRN was an optional survey which means that only data recorded by those who wished to participate in the survey are recorded. For every survey question regarding the reasons a nurse would leave their job, only two possible answers can occur. Those are affirmative responses of “YES”, and

negative responses of “NO.” Since the relevant questions asked in the survey had binary answers, there was no room for any explanation of the answers. One possible area of concern is that the questions in the survey may fall into umbrella categories of determinants of nurse turnover intention. For example, “Burnout,” and “Stressful work environment,” could likely fall into the category of “Job satisfaction.” This could create discrepancies in the analysis should those who wish to study this data in broader terms disagree on what categories the survey questions could fit into, if the researcher chooses to categorize them. Using the literature to guide this process is necessary. While the survey questions could fall into separate categories of reasons a nurse would wish to leave or remain at their job, it may make more sense to group together similar questions to see if any larger themes are exposed after the data is analyzed.

4. Results and Analysis

Figure 1: Responses to NSSRN Survey – Reasons to Leave (%)

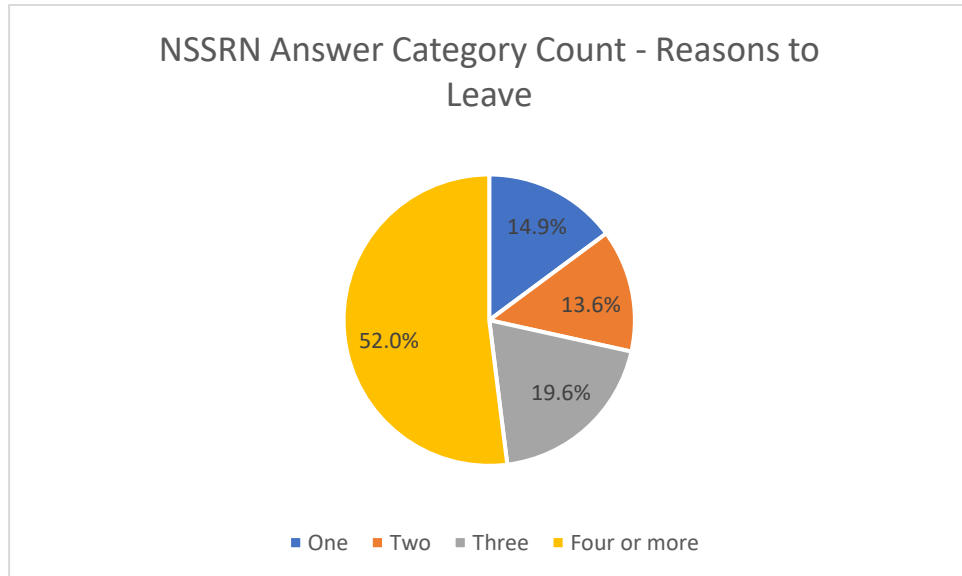


Source: National Sample Survey of Registered Nurses (2018)

From the data, it is clear there is a cluster of five reasons which have high “YES” response percentages, that nurses would leave their jobs. The data shows that registered nurses in Maine are more likely to experience turnover intention due to inadequate pay, burnout, a stressful work environment, lack of good management, and inadequate staffing. These questions are marked as being a reason to leave for over 30% of the surveys completed. The reason ranked highest to leave by the NSSRN for Maine nurses is “Better pay/benefits.” 185 (45.8%) of

the nurses surveyed noted that they would consider the opportunity for higher compensation or better benefits as a reason to leave their jobs. The second highest marked reason to leave is “Burnout.” 184 (45.5%) of nurses surveyed noted that burnout is a reason that would consider leaving their jobs. The third highest-marked reason to leave a job is a “stressful work environment” with 166 (41.1%) Maine nurses considering leaving their role due to this reason. The fourth highest-marked reason to leave is “Lack of good leadership or management” with 154 (38.1%) Maine nurses considering leaving their jobs due to this reason. The fifth highest marked reason a nurse would leave their job is due to “Inadequate staffing” with 145 (35.9%) Maine nurses who participated in the survey noting that they would leave their jobs for this reason. After those reasons, “Scheduling/inconvenient hours/too many hours/too few hours,” “Career advancement/promotion,” and “Lack of advancement opportunities” were marked as reasons to leave in 103 (25.5%), 86 (21.3%), and 84 (20.8%) respectively. All other responses have a “YES” (reason to leave) response rate of under 20%. In order for healthcare systems to address the staffing challenges they face regarding nurses; it is important for them to focus on the most significant reasons to leave identified in the NSSRN. In the regression analysis, only responses with over a 20% “YES” response rate is used.

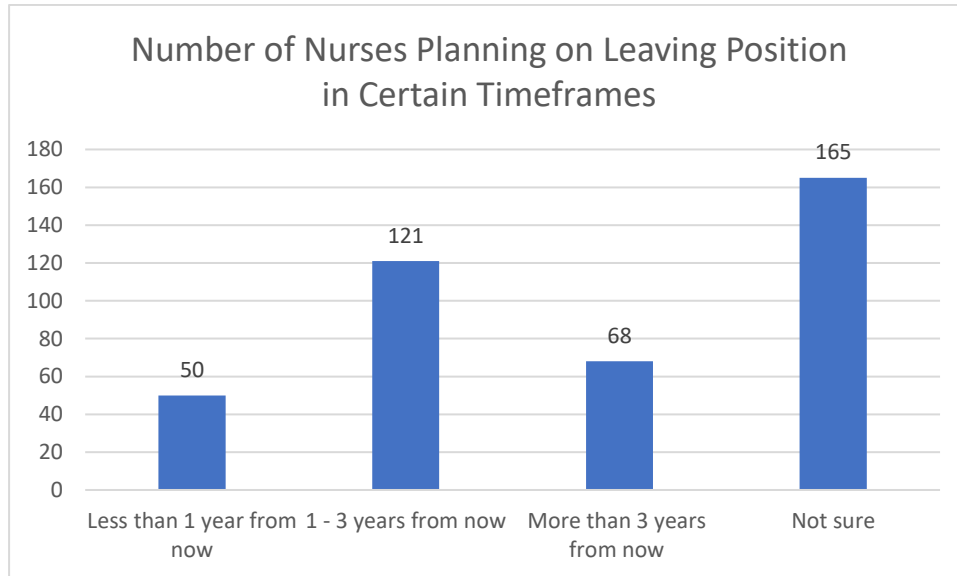
Figure 2: NSSRN Answer Category Count – Reasons to Leave



Source: National Sample Survey of Registered Nurses (2018)

Of the 404 Maine registered nurses who responded to the NSSRN, 210 (52.0%) identified 4 or more reasons to leave their jobs. 79 (19.6%) identified three reasons to leave their job, 55 (13.6%) identified two reasons to leave their job, and 69 (14.9%) identified 1 reason for leaving their job. Overwhelmingly, 85.1% of the registered nurses surveyed noted multiple reasons to leave their jobs. This shows that many nurses feel as though there are multiple personal or organizational reasons that are influencing a nurse's turnover intention. As previous studies show, these reasons to leave can often interact with each other and compound. In other words, when one part of the job is causing considerable turnover intention, other parts of the job are perceived as negative as well.

Figure 3: Number of Nurses Planning on Leaving Position in Certain Timeframes



Source: National Sample Survey of Registered Nurses (2018)

The survey also records answers on the timeframe in which a nurse plans on leaving their job. This metric is a direct measurement of turnover intention. 50 (12.4%) of nurses surveyed plan on turning over in less than 1 year. 121 (30.0%) nurses plan on turning over in 1- 3 years. 68 (16.8%) nurses plan on turning over in more than 3 years. For the purposes of this study, the 165 (40.8%) nurses who are unsure about leaving their jobs are not considered moving forward. This is due to the ambiguous nature of the response. It is unclear whether they wish to stay employed or leave their job. It is also unclear the timeframe in which they choose to do so. To understand the way that turnover intention is related to the variables in the “Reasons to Leave,” responses, the first three responses to this survey question will be used in a logistical regression analysis as dummy variables.

To investigate further, regression equations were built to examine the relationship between a nurse's reasons to leave and the timeline in which they choose to do so. These equations investigate the impact of the variables on multi-temporal turnover intentions through individual responses from the NSSRN. These regressions were built from the responses to the survey from Maine nurses.

Regression Equations:

1. $TurnoverIntentionTimeline_{WithinOneYear} = B0 + Compensation * B1 + Burnout * B2 + Stressful\ Work\ Environment * B3 + Poor\ Leadership * B4 + Inadequate\ Staffing * B5 + Scheduling\ Problems * B6 + Career\ Advancement * B7 + Lack\ of\ Advancement * B8 + \epsilon$
2. $TurnoverIntentionTimeline_{OneToThreeYears} = B0 + Compensation * B1 + Burnout * B2 + Stressful\ Work\ Environment * B3 + Poor\ Leadership * B4 + Inadequate\ Staffing * B5 + Scheduling\ Problems * B6 + Career\ Advancement * B7 + Lack\ of\ Advancement * B8 + \epsilon$
3. $TurnoverIntentionTimeline_{MoreThanThreeYears} = B0 + Compensation * B1 + Burnout * B2 + Stressful\ Work\ Environment * B3 + Poor\ Leadership * B4 + Inadequate\ Staffing * B5 + Scheduling\ Problems * B6 + Career\ Advancement * B7 + Lack\ of\ Advancement * B8 + \epsilon$

In this regression equation, the dependent variable is TurnoverIntentionTimeline which is the timeline a nurse expresses their intention to leave, and the independent variables are every reason to leave outlined by the survey. These variables all have binary answers. Every variable used in the regression is assessed by a simple YES/NO question in the survey. There are 3 regression equations due to the nature of the original turnover intention question from the NSSRN which results in a categorical variable with 4 categories. To mitigate this, 3 dummy variables are used. These dummy variables are binary variables coded for nurses leaving within 1 year, nurses leaving in 1 -3 years, and nurses leaving in more than 3 years. There is a fourth variable for nurses who are not sure when they are leaving their job. This variable is ignored for the purposes of this study due to the ambiguous nature of response.

Regression Results

To understand the impact of the reasons a nurse would leave their job, on the time frame in which they decided to do so, three logistic regressions were run. Logistic regression is used to separate the categorical variable RE_WHENLV, with dummy variables that are coded with a binary 0 or 1 depending on if the response to each time frame was a “YES” or “NO.” A 95% confidence interval was used to evaluate the statistical significance of each variable in the “Reasons to Leave” category. As per Table 4, the first regression used the first-time frame responses, the second regression used the second time frame responses, and the third regression used the third time frame responses.

Table 3 and 4: Regression 1: Explanatory Variables and Results

Source	SS	df	MS	Number of obs	=	404
Model	1.03146888	8	.12893361	F(8, 395)	=	1.19
Residual	42.7804123	395	.108304841	Prob > F	=	0.3033
				R-squared	=	0.0235
				Adj R-squared	=	0.0038
Total	43.8118812	403	.108714345	Root MSE	=	.3291

WHEN_LV_BINARY1	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
RE_LVE_PAY	.5663972	.3443473	1.64	0.100	-.1085111	1.241306
RE_LVE_BRNOUT	-.1059442	.3438169	-0.31	0.758	-.779813	.5679245
RE_LVE_STRSSWE	-.2747749	.3569338	-0.77	0.441	-.9743523	.4248025
RE_LVE_GDMNG	-.2500845	.3293619	-0.76	0.448	-.8956219	.395453
RE_LVE_INSTAFF	-.1881272	.3502053	-0.54	0.591	-.8745169	.4982626
RE_LVE_SCHED	.0856518	.359089	0.24	0.811	-.6181498	.7894533
RE_LVE_CARADV	.3460236	.4352457	0.80	0.427	-.5070424	1.19909
RE_LVE_ADVOPP	-.8647623	.3939393	-2.20	0.028	-1.636869	-.0926554
_cons	-.8160417	1.128812	-0.72	0.470	-3.028472	1.396389

Source: National Sample Survey of Registered Nurses

The f statistic suggests that the regression model is not statistically significant at the $f < 0.05$ level. The low r-squared value shows that the model does not explain a high proportion of the total variation in the dependent variable. However, just from an examination of the table, using the p-value provided by the logistical regression, for the first response time frame, “Less than 1 year from now,” only one variable is significant at the $P > 0.05$ level. That variable is RE_LVE_ADVOPP ($p = 0.028$), or the lack of advancement opportunities variable for a nurse. An increase of one in RE_LVE_ADVOPP is associated with a -.8647623 decrease in an affirmative YES (1) response when asked if a nurse plans on leaving their job in less than 1 year. This suggests that nurses are not considering a lack of career opportunities when deciding whether they want to leave their positions in less than 1 year. This

may be because, during the first year of a new nursing role, nurses are judging the other determinants of turnover like their levels of stress, relationship with their managers, and other personal criteria that would help them decide if their new role is a fit for them or not. When a new role is started, career progression can be something nurses begin to consider when their personal needs are met in their job.

Table 5 & 6: Regression 3: Explanatory Variables and Regression Results

Source	SS	df	MS	Number of obs	=	404
Model	3.07737474	8	.384671843	F(8, 395)	=	2.84
Residual	53.4770807	395	.135385014	Prob > F	=	0.0044
				R-squared	=	0.0544
				Adj R-squared	=	0.0353
Total	56.5544554	403	.140333636	Root MSE	=	.36795

WHEN_LV_BINARY3	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
RE_LVE_PAY	-.2477508	.2930574	-0.85	0.398	-.8221328	.3266312
RE_LVE_BRNOUT	.3003651	.3131279	0.96	0.337	-.3133542	.9140845
RE_LVE_STRSSWE	-.6988863	.3241692	-2.16	0.031	-1.334246	-.0635264
RE_LVE_GDMNG	.1081197	.3108766	0.35	0.728	-.5011873	.7174267
RE_LVE_INSTAFF	1.232115	.3669624	3.36	0.001	.5128823	1.951349
RE_LVE_SCHED	-.0355095	.3224809	-0.11	0.912	-.6675604	.5965415
RE_LVE_CARADV	.3641766	.4248075	0.86	0.391	-.4684309	1.196784
RE_LVE_ADVOPP	.8004492	.4551163	1.76	0.079	-.0915623	1.692461
_cons	-4.960345	1.263766	-3.93	0.000	-7.43728	-2.483409

Source: National Sample Survey of Registered Nurses

The f statistic suggests that the regression model is statistically significant at the $f < 0.05$ level. However, the low r-squared value shows that the model does not explain a high proportion of the total variation in the dependent variable. By examining the p-value column shown in this table, there are two statistically significant variables in the third response time frame,

“More than 3 years from now.” Those variables are RE_LVE_STRSSWE ($p = 0.031$) and RE_LVE_INSTAFF ($p = 0.001$). RE_LVE_STRSSWE or a stressful work environment is associated with a $-.6988863$ decrease in an affirmative YES (1) response when asked if a nurse plans on leaving their job in 3 years or more. RE_LVE_INSTAFF or insufficient staffing is associated with a 1.232115 increase in an affirmative YES (1) response when asked if a nurse plans on leaving their job in 3 years or more. Over time, it seems that nurses have less of a problem with stress and more of a problem with insufficient staffing numbers. This phenomenon could be due to nurses who plan on staying employed for at least 3 years with their job having their personal job needs met and do not believe that the environment that they work in is stressful. However, if a nurse in this position would leave their job in the future, organizational issues like insufficient staffing would lead them to do so.

Table 7 & 8: Regression 1: Explanatory Variables and Regression Results

Source	SS	df	MS	Number of obs	=	404
Model	1.56099569	8	.195124462	F(8, 395)	=	0.93
Residual	83.1989053	395	.21063014	Prob > F	=	0.4944
				R-squared	=	0.0184
				Adj R-squared	=	-0.0015
Total	84.759901	403	.210322335	Root MSE	=	.45894

WHEN_LV_BINARY2	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
RE_LVE_PAY	.0545684	.2370798	0.23	0.818	-.4100995	.5192363
RE_LVE_BRNOUT	.0301013	.2475375	0.12	0.903	-.4550633	.515266
RE_LVE_STRSSWE	.3634668	.2625375	1.38	0.166	-.1510972	.8780307
RE_LVE_GDMNG	-.0781256	.2431291	-0.32	0.748	-.5546499	.3983988
RE_LVE_INSTAFF	.3387491	.2620223	1.29	0.196	-.1748051	.8523033
RE_LVE_SCHED	.1486819	.265518	0.56	0.576	-.3717238	.6690876
RE_LVE_CARADV	-.2148694	.3010152	-0.71	0.475	-.8048484	.3751096
RE_LVE_ADVOPP	.1809859	.307486	0.59	0.556	-.4216755	.7836473
_cons	-2.206458	.857623	-2.57	0.010	-3.887369	-.5255482

Source: National Sample Survey of Registered Nurses

The f statistic suggests that the regression model is not statistically significant at the $f < 0.05$. The low r-squared value shows that the model does not explain a high proportion of the total variation in the dependent variable. There are no statistically significant variables in the second time frame, where a nurse notes that they will leave their job in “1 – 3 Years from Now.” Interestingly, the decision to leave a nursing job within 1 – 3 years was the most popular response to the survey question. In this timeframe, there are a wide variety of reasons that nurses are leaving their jobs, and no one reason is more likely to result in the turnover intention of nurses during this timeframe. Every variable could be a reason that a nurse chooses to turnover.

5. Conclusion

To retain their nurses, healthcare organizations in Maine and systems must focus on the categories in which a significant number of nurses have expressed their grievances. According to the data, the most important area to consider when

attempting to decrease the turnover intention of nurses is adequate compensation and benefits. Following very closely after compensation is finding ways to decrease burnout among currently employed nurses. Third, healthcare organizations in Maine must consider ways to decrease the stress of a working environment. Fourth, healthcare organizations in Maine must be sure to find quality management. Fifth, healthcare organizations in Maine must find ways to address the staffing challenges that can be especially prevalent in some areas of the country. These issues that nurses in Maine identified are the five most prevalent areas in which healthcare organizations can address and improve. A drop in the occurrences of “YES” answers occurred after these top five issues, and while the other categories of reasons to leave are important to address, resources may be better spent on finding ways to solve the glaring issues that nurses have with their employment situations.

The regression analysis shows that turnover intention within specific timeframes is not attributable to most variables, but some variables can offer insights into a nurse’s turnover intention at a certain point in time. The only statistically significant variable that would impact a nurse’s intention to leave within 1 year, was the lack of advancement opportunities which had a negative effect on the affirmative response of choosing to leave a nursing position within the year. This variable would fall under the category of organization commitment (Wang et al., 2022). This negative effect on the variable which would result in advancement opportunities not being a reasons to leave a nursing position within 1 year, may be due to the presence of legitimate advancement opportunities within the healthcare systems in which a nurse is employed. When it came to the decision to leave a nursing position in over 3 years, only a stressful work

environment and insufficient staffing had a statistically significant impact on the affirmative YES variable. A stressful work environment falls under the personal reasons a nurse would leave their job (Ulrich et al, 2007). However, according to the data, a stressful work environment has a negative impact on the affirmative response to a nurse's desire to leave their position in more than 3 years. This could be due to nurses who plan on staying for at least 3 more years, not experiencing, or anticipating an unbearable amount of stress from their current role, and thus not leaving their jobs due to that reason. Interestingly, insufficient staffing had a positive impact on the affirmative response to a nurse's desire to leave their position in more than 3 years. This can be seen as an example of organizational commitment as tolerating poor work situations can be attributable to a higher degree of organizational commitment (Wang et al., 2022). Nurses surveyed may have been anticipating a time when the insufficient staffing issues facing their employers begins to impact them to a degree that they deem worthy of leaving their roles.

These findings are in line with the issues identified by talent acquisition and nursing leaders at a healthcare system in Maine. All the leaders noted that recruiting and retaining nurses to and in the state of Maine is difficult, because of the rural nature of the state, and the limited draw for a young nurse (personal interview with MaineHealth Nursing Leader 1, 2023). Not only is it difficult to attract and retain nurses in Maine, according to these leaders, but it is also difficult to foster homegrown talent due to the relatively small population size of Maine (personal interview with MaineHealth Nursing Leader 2, 2023). Healthcare systems are working hard to make sure that there are clear career paths for new nurses and that they initially feel supported in their new role. With a population of

1.3 million people, Maine lacks the human capital needed for a robust workforce in many economies (personal interview with MaineHealth Talent Acquisition 1, 2023). However, with other well-known healthcare systems in Massachusetts and New Hampshire, nurses may opt to begin their careers in areas with more resources and opportunities for career advancement such as the Mass General Brigham system, or the Beth Israel Lahey Health system. This can lead to young talent in Maine flowing out to other areas and leaving Maine healthcare organizations scrambling to meet staffing needs (personal interview with MaineHealth Talent Acquisition 2, 2023). The data and regression show that these problems may contribute to the already massive challenges for leaders in Maine healthcare systems due to the thin numbers of staff and recruits they have access to. Nurses may be putting up with these conditions in the short term but may find the current solutions that healthcare systems are offering to be unsatisfactory. These findings may offer some concrete numbers and sentiments from nurses in Maine so that healthcare organizations can adjust their recruitment and retention strategies as needed.

In the future, it will be crucial to explore the relationships of these variables further. Examining the geographical location of these nurses may offer insights into retention strategies that healthcare organizations in Maine can utilize. Using data such as zip codes to identify where exactly nurses are working may reveal differences in reasons to leave based on their location. Some urban areas exist in Maine and most of the Maine population lives in these areas so identifying differences in turnover intention between different populations of nurses could prove useful when creating strategies to decrease nurse turnover intention. In addition to including geographical location in the analysis, using

variables that are subject to less subjectivity would be helpful. In the regression analysis of the timeframe within which a nurse would leave their job, instead of using the response “NOT SURE” to signify a nurse remaining in their job, a new survey question asking if a nurse plans to leave their job with only “YES” or “NO” as a response would limit the space for researcher interpretation in the data. In addition, it may be useful to create metrics for personal, and organizational issues that nurses face with their employment so that an analysis of a nurse’s turnover intention can be attributed to certain conditions in a clearer way. All in all, nurses face a variety of different reasons for experiencing turnover intention. These reasons can be due to complex personal and organizational problems that can arise from a position as a nurse. Understanding these reasons is crucial for healthcare organizations to reduce turnover among the crucially important nurses in Maine.

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