Factors Influencing Nurses' Turnover Intentions during the COVID-19 Pandemic in The Bahamas

by

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Abstract

Background: Nurses in The Bahamas like their colleagues across the globe have had to navigate the varied effects of the protracted COVID-19 pandemic on their work environments. One of the effects was the exacerbation of already low/limited availability of job resources (e.g., staff and medical/surgical supplies) coupled with high job demands (e.g., workload). These conditions may potentiate negative impacts to nurses' wellbeing and increase turnover leading to loss of essential nursing human capital required to provide quality patient care. Anecdotal evidence suggests that these conditions might push Bahamian nurses to leave their jobs. However, there is a dearth of empirical evidence regarding the influence of job demands, job resources, and well-being on turnover intentions among nurses in The Bahamas during the COVID-19 pandemic. **Purpose:** To: 1) Examine the influence of job demands, job resources, and well-being on turnover intentions among nurses employed at a public acute care hospital in The Bahamas during the COVID-19 Pandemic, and 2) Identify key predictors of nurses' turnover intentions. **Methods**: The Pandemic Nurses' Turnover Intentions (PNTI) model developed for this study was underpinned by the Job Demands-Resource Theory. The PNTI model is based on two assumptions:1) high job demands (i.e., fear of COVID-19, workload), and low availability of job resources (i.e., managerial support, human resources, collegial support, material resources) are directly associated with turnover intentions, and 2) job demands (i.e., fear of COVID-19, workload), and low availability of job resources (i.e., managerial support, human resources, collegial support, material resources) influence emotional and psychological well-being (i.e., anxiety, stress) which in turn influences turnover intentions. A cross-sectional descriptive design was used. Data were collected January-April 2022 from regulated nurses employed by a public acute care hospital in The Bahamas. IBM SPSS 28.0 was used to conduct stepwise multiple

linear regressions to examine the hypothesized relationships among the study variables fear of COVID-19, workload, managerial support, human resources, collegial support, material resources anxiety, stress and turnover intentions. The bootstrapping technique using PROCESS for SPSS 4.1 was employed to test the mediating effects of anxiety and stress on fear of COVID-19, workload managerial support, collegial support, human resources, and material resources and in turn on nurses' turnover intentions. **Results**: This study found that managerial support was a key predictor of turnover intentions among nurses. Findings also suggest that anxiety and stress were negatively impacted by fear of COVID-19 and workload. Additionally, managerial support and collegial support were negatively correlated with stress and anxiety, respectively. Stress and anxiety did not mediate the effects of fear of COVID-19, workload, managerial support, collegial support, human resources, and material resources on nurses' turnover intentions. **Conclusion:** The results from this study provide empirical evidence regarding the association of specific job demands, job resources and well-being variables on turnover intentions among nurses in The Bahamas during the COVID-19 pandemic. Findings from this study may assist nursing and other administrators with decision-making related to the development of strategies to retain nurses in acute care settings in The Bahamas.

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I end by giving thanks and praise to my Father and Lord. May I use this degree to be a blessing to others as I bring honor and glory to You.

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Chapter I Introduction

The importance of nurse turnover is reflected in global research spanning more than forty years. Healthcare leaders in every sector of healthcare remain concerned about the challenges related to the turnover of healthcare providers. High turnover of healthcare professionals, including qualified nurses, can be detrimental to the accessibility and delivery of healthcare and population health (World Health Organization [WHO], 2015). However, despite decades of research, turnover remains inconsistently conceptually and operationally defined (Halter et al., 2017), limiting the generalizability of studies' findings and application to practice (Hayes et al., 2012).

Most nurse turnover research focuses on understanding the causes of voluntary turnover (Gilmartin, 2013). However, not all turnover is voluntary, in that some nurses do not have control over their decision to leave their jobs. For example, some nurses leave their jobs for individual (i.e., health, relocation of spouse) or organizational (i.e., terminations, mandatory retirement) reasons (Hayajneh et al., 2009). Unfortunately, in most research, voluntary and involuntary turnover remains undifferentiated (Halter et al., 2017) and turnover is simplistically dichotomized into leavers and stayers (Hom et al., 2017).

In addition, turnover is inconsistently conceptually defined. Often turnover includes internal organizational turnover, where a nurse leaves for another nursing position (O'Brien Pallas et al., 2010) or non-nursing position in the same organization, or external organizational turnover, where a nurse leaves for another nursing or non-nursing position in a different organization (Baumann, 2010). Additionally, nurse turnover can also refer to professional turnover, where a nurse leaves the nursing profession but may or may not maintain their nursing registration (Hayes et al., 2012; Rudman et al., 2014), or to any number of combinations of the

mentioned descriptors (Kovner et al., 2014). Inconsistent conceptual and operational definitions of nurse turnover are problematic from an empirical, managerial and workforce perspective.

Firstly, organizational turnover is a different concept from professional turnover and should be clearly distinguished (Kovner et al., 2014). For instance, while a registered nurse (RN) leaving an organization may be difficult and costly for that organization; the human capital is often retained within the local and country's workforce. An RN leaving the profession or the country's workforce, however, represents a loss of human capital from the country's nursing workforce. Secondly the lack of differentiation between types of turnover confounds study findings and makes comparisons across studies and settings difficult (Hayes et al., 2012; Halter et al., 2017). Consistent and accurate measurement of turnover is an important step in effectively addressing nurse turnover (Kovner et al., 2014). Additionally, greater scrutiny of involuntary turnover could prove useful, particularly when some argue that with sufficient inducements (e.g., modification in work content or work context) some nurses at risk for organizational turnover (e.g., early retirees) may be convinced to remain employed (Hewko et al., 2019).

The complexity of addressing voluntary nurse turnover is evident in the numerous individual and contextual factors that have been found to intersect and to directly or indirectly influence a nurse's decision to leave their job (Drennan & Ross, 2019). Numerous predictive antecedents for voluntary nurse turnover have been identified and include age, education, and work experience (Al Sabei et al. 2020, Chegini et al. 2019; Tourigny et al., 2016). Predictors that might be categorized as job demands such as work climate, and higher workloads; and job resources such as lack of support and inadequate human and material resources have also been found to consistently predict nurse turnover (Khan et al., 2019; Labrague et al., 2018; Zhou & Gong 2015). Emerging evidence suggests that fear of COVID-19 is also a strong predictive

antecedent for nurse turnover (Labrague & De los Santos, 2020; De los Santos & Labrague, 2021). Finally, poor working environments, characterized by imbalances between job demands and job resources, have consistently been shown to affect nurses' well-being by stress, and burnout, and in turn, their turnover intentions (Dall'Ora et al., 2020; Lee & Jang, 2020).

Nursing turnover is particularly important given it can result in the loss of the nursing human capital, or the nursing knowledge, skills and experience needed to provide quality patient care (Aiken et al., 2014; Covell, 2008; Zhao et al., 2019). Considering the ongoing COVID-19 pandemic and the stress imposed on nurses who care for patients who have been diagnosed or are suspected to have COVID-19, determining the prevalence and increasing our understanding of job demands (i.e., fear of COVID-19 and workload), job resources (i.e., managerial and collegial support, and material and human resources to provide quality patient care), the level of well-being (i.e., stress, anxiety, and burnout) on Bahamian nurses' and their turnover intentions is timely and essential for maintaining a healthy and robust nursing workforce.

Thus, the focus of this study was to examine the influence of job demands (i.e., fear of COVID-19 and workload), job resources (i.e., managerial support, collegial support, material resources, and human resources to provide quality patient care), and Bahamian nurses' level of emotional and psychological well-being (i.e., stress, anxiety, and burnout) on their turnover intentions during the COVID-19 pandemic. The empirical evidence generated from this study could assist stakeholders with targeting interventions to reduce turnover in nurses during the COVID-19 Pandemic. Additionally, the importance of the knowledge gained cannot be overlooked as it can be a vital resource in nursing workforce planning for future epidemics and other disasters.

Background

This chapter provides an overview of the literature about voluntary and involuntary nurse turnover in the Caribbean, factors contributing to the need to examine the turnover intentions of nurses in The Bahamas, including migration, individual characteristics, and the work environment. Also included is an overview of the Bahamian nursing workforce and the COVID-19 Pandemic. The chapter concludes with the statement of the research problem and clarifies the significance of the study for the nursing profession in The Bahamas.

Nurse Turnover in the Caribbean

The turnover of nurses in the Caribbean is not a new phenomenon. For decades, the movement of these healthcare professionals has received regional and international attention (Brissett, 2019; Yeates, 2010). Many suggest that the current nursing shortages throughout the Caribbean, particularly in specialties such as critical care and midwifery, are largely due to vacancies left by the turnover of nurses, primarily through international emigration (Rolle Sands et al., 2020). Vacancy rates for nursing positions vary across the Caribbean. Available estimates indicate that during the last decade vacancies for approved and funded nursing positions in English-speaking countries have increased from 30% to over 40% (Jacobson, 2015; World Bank, 2009). Over 90% of nurses born in the Caribbean countries of Guyana, Haiti and Jamaica have left to practice in high-income countries such as the United States, Canada, and the United Kingdom while their home countries struggle to operate due to critical shortages of health personnel. Some countries report reduction of crucial services due to insufficient specialty nurses, such as in obstetrics and critical care (Rolle Sands et al., 2020). Major push factors vary among countries but are predominately centered on remuneration, poor work environments and high workloads (Rolle Sands et al., 2020).

Nurse Turnover in The Bahamas

Like many of its Caribbean neighbors, The Bahamas has a legacy of emigration, particularly to the nearby state of Florida, and England (Thompson, 2012). As a high-income country, and one of the wealthiest of the Caribbean countries, The Bahamas also attracts immigrants inclusive of healthcare professionals such as Registered Nurses from developed economies such as Britain, the United States, Canada, and Switzerland, as well as countries with less developed economies such as Haiti, Jamaica, Guyana, Nigeria, and The Philippines (World Bank, 2020). Nurses immigrate to The Bahamas primarily from lower middle-income countries such as The Philippines and Nigeria (Parkinson, 2020; World Bank, 2020). Drivers of this trend include numerous factors such as poor work environments and high workloads. A major pull factor is better remuneration in the destination country (Labrague et al., 2018).

Even as many internationally educated nurses (IENs) immigrate to The Bahamas, Bahamian nurses emigrate, leaving their positions, particularly from the public acute care hospitals for positions in North America. Anecdotal evidence leads one to surmise that the main push factors of Bahamian nurses are reflective of their colleagues from Caribbean countries and are primarily inadequate remuneration and poor working conditions. Major pull factors to North America include better remuneration and work conditions (Knowles, 2019; Turnquest, 2017). Adelberger et al. (2011) concluded that only 6% of nurses educated and registered with the Nursing Council of The Bahamas between 1994 and 2005, had left their jobs and likely migrated. However, in 2018, the public health system in The Bahamas had a deficit of over 500 registered nurses (RNs), despite an average of 100 locally educated RNs entering the public health sector annually over the last several years (L. A. Rolle, 2020; Major, 2019). This shortfall

of qualified nurses is projected to increase. While no empirical data exists, it is surmised that the driving force of the current nursing shortage in The Bahamas is the result of nurse turnover to pursue employment abroad (Cartwright-Carroll, 2018; Turnquest & McKenzie, 2017; Russell, 2018).

Overview of the Nursing Workforce in The Bahamas

Recent reports indicate that 1,437 regulated nurses, primarily female, are employed in the public healthcare sector in The Bahamas. The majority enjoy full-time employment. Over 60 percent of nurses are employed in the two acute care hospitals located in urban areas. The remaining nurses are deployed between the Psychiatric and Geriatric facilities and public clinics in New Providence, and clinics throughout rural areas on several islands of The Bahamas. IENs, mostly Filipino, account for 20% of the regulated workforce in The Bahamas (Clarke, 2019; Parkinson, 2020). Extrapolated data based on Hepburn et al. (2020) would suggest that most RNs and TCNs are between 25 to 34 years, with organizational tenure of 5 years or less.

The Bahamas Nurses' Union (BNU) represents all nurses employed throughout the public health sector. The BNU negotiates salaries and benefits inclusive of in-service awards, annual increments, paid meal breaks, uniform allowance, and medical insurance (Public Hospitals Authority, 2011). In 2016, the salary of an entry level RN was $24,250 USD, with an increment of $600 USD per annum plus social benefits (Government of The Bahamas, 2016). In 2018, entry level RNs in Barbados, another sovereign, high-income country in the Caribbean, earned less than $20, 000 USD with an increment of $500 USD per annum (The Chase Files, 2018).

Nurses are scheduled to work one of three shifts (0800 to 1600, 1500 to 2030, 2030pm to 0800). Day shift nurses rotate between 0800 to 1600 and 1500 to 2030, with two days off per

week. Nurses can be rotated through the 'night' shift every twelve weeks, working four nights followed by four nights off. However, nurses are often allowed to remain on the night shift for extended periods if requested. Slight variations occur in the Intensive Care and Neonatal Intensive Care Units. Generally, vacation entitlement is based on seniority but ranges from four to six weeks per annum (Public Hospitals Authority, 1999).

Registered nurses lead the nursing teams, under the immediate supervision of first line ward/unit managers such as a Nursing Officer II. Other members include Trained Clinical Nurses (TCN), practitioners who provide all basic nursing care, but do not administer medications. The role of Nursing Auxiliaries (NA) or Patient Care Assistants (PCA) overlaps with that of the TCN, as they too provide general nursing care, and are expected to provide general ward cleaning and run ward errands. Nurse managers may assist with various aspects of patient care on occasion; however, they function primarily in an administrative capacity. A 20-bed medical-surgical ward would be considered 'fully' staffed with two RNs, two TCNs, and two PCAs during the 8am to 4pm shift. This complement is likely to decrease with the subsequent shifts during the day (Personal Communication, October 19, 2020, Charlene Davis).

Nurses employed in the public health sector in The Bahamas receive remuneration and benefits exceeding those of colleagues in most neighboring Caribbean countries (World Bank, 2020). However, these benefits should be viewed in the context of anecdotal evidence suggesting extremely challenging and worsening work conditions. Strained finances are evident on almost a daily basis with frequent reports of shortages of staff, medication, surgical supplies and even beds, all of which negatively impact the provision of healthcare services in the country (Knowles, 2019; Ward, 2019). Already strained resources have been further compromised as the

public healthcare system struggles to provide care for the increasing number of COVID-19 cases and related hospital admissions (L. Rolle, 2020a).

COVID-19 and the Nursing Workforce in The Bahamas

The COVID-19 index case was confirmed in New Providence, the capital of The Bahamas on March 1, 2020 (Gilbert, 2020). The number of cases initially grew slowly, with stringent protocols such as curfews and mandatory wearing of masks in public spaces. However, cases have steadily risen to the point where the public acute care facility has been unable to keep pace. The Government of The Bahamas has since enlisted the help of Samaritan's Purse, a non-governmental organization based in the United States. Samaritan's Purse opened a 28-bed Emergency Field Hospital in New Providence, providing healthcare personnel, medical supplies, and personal protective equipment to provide critical care to COVID-19 patients (Samaritan's Purse, 2020). The Samaritan's Purse rendered additional assistance during the third wave, July 2021.

The ongoing nursing shortage, exacerbated by the rising COVID-19 cases requiring hospitalization, along with the absence of isolated or quarantined colleagues, continues to strain nurses on the frontline of the COVID-19 crisis (PAHO, 2020). The BNU and Nurses' Association have reported grave concerns regarding the levels of mental and physical stress to which the nurses are exposed (Jones, 2021, L. Rolle, 2020b; Turnquest, 2020). Nurses in The Bahamas, like counterparts globally, were fearful and anxious about their personal health and safety (Von Batten, 2020). Nurses were also concerned about the well-being of vulnerable family members and friends. These and other COVID-19 related challenges were reported as contributors to nurses experiencing high levels of stress, anxiety, fatigue, and burnout (Johnson, 2020; Jones, 2021; L. Rolle, 2020b).

The Bahamas, like many neighboring Caribbean countries, continues to grapple with the protracted nursing shortage. Anecdotally, we know that nurses in The Bahamas are now potentially exposed to increased levels of mental and physical stressors both on and off the job, reporting increased levels of emotional and psychological issues such as stress, fatigue, anxiety and burnout since the COVID-19 pandemic (Jones, 2021; Turnquest, 2020). This is particularly concerning as the rates of nurse turnover intention and actual nurse turnover are both highly influenced by imbalances in job demands and job resources; amplified by the current COVID-19 pandemic. Psychological stress, burnout, and high turnover intention are all products of a particular work context (e.g., limited resources and high job demands) (Labrague & De los Santos, 2020; Taris & Schaufeli 2016) and have been linked to negatively affecting nurses emotional and psychological well-being (Gao et al., 2017).

Problem Statement

Anecdotal evidence suggests that nurse turnover is the primary driver of the current nursing shortage in The Bahamas (Major, 2019). Challenging work conditions characterized by inadequate staffing, insufficient medications and surgical supplies accompanied by the ongoing COVID-19 pandemic place additional strain on already limited resources (PAHO, 2020). These work conditions potentially increase psychological stress, anxiety, and burnout among nurses. A work environment where nurses experience high psychological stress and burnout creates ideal conditions for nurse turnover (Labrague & De los Santos, 2020; Taris & Schaufeli 2016) resulting in loss of the nursing human capital (Covell, 2008) needed to provide quality patient care (Aiken et al., 2014; Antwi & Bowblis, 2018; Zhao et al., 2019). Loss of nursing human capital combined with increased job demands (i.e., increased workloads, high patient acuity) and

decreased job resources (i.e., inadequate staffing) can have disastrous effects on the remaining nurses' well-being (Antwi & Bowblis, 2018).

Considering the lack of empirical evidence regarding job demands, job resources, emotional and psychological well-being of nurses in The Bahamas, and the ongoing COVID-19 pandemic, it is imperative to increase our understanding of the prevalence of these factors. Equally important is our understanding of the influence of these factors on nurses' turnover intentions to ensure The Bahamas continues to build and maintain a healthy and robust nursing workforce.

Purpose of the Study

The purpose of this study was to 1) examine the influence of job demands, job resources, and well-being on nurses' organizational turnover intentions in The Bahamas during the COVID-19 Pandemic, and 2) identify the key predictors of nurses' turnover intentions.

Research Questions

1. What is the influence of job demands (i.e., fear of COVID-19, workload), job resources (i.e., managerial support, collegial support, human resources, material resources), and well-being (i.e., anxiety, stress, burnout) on nurses' turnover intentions?
2. Does well-being (i.e., anxiety, stress, burnout) mediate the influence of job demands (i.e., fear of COVID-19, workload) and job resources (i.e., managerial support, collegial support, human resources, material resources) on nurses' turnover intentions?
3. What are the key predictors of nurses' turnover intentions?

Significance of the Study

Nursing turnover profoundly impacts nurse, patient, and organizational outcomes. The loss of human capital through the turnover of experienced nurses adversely influences the

provision and continuity of patient care services, potentially contributing to higher rates of adverse events, missed nursing care and patient mortality (Griffiths et al. 2019). Turnover can adversely affect the morale, motivation, efficiency, and effectiveness among the remaining nurses (Hayes et al., 2012). Nurse administrators and organizations are challenged to retain their nursing workforce while maintaining a high level of quality nursing care through the implementation of various organizational measures and approaches.

This study is significant for various reasons. First, by developing a better understanding of the influence of job demands, job resources and the well-being on turnover intentions among Bahamian nurses during the COVID-19 pandemic, this study will assist stakeholders' decision-making relative to the *need* for the development of interventions to mitigate negative effects of job demands, job resources, and well-being, and in turn, reduce turnover of nurses *at risk* for leaving the organization. The study findings might also be useful in current and future disaster preparedness decision-making. Second, this study will contribute to the body of turnover literature by providing a unique lens of the COVID-19 pandemic through which the influence of job demands and job resources on turnover of Bahamian nurses will be viewed. To the author's knowledge, the Job Demands-Resources (JD-R) model (Demerouti et al., 2001) has yet to be used in COVID-19 research, or nursing research in The Bahamas.

Summary

In summary, turnover among nurses remains a concern in The Bahamas and globally. Individual and contextual factors intersect to influence turnover intentions among nurses. The current COVID-19 pandemic serves as an additional stressor, potentially negatively affecting nurses' emotional and psychological well-being and creating ideal conditions for higher turnover (Labrague & De los Santos, 2020; Lee & Jang, 2020). The consequences of nurse turnover are

concerning, with potential loss of the nursing human capital (Covell, 2008), and resulting challenges to organizations, healthcare systems and population health (WHO, 2015).

Chapter II Review of the Literature

In this section an overview of the empirical literature about voluntary nurse turnover and turnover intentions is provided, followed by a discussion of various job demands and job resources as predictive antecedents of nurses' turnover intentions. The section concludes with a discussion of the intersection of job demands, job resources, and nurses' well-being and turnover intentions in the context of the ongoing COVID-19 pandemic.

Nurse Turnover Empirical Literature

While some turnover is inevitable, high nurse turnover can negatively impact an organization's capacity to adequately meet patient needs and provide quality care (Dewanto & Wardhani, 2018). At the nursing unit level, high turnover adversely affects the morale of nurses and the productivity of those who remain to provide care (Antwi & Bowblis, 2018). Workforce instability is an ongoing concern in many countries and gives rise to questions about the impact of nurse turnover on the well-being of nurses, quality of patient care and system costs. Common reasons for leaving among nurses in the United States of America (USA), Canada, England, Germany, and Scotland include challenging work conditions and emotional exhaustion (Aiken et al., 2001). Regardless of the reason, employee turnover negatively affects the organization's operating budget, as well as the functioning of the organization through direct and indirect costs (Dewanto & Wardhani, 2018). However, employee turnover ought not to be viewed as solely negative (Lee et al., 2018; O'Brien-Pallas et al., 2006). As Lee and colleagues (2018) explain, organizations may benefit from turnover of misfits (disengaged employees, who do not value their work, and marginally perform job duties), and in so doing potentially avoid dysfunctional and costly outcomes for the employee and the organization. In fact, in functional turnover, poor performers are encouraged to leave, despite potential costs incurred by the organization.

Turnover of employees categorized as excellent performers or misfits both enable organizations to recruit new employees who could potentially provide new perspectives and ideas for improvements to the organization (O'Brien-Pallas et al., 2010).

Nurse turnover may be voluntary, where nurses have decided to leave their current position to transfer to another job within their current organization, leave their organization altogether, or leave the nursing profession (Hayes et al., 2012). While involuntary turnover is initiated by the employer as opposed to the nurse and includes mandatory retirement and termination (Price, 1977). Much of the nursing turnover research does not examine reasons for involuntary turnover, but rather focuses on understanding the causes of voluntary turnover and turnover intentions (Hom et al., 2017).

Turnover intentions – an employee's intent to voluntarily withdraw from an organization or profession (Tett & Meyers, 1993) has been consistently considered the best predictor of actual turnover in nursing (Flinkman et al., 2010; Labrague et al., 2018). In a multi-level study of over 23,000 registered nurses working in hospitals in 10 European countries' organizational turnover intention was strongly related to unit level variables such as staff and resources, and nurse-physician relationships. There was variability at both country (6.9%) and patient care unit level within hospitals (6.9%) regarding current workplace turnover intentions (Leinweber et al., 2016).

Numerous studies have synthesized literature related to predictors and consequences of nurse turnover. In one of the earliest meta-analyses of nurse turnover literature, Irvine and Evans (1995) reviewed 30 published and unpublished articles examining causal relationships among nurse turnover, job satisfaction and behavioral intentions. A significant positive relationship between turnover and behavioral intentions was noted. This study underscored the importance of

leadership and the need for administrators and managers to address the factors affecting the quality of nurse work-life (Irvine & Evans, 1995). In a later review of quantitative data primarily from the United States of America but inclusive of England and Canada, antecedents to turnover such as age, tenure, and supervisory management style/behavior were revealed (Tai, Barne, & Robinson, 1998). This review explored cross-sectional data regarding organizational analysis of turnover and demonstrated the value of social support to reduce turnover.

Hayes et al. (2006) conducted a comprehensive review of empirical qualitative and quantitative data from North American, European, and Asian countries (inclusive of previous reviews) to examine the scope of knowledge about "the nurse turnover problem, definitions of turnover, factors considered to be predictive antecedents of nurse turnover, turnover costs and the impact of turnover on patient, and nurse and system outcomes" (Hayes et al., 2006). The conceptualization and operationalization of nurse turnover varied greatly, making comparisons across studies challenging. Most of the literature focused on predictive antecedents of nurse turnover, underscoring the importance of job demands, for example workload, and job resources such as managerial support. Theoretical modeling of turnover seeking to demonstrate relationships among predictors consistently showed a positive relationship between intent to leave and turnover (Hayes et al., 2006). Similarly, reviews conducted by Coomber and Barriball (2007), Moseley et al., (2008) and Wagner (2007) found that while individual or demographic factors were relevant, factors related to the work environment for example, job resources, i.e., managerial and collegial relationships, were still the most relevant to nurses' turnover intentions.

As a follow-up to a previous literature review, Hayes and colleagues (2012) published the report of a comprehensive review that examined predictive antecedents of nurse turnover and its

impact on patient, nurse and system outcomes. Methodological challenges persisted with inconsistencies in definitions for turnover intention and conceptualization and measurements for organizational turnover. Most of the studies were cross-sectional and focused on determinants of nurse turnover. This review highlighted the need to consider generational factors in nurse recruitment and retention strategies as factors that influenced nurses to consider leaving their jobs appeared to differ based on generation. Hayes et al. (2012) concluded, in part, that to alleviate nursing shortages and increase organizational capacity for the delivery of nursing services, a better understanding of nurse turnover interventions was essential. With much of the nursing turnover literature already synthesized, Halter et al. (2017) conducted a systematic review of systematic reviews. The review included 9 systematic reviews, primarily published in the United States of America (n = 4, 44%). Halter and colleagues (2017) identified multiple predictive antecedents of turnover in adult nursing. Job demands such as high workload, and job resources such as supervisory support were important predictive antecedents of nurse turnover intentions and turnover.

The preceding discussion of the turnover evidence demonstrates consistent predictive antecedents of turnover and turnover intentions shared among nurses. The literature primarily focused on nurses from countries in North America and Europe, with some attention to Asia and Australia. Job demands such as high workload and work stress and job resources such as managerial and collegial relationships have consistently predicted nurse turnover and turnover intentions (Halter et al., 2017; Hayes et al., 2012). Consistent predictive antecedents of nurse turnover have been identified; however, differences occur across demographics, units, organization types, work settings and countries (Leineweber et al., 2016), with nurse turnover rates ranging between 15.1% and 44.3% (Duffield et al., 2014; Buchan et al., 2018). Voluntary

or involuntary turnover at the organizational level or professional level contributes to the nursing shortage (Dewanto & Wardhani, 2018; Mazurenko et al., 2015).

More recently, Pedrosa et al., (2019) conducted a systematic review to identify organizational culture as a predictive antecedent associated with nurses' turnover. Nine articles were included in their study: three were published in the United States of America, two in the Republic of China and the remaining four were from Italy, the Republic of Korea, Thailand and the United Kingdom. Like previous comprehensive reviews on nurse turnover (Halter et al., 2017; Hayes et al., 2012), Pedrosa (2019) also found that studies focused on voluntary turnover, with studies published in North America predominating the literature. Pedrosa (2019) found that the evidence pointed to numerous factors that influence nurse turnover through burnout. Scarce human, material and physical resources and excessive working hours were dominant factors contributing to stress and burnout, negatively affecting their personal and professional relationships, and potentiating their turnover (Pedrosa, 2019). These findings support those of Hayes et al., (2012), Halter et al., (2017) and others.

Turnover intentions have often been used as a surrogate when actual turnover data is not available. Findings from a recent systematic review examining factors related to nurse turnover intentions by Taghadosi et al., (2019) support this premise. In their review, Taghadosi and colleagues (2019) reviewed 50 articles and found that individual factors (e.g., age, gender, level of education, work experience, and marital status), job demands (e.g., unsuitable work conditions and occupational stress) and job resources (e.g., interpersonal relationships at work) were correlated with nurses' turnover intentions. These factors support those of actual turnover (Halter et al., 2017; Hayes et al., 2012; Pedrosa et al., 2019) and thus validating assertions that turnover intention is a reliable predictor for actual turnover.

Research directed towards identifying consistent predictive antecedents and consequences of nurse turnover intentions is ongoing. Recently, Chegini et al., (2019) examined the relationship between occupational stress, quality of working life and turnover intention amongst nurses working in critical care units in 10 hospitals in Iran. Sixty-three percent (n = 128) of nurses reported an intention to leave their job; 83% (n= 168) reported their job to be highly stressful (M= 3.5, SD= 0.86), and 81% (n = 164) reported their quality of working life to be low (M= 2.61, SD= 0.55). Quality of work-life, i.e., the factors affecting the conditions in and under which nurses work, is a consistent predictor of turnover and turnover intentions (Chegini et al., 2019; Pedrosa et al., 2019). Chegini and colleagues also found that turnover intention was less likely among younger nurses (*OR*= 1.17; 95% *CI*: 1.05–1.31, p= .006) and those who had more clinical experience (*OR*= 0.84; 95% *CI*: 0·75–0.95, p= .005). However, nurses who experienced high duty (*OR*= 1.95; 95% *CI*: 1.03–3.70, p= .04) and interpersonal stress (*OR*=1.78; 95% *CI*: 1.06–2.98, p= .029) were nearly twice as likely to leave their jobs.

COVID-19 and Nurse Turnover

The emergence of, and ongoing COVID-19 pandemic places an additional strain on already limited material and human resources potentially producing negative impacts on the psychological and physical well-being of frontline healthcare workers, including nurses. Negative impacts such as increased stress, anxiety, fatigue, and burnout (Hu et al., 2020) could potentially increase turnover (Lee & Juang, 2020).

Globally, by 22 June 2021, there had been over 178,503,429 confirmed cases of COVID-19, including 3,872,457 deaths (WHO, 2021). The high prevalence of this novel and highly infectious disease in the general population of many countries, the high numbers of critically ill patients requiring hospital admission, and the associated morbidity and mortality rates placed an

unprecedented demand on healthcare services globally (PAHO, 2020). These demands were met by already-depleted workforces pre-COVID-19 (Lasater et al., 2020) with further depletion due to quarantine, self-isolation and family responsibilities associated with the COVID-19 crisis (Maben & Bridges, 2020; PAHO, 2020).

According to the WHO Coronavirus (COVID-19) Dashboard (2021), by 21 June 2021, a total 2,413,847,050 vaccine doses had been administered globally. However, the nature of COVID-19 care and new ways of working for nurses and other healthcare team members remained unchanged (Centers for Disease Control, 2021). The nature of COVID-19 care and new ways of working were potentially highly stressful, fatiguing, emotionally exhausting and anxiety inducing for existing staff and new team members (González-Gil et al., 2021; Hu et al., 2020; Mo et al., 2020; Pappa et al., 2020; Xiao et al., 2020). Nurses experienced numerous changes in their work content and work context with job demands characterized by an increase in the volume and intensity of their work, all while accommodating new protocols and a very 'new normal' (González-Gil et al., 2021). Established nurse–patient ratios were under strain, with staffing shortfalls potentially made up by nurses without current requisite knowledge and skills (Raurell-Torredà et al., 2020). For instance, retired nurses were encouraged to return to practice, while final year nursing students were fast tracked to join the nursing registers in an effort to boost the workforce amid the COVID-19 crisis (Johnson et al., 2020, PAHO, 2020, Smith, 2020). "At the age of 22, I am the oldest nurse in the department. They did not provide any training; we were understaffed and all inexperienced." (Catania et al., 2020, p. 4).

Additionally, nurses had to adjust to their redeployment to areas with higher acuity or specialty areas (Shanafelt et al., 2020), amid heightened infection control protocols and isolation rules which were prohibitive to the presence of loved ones at the bedside, leaving nurses to

frequently fill this gap, while facilitating remote access for loved ones (Maben & Bridges, 2020). Further, in many instances, nurses have had to adjust to and cope with providing end-of-life care with greater frequency, with a more rapid deterioration of some patients affected by the coronavirus than that to which they are accustomed (Alshmemri & Ramaiah, 2020; Hendin et al., 2020).

Evidence from studies on COVID-19 reflects increased stress, fear and at times dysfunctional anxiety among nurses regarding their personal health or that of family and friends in the face of direct contact with the highly infectious and potentially deadly COVID-19 virus (Jiang et al., 2020; Labrague & De los Santos, 2020; De los Santos & Labrague, 2021; Ohta et al., 2020). An increased level of fear of COVID- 19 has been associated with increased organizational turnover intentions (Irshad et al., 2020; Khattak et al., 2020; Labrague&De los Santos, 2020). For instance, Labrague and De los Santos (2020) found a significant positive correlation between psychological distress (r= 0 .468, p = .001) and organizational turnover intention (r= .295, p= .001). Further, after adjusting for nurse, unit, and hospital characteristics, an increased level of fear of COVID- 19 was associated with increased organizational turnover intentions (β= .298; p= .001). Khattak et al. (2020) also found a significant positive relationship between fear of COVID-19 and turnover intention (β= .79, p < .05). Interestingly, nurses who reported not having attended COVID- 19- related training and those who held part- time job roles reported increased fear of COVID- 19 (Kim et al., 2020; Labrague &De los Santos, 2020). Qualitative study findings by Ohta et al. (2020) also indicate the importance of COVID- 19 to assist nurses with managing their fear of COVID- 19.

Several studies indicate nurses' concerns regarding job resources, including limited human and material resources e.g., staff and personal protective equipment (PPE) shortages, and

lack of support particularly from middle managers (Shanafelt et al., 2020). Limited human resources often result in longer hours of shift work per week, resulting in increased stress, fatigue and burnout among nurses (Mo et al., 2020; Sun et al., 2020). Concerns around limited PPE have been reported as a source of increased stress, anxiety, and fear among nurses (Catania et al., 2020; Alshmemri & Ramaiah, 2020). Notably, nurses report social support drawn from colleagues and managers as essential to coping with work stressors and anxiety-inducing events. Labrague and De los Santos (2020) found that increased perceived collegial support had a significant negative association with COVID-19 anxiety ($\beta = -0.142$, $p = .011$). Negative associations were also noted between collegial support and levels of stress (Ohta et al., 2020). In fact, fear of COVID-19 ($r = -0.057$, $p = < .05$) and turnover intentions ($r = -0.079$, $p = <.05$) were found to be low when managerial support was high (Khattak et al., 2020).

Understandably, there has been a proliferation of COVID-19 research over the past two years. Recent syntheses of the literature clearly demonstrate the physical, emotional, and psychological traumas that health care professionals, especially nurses have and continue to endure. Frontline nurses working in hospitals during the COVID-19 pandemic have reported positive and negative experiences. Positive experiences include improved personal strength, and collegial relationships (Muhammad, & Wardaningsih, 2022). Negative experiences include heightened stress, fear, and anxiety around the content and context of their work amid concerns about their ability to confidently navigate the changes (Jun & Rosemburg, 2022; da Silva Neto et al., 2021; Muhammad & Wardaningsih,2022). Stress and anxiety were found to be among the most prevalent of a wide range of psychological challenges experienced by nurses during the COVID-19 pandemic (Khoundabi et al.,2021; Rosales-Vaca et al., 2022; Saragih et al., 2021; Ghahramani et al., 2022).Similarly, global research including 50 countries on five continents also

found that at least 40% of healthcare workers, including nurses, reported experiencing high levels of anxiety and stress (Aymerich et al., 2022). While challenges regarding work content and context such as heavy workloads and high patient-to-nurse ratios have been long standing problems, the pandemic has exacerbated these problems, pushing many nurses to leave or plan to leave their positions and nursing altogether (Murphy et al., 2022).

Summary

The preceding discussion elucidates the continued challenge of nurse turnover and supports multiple predictive antecedents that influence turnover among nurses. Also clear is that the prevalence of high levels of emotional and psychological challenges among nurses may potentiate adverse consequences for organizations such as higher turnover intentions. The ongoing COVID-19 pandemic cannot be ignored with its additional stressors and fears related to the novel Coronavirus emerging as an additional predictive antecedent of turnover intentions. The increased fear may intensify pre- existing issues or provoke anxiety (Colizzi et al., 2020), potentially affecting nurses' emotional and psychological well-being and job outcomes, e.g., turnover intention (Labrague &De los Santos, 2020).

Chapter III Conceptual Framework

The conceptual framework for this study is guided by the first three assumptions of the Job-Demands Resources (JD-R) model (Demerouti et al., 2001), and the nursing turnover literature. To follow is a discussion of the conceptual framework, and the conceptual and empirical literature that supports its development, conceptual and operational definitions, and study hypotheses.

Job-Demands Resources (JD-R) Theoretical Framework

The job-demands resource (JD-R) model (Demerouti et al., 2001) is a theoretical framework introduced in the English literature 20 years ago and has been used to guide hundreds of empirical studies in numerous countries, organizations, and professional groups including nurses (Bakker & Demerouti, 2017; Lesener et al., 2019). The JD-R model was influenced by Karasek's (1979) work demands-control model, and Siegrist's (1996) effort-reward imbalance model. These models examined a limited number of job demands and resources as predictors of job stress, while the JD-R model investigated combinations of numerous job demands and resources as possible predictors of burnout (Demerouti et al., 2001).

The central assumption of the JD-R model is that work conditions, which are occupation specific, can generally be categorized as either job demands or job resources (Bakker & Demerouti, 2007; Demerouti et al., 2001; Demerouti & Bakker, 2011). Hence, the JD-R model should be applicable to varied occupational settings to identify the consequences of specific work environments on the well-being and performance of employees. Job demands (e.g., emotional, and physical job demands, work overload, high work pressure) are "those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological effort and are therefore associated with certain physiological and/or psychological

costs" (Demerouti et al., 2001, p. 501). Job resources (e.g., social support, quality of the relationship with the supervisor) are "those physical, psychological, social, or organizational aspects of the job that are functional in achieving work goals, reduce job demands and the associated physiological and psychological costs, or stimulate personal growth, learning, and development" (Demerouti, 2001, p. 501).

The JD-R model also assumes that two different underlying psychological processes (beginning with job demands and job resources) result in different outcomes critical to employees' well-being. Job demands cause strain, leading to negative outcomes such as exhaustion, job related anxiety, health impairment or turnover intentions (Bakker & Demerouti, 2017; Lesener et al., 2019). Further, the JD-R model assumes that the absence of job resources (e.g., human and material resources, and managerial support) leads to strain; while availability of job resources can mitigate the impact of job demands (e.g., high workload, emotional and physical demands) on strain (Bakker & Demerouti, 2017; Lessner et al., 2019). Simply put, employees cope better with their job demands when sufficient job resources are available.

The JD-R model represents a theoretically sound lens through which relationships between predictive antecedents (i.e., job demands, job resources, well-being), and nurse turnover intentions might be examined. Additionally, the JD-R model brings a unique perspective to the examination of nurse turnover intentions in the context of a global pandemic, which to my knowledge has yet to be achieved.

Conceptual Framework for Current Study

The COVID-19 pandemic has brought unprecedented challenges as well as numerous opportunities for innovation. It is within this historical context that this study was conducted, using the opportunity for the innovative use and possible extension of the JD-R model. For this

study, empirical literature from nursing and turnover, and the JD-R model were used to conceptualize the primary reasons nurses intend to remain in or leave their jobs during a pandemic (See Appendix A for the Pandemic Nurse Turnover Intentions Model). This conceptualization provides a distinctive method to examine turnover intentions among nurses and will provide a unique contribution to the body of evidence about how nurses decide to stay in or leave their jobs during a global pandemic. Elucidating key predictors of nurses' turnover intentions during disasters provides empirical evidence on which interventions may be developed to better protect and maintain a robust nursing workforce amidst unusually high levels of stress and anxiety provoking events.

A concept describes a phenomenon or group of phenomena through a concise summary of thoughts related to the phenomenon or group of phenomena (Meleis, 2012). Concepts in the form of observed variables and empirical indicators are operationalized to allow for their measurement and the examination of their relationship with other concepts. Operationally defining i.e., labeling concepts provide variables that can be measured and further developed (Meleis, 2012).

The Pandemic Nurse Turnover Intentions Model used for this study comprises three independent constructs: job demands, job resources and well-being. Job demands include two continuous variables: fear of COVID-19 and workload, while job resources include four continuous variables: collegial support, managerial support, human resources and material resources. The third construct, well-being includes three continuous variables: anxiety, stress and burnout. These three constructs influence turnover intentions, the dependent variable. Job demands and job resources are directly associated with turnover intentions (Dall'Ora et al.,

2020). However, job demands, and job resources influence emotional and psychological well-being, which influences turnover intentions (Labrague & De los Santos, 2020).

Job Demands

Job demands are "those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological effort and are therefore associated with certain physiological and/or psychological costs" (Demerouti et al., 2001, p. 501). During the pandemic, nurses continue to experience numerous changes in their work content and work context with job demands characterized by an increase in the volume and intensity of their work as they continue to adjust to a very 'new normal' (González-Gil et al., 2021). Workload is measured in many ways and is consistently identified in the literature as one of the primary job demands causing stress (Bruk-Lee & Spector, 2012; Bowling et al., 2015). Job demands such as fear of COVID-19 and workload are directly positively associated with negative outcomes such turnover intentions; and are also indirectly associated with turnover intentions through impaired emotional and psychological well-being among nurses (Dall'Ora at al., 2020).

For this study, job demands were conceptualized as the psychological and physical aspects of a nurses' job that require prolonged physical and/or psychological effort that are associated with certain psychological and/or physiological consequences. Nurses' job demands are reflected in their work environment and heightened during a pandemic. Job demands were operationally defined as the level of the nurse's fear of COVID-19, and workload (i.e., the volume and pace of work performed in a given time period) causing strain during the COVID-19 pandemic.

Job Resources

Job resources are "those physical, psychological, social, or organizational aspects of the job that are functional in achieving work goals, reduce job demands and the associated physiological and psychological costs" (Demerouti, 2001, p. 501). Job resources may potentiate or attenuate psychological and physiological effects (i.e., strain) inherent in the job (Demerouti et al., 2001; Mauno et al., 2010). For nurses, job resources are important because they influence health care quality, safety, and patient and nurse well-being (Lake et al., 2019). Job resources are also stressed during a pandemic as job demands increase (Catania et al., 2020; Shanafelt et al., 2020), negatively impacting emotional and psychological well-being, and influencing turnover intentions, and turnover among nurses (Pedrosa et al., 2019).

For this study, job resources were conceptualized as physical, psychological, social, or organizational aspects of the job that are essential to achieve work goals, and reduce job demands. Job resources were operationally defined as the availability of managerial support, collegial support, and the material and human resources to provide quality care.

Well-being

Well-being takes many forms and therefore is described or defined in many ways. Well-being is described as the degree to which an individual experiences more positive than negative emotions and moods, happiness, life satisfaction, or the ability to achieve goals (Dodge et al., 2012). Well-being is also defined as one's quality of life or the absence of distress and dysfunction, and the balance between an individual's psycho-social, and physical resources and their psycho-social, and physical demands. (Dodge et al., 2012). Well-being is compromised whenever job demands increase and job resources are threatened or lost (Bakker & Demerouti, 2014; Bakker et al., 2014; Bakker & Demerouti, 2017).

For this study, well-being was conceptualized as the nurses' ability to cope with the demands of psychological challenges faced during a pandemic. Well-being was operationalized as the nurses' levels of stress, anxiety, and burnout.

Stress is commonly referred to as occupational stress, work stress or workplace stress. Early conceptual definitions of employee stress have changed in focus over time from external or environmental situations, to internalized perceptions of stress. Currently, widely accepted definitions of employee stress combine previous conceptual definitions, referring to employee stress as an employee's reaction to one or more situations or environmental factors. An employee's reaction to stress might be behavioral, physical and /or emotional (Burman & Goswami, 2018). For this study stress was operationalized as the level of a nurse's emotional and/or psychological reaction to situations or environmental factors (i.e., job resources, job demands) present in the workplace.

Conceptual definitions for anxiety have undergone numerous changes over time. Anxiety is defined as an emotion characterized by continuously intrusive thoughts and physical changes, or a feeling of constant worry which undermines an individual's ability to cope with daily life (Xi, 2020). Anxiety is also defined as a feeling of anticipation of an actual or impending threat or event (Xi, 2020). Anxiety is often classified as *trait* anxiety or *state anxiety.* Trait anxiety describes anxiety that is noted as part of an individual's personality, whereas state anxiety refers to anxiety that only occurs in response to stressful situations (Leal et al., 2017; Saviola et al., 2020). This study examined *state* anxiety which was operationalized as the level of feeling of uneasiness characterized by non-adaptive physical and mental reactions in response to intrusive thoughts about future uncertainty during the pandemic.

Burnout has been inconsistently conceptualized, defined, and measured; however, researchers generally agree that burnout is a group of psychological symptoms developing from a prolonged response to persistent interpersonal stressors on the job (Maslach & Leiter, 2016; WHO, 2019). Burnout is defined as severe exhaustion, or a combination of feelings of energy depletion, mental distancing from one's job, feelings of reduced professional effectiveness and job-related cynicism. Burnout is often categorized into one or more of three main dimensions: emotional exhaustion (considered the core dimension of burnout, depersonalization, and personal accomplishment (Maslach & Leiter, 2016; Woo et al., 2020). For this study, burnout was operationalized as the level of emotional exhaustion, - the extent to which a nurse feels exhausted and emotionally overextended by their work during the pandemic.

High job demands increase strain (Idris, 2011), increasing the threat to emotional and psychological well-being (Bowling et al., 2015), and might lead to turnover intentions (Pedrosa et al., 2020). Low job resources also increase strain, increasing the threat to emotional and psychological well-being, and turnover intentions. However, job resources can also buffer the impact of high job demands on well-being (Bakker & Demerouti, 2017; Hirschle & Gondim, 2020).

Turnover Intentions

Turnover intention is defined as an individual's behavioral intention to leave their current position to transfer to another job within their current organization or leave the employ of the organization (Fishbein & Ajzen, 1975; Hayes et al., 2012). For this study, turnover intentions were operationalized as the level of nurses' conscious and deliberate willfulness to leave their current organization.

Study Hypotheses

Hypothesis 1a: High job demands (i.e., fear of COVID-19, workload) are positively related to nurses' intentions to leave the organization.

Hypotheses 1b: Low availability of job resources (i.e., managerial support, human resources, collegial support, and material resources) is negatively related to nurses' intentions to leave the organization.

Hypothesis 2a: High job demands (i.e., fear of COVID-19, workload) are positively related to nurses' well-being (i.e., anxiety and stress).

Hypothesis 2b: Low availability of job resources (i.e., managerial support, human resources, collegial support, and material resources) is negatively related to nurses' well-being (i.e., anxiety and stress).

Hypothesis 3: Well-being (i.e., anxiety and stress) mediates effects of job demands (i.e., fear of COVID-19, workload) and job resources (i.e., managerial support, human resources, collegial support, material resources) on nurses' turnover intentions.

Summary

In this chapter the JD-R theoretical framework assumptions used to guide this study were discussed. Additionally, this study's model, along with the supporting theoretical and empirical literature, the conceptual and operational definitions, and study hypotheses were also presented.

Chapter IV Research Methods

This study examined the influence of job demands, job resources and well-being on nurses' turnover intentions during the COVID-19 pandemic in The Bahamas. To follow is a discussion of the research design including the setting and sample, description of the study variables, procedures for data collection, and the statistical analysis. This section concludes with a discussion of ethical considerations addressed in this study.

Design

A cross- sectional descriptive design was used to examine the predictive relationship between job demands, job resources, well-being and turnover intentions among nurses working in a public acute care hospital in The Bahamas. This quantitative method approach permitted data collection via an online survey at one time-point (Polit & Beck, 2014), and allowed for inferential analysis of data to assess relationships between variables, the extent of the relationships, and to generalize based on the study findings (Daniel, 2016). Additionally, this design meant greater levels of researcher objectivity, and anonymity for the respondents during data collection without compromising the integrity of the data (Daniel, 2016).

Setting

The setting for the study was the largest government owned and operated hospital in The Bahamas. It is in the capital city, Nassau, on the island of New Providence and provides primary, secondary, and tertiary health services to residents throughout the archipelago of The Bahamas, and the Turks and Caicos Islands. A 402-bed complex, the hospital has nearly 2,000 employees and offers 31 specialty services to an average of 10,000 patients per annum. (Public Hospitals Authority, n.d., b). It also serves as the primary academic/teaching hospital in the country welcoming medical, nursing, and allied health students from the University of the West Indies

and The University of The Bahamas and Nova Southeastern University (Princess Margaret Hospital, n.d.).

Sample

The target population for this study included all regulated nurses (*N*= 537 [396 RNs, 138 TCNs]) working at the largest public acute care hospital located in The Bahamas. Non-probability sampling techniques, i.e., snowball and convenience sampling, were used to recruit nurses working at the study site. All regulated nurses employed full time or part-time and working in direct patient care units at the study site during data collection were eligible to participate. Nurse supervisors and other nurses who did not work in direct patient care were excluded from the study. Nurses on leave e.g., sick, study, maternity/paternity, were not eligible to participate in the study.

A minimum sample size of 100 cases or at least 10 cases per independent variable was needed to adequately power the stepwise multiple linear regression analyses if all independent variables were retained (Green, 1991; Jenkins & Quintana-Ascencio, 2020). Pre-COVID-19 turnover literature reports 44-49% participation rates for surveys of nurses in the Caribbean (Kerr, 2006; Lansiquot et al., 2011). However, a more conservative participation rate of 35% or *N*=188 was projected for this study. This projection ensured adequate sample size while accounting for the possibility of exclusion of up to 30% of cases due to missing data (i.e., >30% on variables of interest).

Variables and Measures

The variables included in the pandemic nurse turnover intentions model were determined following a critical review of the turnover and nursing literature. The empirical and operational

definitions were discussed in Chapter 2. In this section the measurements for the study variables and reliability of the measurement scales are discussed.

The reliability and validity of study measurement instruments are important indicators of the extent to which they consistently and correctly measure what they are designed to. Reliability estimates are used to assess internal consistency, test-retest reliability, or inter-rater reliability (Polit & Beck, 2014). Cronbach's alpha coefficients were used to assess the internal consistency of the instruments. Reliability coefficients range from 0 to 1, with higher coefficients indicating higher levels of reliability (Polit & Beck, 2014). Cronbach's alphas of .6 - .7 indicate an acceptable level of reliability, and .8 or greater are a very good indicator of reliability (Polit & Beck, 2014). See Appendix B which summarizes operational definitions and scale reliability coefficients.

Generally, validity is defined as the extent to which an instrument measures what it claims to measure. An instrument must be reliable to be valid. Validity estimates are used to assess face validity, construct validity, content validity, and criterion validity (Polit & Beck, 2014). The internal consistency, content and construct validity of the study measures are discussed in the section to follow.

Independent Variables

Job Demands

Job demands were operationally defined as the nurse's fear of COVID-19 and workload. These job demands are the psychological and physical aspects of a nurses' job that require prolonged physical and/or psychological effort that are associated with certain psychological and/or physiological consequences. Job demands were measured using two continuous variables: fear of COVI-19 and workload.

Fear of COVID-19: The Fear of COVID-19 scale (FCV-19S) (Ahorsu et al., 2020) is a self-report scale that measures one's level of fear of COVID-19. The FCV-19S includes 7 items. A sample item is, "I am most afraid of Corona". The respondents indicated their level of agreement with the statements using a 5-point Likert-type scale. Answers included "strongly disagree," "disagree," "neither agree or disagree," "agree" and "strongly agree". The minimum score possible for each item was 1 (strongly disagree), and the maximum was 5 (strongly agree). A total score was calculated by adding up each item score (ranged from 7 to 35) (Ahorsu et sl., 2020). Higher scores indicated higher levels of fear of COVID-19. This scale has been validated in various countries, populations, samples including nurses and languages including English. Cronbach's alpha for the FCS-19 ranged from .82 - .87 (Ahorsu et al., 2020, Labrague & De Los Santos, 2020).

Workload: The Quantitative Workload Inventory (QWI) (Spector & Jex, 1998) is a self-report scale that measures the volume and pace of work one is required to perform in a given time period. The QWI includes five items. A sample item is, "How often does your job leave you with little time to get things done?" The respondents indicated their level of agreement with the statements/questions using a 5-point Likert-type scale. Answers included, from "less than once per month or never", "once or twice per month", "once or twice per week", "once or twice per day", "several times per day". The minimum score possible for each item was 1 (less than once per month or never), and the maximum was 5 (several times per day). A total score was calculated by adding up each item score (range 5 to 25). Higher scores indicated higher volume and pace of work (Spector & Jex, 1998). This scale has been validated in various countries, populations, samples including nurses, and languages including English. Cronbach's alpha ranges from .81 - .88 (Baka, Ł., & Bazińska, 2016; Idris 2011; Spector & Jex, 1998).

Job Resources

The job resources within the nursing work environment are also stressed during a pandemic and were operationally defined as the availability of managerial and collegial support and material and human resources to provide quality care. Job resources were measured using four continuous variables: managerial support, collegial support, availability of human resources, and availability of material resources. Subscales for The Practice Environment Scale of the Nursing Work Index Revised (PES-NWI R) (Lake, 2002) were used to measure the related managerial support, collegial support, and availability of human resources variables.

Managerial Support: The Nurse Manager Ability, Leadership and Support subscale of the PES-NWI R (Lake, 2002) is a self-report scale that was used to measure the availability of managerial support present in the work environment. This subscale has five items. A sample item is "A head nurse who is a good manager and leader." The respondents indicated their level of agreement with the statements using a 5-point Likert-type scale. Answers included "strongly disagree," "disagree," "neither agree nor disagree," "agree" and "strongly agree". The minimum score possible for each item was 1 (strongly disagree), and the maximum was 5 (strongly agree). The mean score was derived by averaging item means (range 5-25). A higher score represents greater availability of managerial support in the practice environment (Lake, 2002). This subscale has been validated in multiple settings, samples including nurses, countries including the islands in the Eastern Caribbean, and languages including English (Lake, 2002, Lansiquot et al., 2012; Swiger et al., 2017, Warshawsky & Haven, 2012). Cronbach's alpha reported for this subscale ranges from 0.74 to 0.84 (Lake, 2002, Lucas et al., 2021; Swiger et al., 2017, Warshawsky & Haven, 2012).

Collegial Support: The Collegial Nurse-Physician Relations subscale from the PES-NWI R (Lake, 2002) is a self-report scale that was used to measure the availability of collegial support present in the work environment. This subscale has three items. A sample item is: "Physicians and nurses have good working relationships." The respondents indicated their level of agreement with the statements using a 5-point Likert-type scale. Answers included "strongly disagree," "disagree," "neither agree nor disagree," "agree" and "strongly agree". The minimum score possible for each item was 1 (strongly disagree), and the maximum was 5 (strongly agree). The mean score was derived by averaging item means (range 3-15). A higher score represents greater availability of collegial support in the practice environment (Lake, 2002). This subscale has been validated in multiple settings, samples including nurses, countries including the islands in the Eastern Caribbean, and languages including English (Lake, 2002, Lansiquot et al., 2012; Swiger et al., 2017, Warshawsky & Haven, 2012). Cronbach's alpha reported for this subscale range from .70 - .81 (Lake, 2002, Swiger et al., 2017, Warshawsky & Haven, 2012).

Human Resources: The Staffing and Resource Adequacy subscale of the PES-NWI R (Lake 2002) is a self-report scale used to measure the availability of human resources available in the work environment. This subscale has four items. A sample item is: "Enough registered nurses to provide quality patient care." The respondents indicated their level of agreement with the statements using a 5-point Likert-type scale. Answers included "strongly disagree," "disagree," "neither agree nor disagree," "agree" and "strongly agree". The minimum score possible for each item was 1 (strongly disagree), and the maximum was 5 (strongly agree). The mean score was derived by averaging item means (range 4-20). A higher score represents greater availability of human resources in the practice environment (Lake, 2002). This subscale has been validated in multiple settings, samples including nurses, countries including the islands in the

Eastern Caribbean, and languages including English (Lake, 2002, Lansiquot et al., 2012; Swiger et al., 2017, Warshawsky & Haven, 2012). Cronbach's alpha reported for this subscale ranges from .75 - .80 (Lake, 2002, Lucas et al., 2021; Swiger et al., 2017, Warshawsky & Haven, 2012).

Material Resources: The availability of material resources scale is a self-report scale measuring the availability of material resources in the work environment. Two items from the Staffing and Resource Adequacy subscale of the PES-NWI R (Lake 2002) were adapted to comprise the material resources scale following an extensive review of the pre- and early post-COVID literature (Dall'Ora et al., 2020; Hayes et al., Halter et al., Rivaz et al., 2017, Pedrosa, 2019). A sample item is: "Adequate equipment to get the work done." The respondents indicated their level of agreement with the statements using a 5-point Likert-type scale. Answers included "strongly disagree," "disagree," "neither agree nor disagree," "agree" and "strongly agree". The minimum score possible for each item was 1 (strongly disagree), and the maximum was 5 (strongly agree). The mean score was derived by averaging item means (range 2-10). A higher score represents greater availability of material resources in the practice environment.

Mediating Variables

Well-being: Well-being was operationally defined and measured using three continuous variables: stress, anxiety, and burnout. The stress and anxiety subscales from the Depression, Anxiety and Stress Scale - 21 Items (DASS-21) (Lovibond & Lovibond, 1995), and the Emotional Exhaustion subscale from the Maslach Burnout Inventory - Human Services Survey (MBS-HSS MP) (Maslach & Jackson, 2016) were used.

Stress: The Stress subscale of the DASS-21 (Lovibond & Lovibond, 1995) is a self-report scale used to measure one's level of stress experienced within a given time frame. The scale has seven items. A sample item is "I found it hard to wind down." The respondents indicated their

level of agreement with the statements using a 4-point Likert-type scale. Answers included "NEVER Did not apply to me at all", "SOMETIMES Applied to me some degree or some of the time", "OFTEN Applied to me a considerable, or good part of the time", ALMOST ALWAYS Applied to me very much or most of the time". The minimum score possible for each item was 0 (NEVER Did not apply to me at all), and the maximum was 3 (ALMOST ALWAYS Applied to me very much or most of the time). Summative scores (range 0 - 21) were calculated then multiplied by two (to compare with the full DASS-42). Higher scores indicate higher levels of severity of stress. The scores were categorized as "normal", "mild", "moderate", "severe", and "extremely severe" based on predetermined criteria (Lovibond & Lovibond, 1995). This subscale has been validated in multiple settings, countries and languages including English, and widely used in healthcare and nursing populations (Azma et al., 2014; Lee et al., 2019; Tran et al., 2019). Reported Cronbach's alphas range from 0.78 - 0.89, and 0.74 - 0.89 (Azma et al., 2014; Coker et al., 2018; Musa & Maskat, 2020; Tran et al., 2019)

Anxiety: The anxiety subscale of the DASS-21 (Lovibond & Lovibond, 1995) is a self-report scale used to measure one's level of anxiety experienced within a given time frame. The scale has seven items. A sample item is "I was aware of dryness of my mouth." The respondents indicated their level of agreement with the statements using a 4-point Likert-type scale. Answers included "NEVER Did not apply to me at all", "SOMETIMES Applied to me some degree or some of the time", "OFTEN Applied to me a considerable, or good part of the time", ALMOST ALWAYS Applied to me very much or most of the time". The minimum score possible for each item was 0 (NEVER Did not apply to me at all), and the maximum was 3 (ALMOST ALWAYS Applied to me very much or most of the time). Summative scores (range 0 - 21) were calculated then multiplied by two (to compare with the full DASS-42). Higher scores indicate higher levels

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Burnout: The Emotional Exhaustion subscale (MBS-HSS MP, Maslach & Jackson, 2016) is a self-report scale used to measure the core dimension of burnout. The subscale has nine items. A sample item is “I feel emotionally drained from my work.” Respondents indicated their level of agreement with the statements using a 7-point Likert-type scale. Answers should have included “Never”, “A few times a year or less”, “Once a month or less”, “A few times a month”, Once a week”, “A few times a week”, “Everyday". The minimum score possible for each item was 0 (Never), and the maximum was 6 (Every day). A summative score (0 - 54) is categorized as “low” (0-16), “moderate” (17-26) and “high” (27 or above) levels of emotional exhaustion (Maslach et al., 2016). This subscale has been validated in multiple settings, countries (including Caribbean) and languages including English. It is regarded as the gold standard to evaluate burnout and has been widely used in healthcare and nursing populations (de Oliveira et al., 2019; Maslach et al., 2009; Tourigny et al., 2016; Woo et al., 2020). Reported Cronbach’s alphas range from 0.83 - 0.90 (Aguayo et al., 2011; Calderón-De la Cruz G. A., & Merino-Soto, 2020; Tourigny et al., 2016). Regrettably this variable was excluded from data analysis. Errors in transcription while creating the survey resulted in changes to the copyrighted MBI-HSS scale responses. This error was only recognized after data collection. Using the altered scale without

prior permission would be a violation of the terms of use agreed upon with the purchase of the tool.

Dependent Variable

Turnover Intention: Turnover intention was measured using a one-item scale adopted from the turnover literature. The respondents indicated their level of agreement with the statement" I intend to leave the hospital in the next 12 months." using a 5-point Likert-type scale. Answers included “strongly disagree,” “disagree,” “neither agree nor disagree,” “agree” and “strongly agree”. The minimum score possible for each item was 1 (strongly disagree), and the maximum was 5 (strongly agree). A higher score indicated greater turnover intentions. Single-item measures have consistently demonstrated content validity, i.e., strong, or very strong definitional correspondence (Mathews et al., 2022), and have been used to measure turnover intention in multiple populations and settings including nurses working in the Caribbean (Hom & Griffeth, 1995; Li et al., 2016; Tourigny et al., 2016).

Demographic, Work Characteristics and COVID-19 Experience

To describe the study sample, data about the respondents’ demographic, work characteristics and COVID-19 experiences were collected. The variables are discussed below.

Demographic characteristics: Seven variables were used to examine demographic characteristics: age, sex, race, marital status, number of dependents, practice license, country of education. ***Age*** was operationalized as the number of years and months since the date of birth and will be measured as a continuous variable. ***Sex*** was operationalized as either of the two sexes and measured as a categorical variable: Male, Female, Prefer not to answer, Other, please specify. ***Race*** was operationalized as biological and physical characteristics, and measured as a categorical variable: Asian, Black/African descent, Mixed (will be asked to specify), White,

Other (please specify). ***Marital status*** was operationalized as the state of being married or not and measured as a categorical variable: married, single, divorced, separated, widowed, common-law. The ***number of dependents*** was operationalized as the number of relatives and others to whom the nurse has responsibility for financial or physical support, and was measured as an open-ended, continuous variable. ***Practice license*** type was operationalized as the necessary qualification required to legally work as a nurse in The Bahamas and was measured as a categorical variable: Registered Nurse, Registered Midwife, Registered Nurse/Registered Midwife, Trained Clinical Nurse. ***Country of education*** was operationalized as the country where the nurse received basic nursing education and measured as a nominal variable. Respondents were required to select from a list: Barbados, Jamaica, Philippines, Nigeria, The Bahamas, Other, please specify.

Work characteristics: Eleven variables were used to describe the respondents' work characteristics: employment status, overtime, retirement intentions, acceleration of retirement intentions, absenteeism, reason for absenteeism, intention to take leave of absence, professional, organizational, unit tenure, and primary work unit. ***Employment status*** was operationalized as the number of hours per work week and was measured as a categorical variable: Full-time (40-hour week) or Part-time (less than 40-hour week). ***Overtime*** was operationalized as the average number of overtime shifts worked per month over the past 12 months. Overtime was measured as an open-ended, continuous variable. ***Retirement intentions*** was operationalized as the respondents' likelihood of retiring within the next 12 months and measured using a five-point Likert-type scale and include "strongly disagree," "disagree," "neutral" "agree" and "strongly agree". ***Acceleration of retirement intentions due to the COVID-19 pandemic*** was operationalized as intent to retire earlier than planned because of the COVID-19 pandemic and

measured using a five-point Likert-type scale and includes “strongly disagree,” “disagree,” “neutral” “agree” and “strongly agree”. ***Absenteeism*** was operationalized as the average number of missed shifts per month over the past 12 months, and measured as an open-ended, continuous variable. ***Reason for absenteeism*** was operationalized as the cause for missed shifts within the last 12 months and measured as a categorical variable: job exposure to COVID-19, community exposure to COVID-19, illness other than COVID-19, childcare, fatigue, other, please identify, not applicable. Respondents were asked to select all that applied. ***Intention to take a leave of absence*** was operationalized as the likelihood that the respondent will miss shifts within the next twelve months and measured using a five-point Likert-type scale and include “strongly disagree,” “disagree,” “neutral” “agree” and “strongly agree”. ***Professional tenure*** was operationalized as the length of time, in years, months since the nurse has held a professional nursing license and measured as an open continuous variable. ***Organizational tenure*** was operationalized as the length of time, in years and months since the nurse has been employed in the current organization and measured as an open continuous variable. ***Nurse unit tenure*** was operationalized as the length of time in years and months since the nurse has been working in the current unit and measured as an open continuous variable. **Primary work unit** - was operationalized as the respondent’s primary work ward or unit, and measured as a categorical variable: In-Patient services: Critical Care Services (Intensive Care Unit, Neonatal Intensive Care Unit, Special Care Baby Unit), Medical Units (Male, Female and Private Medical Wards, Infectious Disease Units (COVID and non-COVID), Dialysis In-patient and Out-patient services), Surgical Units (Male and Female Surgical Wards, Male Orthopedic ward, Eye Ward, Burn’s Unit, Operating Theatre), Maternity and Obstetrics, and Gynecology (Maternity Wards [Post-Natal, Ante-Natal, Labour and Delivery], Gynecology Ward, Children’s Ward), Out-

Patient Services: Accident and Emergency Department and Specialty Clinics, and Other – asked to please specify.

COVID-19 experience: Seven variables were used to describe the respondents' experience with COVID-19: COVID-19 risk, COVID-19 vaccination, provision of COVID-19 care, COVID-19 education, adequacy of COVID-19 education, and redeployment due to COVID-19. ***COVID-19 risk*** was operationalized as the presence of one or more medical conditions that increase the risk of contracting the coronavirus that causes COVID-19. COVID-19 risk was measured as a categorical variable: lung disease, heart disease, diabetes, obesity, cancer, chronic liver disease, chronic kidney disease, other –asked to please indicate or not applicable. Respondents were asked to select all that apply. ***COVID-19 vaccination*** was operationalized as the inoculation to produce immunity against the coronavirus that causes COVID-19. It was measured as a categorical variable. Respondents were asked to indicate their COVID-19 vaccination status: fully immunized (i.e., received a single-dose vaccine or both doses of two-dose), partially immunized (i.e., received one dose of a two-dose vaccine), or unvaccinated (i.e., yet to receive any doses of a COVID-19 vaccine). This was measured as a categorical variable. ***Provision of COVID-19 patient care*** was operationalized as the length of time in months that the nurse had been engaged in direct care of patients diagnosed with or suspected of having COVID-19. It was measured as an open continuous variable. ***COVID-19 education*** was operationalized as the receipt of institutional initiated education on the prevention, spread and treatment of COVID-19. It was measured as a dichotomous nominal variable: Yes or No. ***COVID-19 education adequacy*** was operationalized as the nurses' perception of the adequacy of the institution-initiated education on the prevention, spread and treatment. It was measured using a 5-point Likert-type scale, "strongly disagree," "disagree,"

"neutral" "agree" and "strongly agree". Higher values indicated higher agreement that the COVID-19 education was adequate. **COVID-19 redeployment** was operationalized as the unscheduled change in the work unit due to COVID-19. This was measured as a dichotomous variable: Yes, No.

The survey instrument that included the above scales was pilot tested for face and content validity using a convenience sample of 10 nurses who were employed by the hospital but not included in the study sample. Pilot testing involved conducting a small-scale study prior to the actual study. The participants were invited to participate via WhatsApp, a free instant messaging platform. They were asked to complete the survey, and then comment on the following: whether the survey items were clear, easily understood, contextually and culturally appropriate for The Bahamas and presented in a consistent manner (Abu Hussan et al., 2006). Items requiring clarification were refined in consultation with the participants prior to data collection in the larger study (Polit & Beck, 2014).

Recruitment and Data Collection Procedures

The Principal Nursing Officer and the research nurse at the study site were contacted by electronic mail to request a meeting to explain the study, inquire about initial interest in, and solicit recommendations on data collection procedures for the study. After the meeting, the Principal Nursing Officer provided a letter of support providing the researcher with permission to: 1) post recruitment flyers in the common areas, as well as on the notice board(s) next to nurses' stations on each of the direct patient care units, and 2) promote the study during continuing nursing education. Additionally, commitment for promotional assistance from the research nurse and nurse educator or their designate was secured.

Recruitment

The week of the survey launch, study flyers (see Appendix C) were posted on the Nurses' Association of the Commonwealth of The Bahamas Facebook page and the researcher's personal media platforms (Facebook, LinkedIn, Instagram, WhatsApp, and YouTube). The Bahamas Nurses' Union and the Licensed Practical Nurses' Association also partnered with the researcher to promote the study in their public forums. Nurses were encouraged to share the study information and survey link with colleagues. The research nurse or designate posted study information/recruitment flyers during the first week of data collection. The research nurse drew the attention of nurses present to the study. Respondents were encouraged to access the survey using desktop computers, or mobile devices such as tablets or cell phones. Respondents were also encouraged to refer colleagues to the study information.

Data Collection

Data were collected using the online survey (Appendix D) over a 3-month period (January 4 - April 4, 2022) per Dillman's Total Design Method strategy (2014). Interested RNs, RMs, and TCNs were able to access the survey by entering the URL link provided on printed study material or directly through the URL address posted on various social media platforms. Once the link was activated, respondents were required to answer three screening questions: "Have you completed this survey before?", "Are you a government employed registered nurse, trained clinical nurse, or registered midwife involved in direct patient care?", "Are you currently employed at the Princess Margaret Hospital?". An answer of "no" to any of these questions directed the respondents to a message thanking them for their interest and informing them of their ineligibility to participate. Respondents answering "yes" to all questions were directed to the study information (Appendix E). At the end of the information page, respondents were required to select either of two options: "Yes. I consent to participate in this study" or "No. I do

not consent to participate in this study" Agreeing to participate took the respondent to the beginning of the survey and disagreeing to participate took the respondent to the end of the survey and a message thanking them for their interest in the study. The survey should have taken on average 20 minutes to complete. This estimation was based on pilot testing.

To promote/encourage participation: a) three weeks after the survey was launched, the research nurse or designate visited the direct care units to post the first of three study reminder flyers on notice boards in the common areas of the hospital (Appendix F); b) three weeks after the first reminder was posted, the research nurse or designate conducted a second follow up visit to the direct care units to post the second of three reminder flyers on notice boards in the common areas of the hospital (Appendix G); (c) three weeks after posting of the second reminder flier, the research nurse or designate returned to post the third of three reminder flyers on notice boards in the common areas and next to the Nurses' Stations (Appendix H) (Dillman, 2014). Reminders were also posted on social media platforms per the schedule as outlined above (Dillman, 2014). The reminders included the study URL and the completion and submission deadline for the survey. Follow-up reminders have been found to be effective in increasing participation among health professionals (Cho et al., 2013, Munn& Jones, 2020).

Compensation

The participants were not paid for their time. However, each ward/unit received a supply of assorted teas, and snack items for the nurses' break rooms as a small token of appreciation for their support.

Ethics and Protection of Human Subjects

Ethical approval from the University of Alberta Research Ethics Board (REB 2) as well as operational approval from the Research Ethics Committee (Nassau, Bahamas) was secured

prior to commencing the study. Each respondent could access and read the information letter once the survey was accessed. The letter detailed the nature of the study (purpose, potential risks/benefits), the voluntary nature of their participation, explained their volitional control to not answer specific questions, and withdraw from the study at any time by exiting the survey. Additionally, respondents were assured of their anonymity and the confidentiality of the information they provided. For instance, no internet protocol (IP) addresses or any other information that could link participation to an electronic device was collected; and respondent codes were randomly assigned by the survey program.

Data Analysis

IBM SPSS AMOS 28.0 was used to conduct confirmatory factor analyses (CFA). IBM SPSS version 28.0 for Windows was also used to analyze missing data, and descriptive statistics for demographic, work characteristics, COVID-19 experience, and the study's variables of interest. Percentages, frequency distributions, means, and standard deviations were used to describe these variables. Additionally, Pearson's correlation was used to examine relationships between all the study's continuous variables. SPSS version 28.0 for Windows was also used to perform reliability tests, and stepwise multiple linear regressions to examine the effects of job demands, job resources, and well-being variables on nurses' turnover intentions. PROCESS for SPSS 4.1 (Hayes, 2022) was used to conduct mediation analysis using bootstrapping technique.

Missing Data

Missing data are the number and proportion of missing values for each variable and the number and proportion of missing variables in each survey item (Field, 2013). Missingness for the variables of interest in this study was 1% or less. The Missing Completely at Random (MCAR) Test (Little & Rubin, 2002) indicated missing data were distributed completely at

random ($\chi 2 = 23.700$, $df = 30$, $p = .785$) and not the result of system problems e.g., survey design (Graham, 2012).

Factor Analysis

Literature supports the strong association between factor analysis and construct validity (Babyak & Green, 2010; Cudeck & MacCallum, 2007; Gaskin & Happell, 2014). Factor analysis examines evidence based on test content and internal structure, thus demonstrating the extent to which the instrument is measuring the construct or factor (Hair et al., 2010). Confirmatory factor analysis was conducted in this study.

Confirmatory Factor Analysis

The validity of the data collection scales measuring fear of COVID-19 (Ahorsu et al., 2020), workload (Spector & Jex, 1998), managerial and collegial support, and human resources (Lake 2002) in this study is well documented. However, no evidence was located indicating that any of the tools used to measure variables comprising job demands, job resources, well-being or turnover intentions had been used in the Bahamian nursing population. Under such circumstances it was considered prudent to assess construct validity by conducting CFA to verify the factor structure of each scale (Polit & Beck, 2014).

IBM SPSS AMOS 28.0 was used to conduct the CFA. The first item loading of each factor was set to 1.0 in all models to identify the models (default setting in IBM SPSS AMOS). Factor loadings indicate the extent to which each item in a model contributes to the construct being measured (Tabachnick & Fidell, 2013). A global evaluation of model fit using single factor analyses was conducted, and a combination of common "absolute" and "incremental/comparative" fit indices were estimated. Kline (2015) suggests a minimum set of fit indices as follows: (a) Comparative Fit Index (CFI), (b) Root Mean Square Error of

Approximation (RMSEA), (c) Standardized Root Mean Square Residual (SRMR). The CFI, RMSEA, and SRMR were used as they are independent of the sample size. The CFI examined the discrepancy between the hypothesized model and the sample data but is less sensitive to sample size and non-normality (Tabachnick & Fidell, 2013). A CFI value of ≥0.95 is considered as indicative of good model fit (Hu & Bentler, 1999). The RMSEA analyzed the discrepancy between the hypothesized models, with the perfect model. RMSEA ranges from 0 to 1 with a lower value indicating better model fit (Hu & Bentler, 1999). RMSEA < 0.05 is considered good, 0.05 - 0.08 is acceptable, and > 1 is poor/mediocre. (Fabrigar et al., 1999). SRMR is an absolute measure of model fit that assesses the average magnitude of the discrepancies between observed and expected correlations. A value of zero indicates perfect fit. A value less than < .08 is generally considered a good fit (Hu & Bentler, 1999).

Reliability

The internal reliability as indicated by Cronbach's alphas for scales used in this study were all very good: fear of COVID-19 - .90, workload - .86, managerial support - .84, human resources - .92, collegial support - .90, material resources - .96, anxiety and stress - .86 and .89 respectively. See Appendix B.

Stepwise Multiple Linear Regression

Stepwise multiple linear regression was the statistical technique used to predict the relationship between the dependent and independent variables in this study. Additionally, stepwise multiple linear regression allowed for assessment of the overall fit (i.e., total variance explained) by the models, and the relative contribution of each independent variable to the total variance explained (Tabachnick & Fidell, 2013). This technique was also used to prevent interactions between some highly correlated independent variables using an iterative process to

select the best group of independent variables that account for the most statistically significant (p=<.05) variance in the dependent variable (Field, 2013).

Hypotheses were evaluated using the estimates i.e., coefficients generated during the regression analyses, and the amount of (explained) variance in the dependent variable accounted for by the variation in each of the independent variables was calculated. This calculation allowed for the assessment of the relative theoretical importance of the independent variables. (Tabachnick & Fidell, 2013). The standardized regression coefficients (Beta) allowed the assessment of the relative theoretical importance of the independent variables. The size of standardized Beta coefficients demonstrated the extent to which each of the independent variables contributed on its own to the variance in the dependent variables after the effects of all the other independent variables in the model have been statistically removed. The statistical significance for each estimated coefficient was assessed using a p-value < .05 (Field, 2013). The "goodness of fit" statistics, i.e., F-statistic, and adjusted R^2 were reported to demonstrate the amount of variance in the dependent variable explained by the combination of the independent variables. The F-statistic determined the statistical significance of all coefficients in the regression models. The adjusted R^2 determined the overall amount of variance in the dependent variable explained by the combination of independent variables (Tabanick & Fidell, 2013).

Mediation

At its simplest mediation adds a third variable (i.e., mediator) to the X (i.e., independent variable) to Y (i.e., dependent variable) relationship. In mediation, path c represents the relationship of X to Y, path a represents the relation of X to M, path b represents the relation of M to Y adjusted for X, and path c' the relation of X to Y adjusted for M (Baron& Kenny, 1986). Theoretical and empirical evidence suggests that well-being mediates the effect of job

demands and job resources on nurses' turnover intentions. The non-parametric bootstrapping analyses for testing mediation (Preacher and Hayes, 2004; Preacher et al., 2007) were employed using PROCESS in IBM SPSS 28.0 (Hayes, 2022) to test whether well-being represented by anxiety and stress mediated the relationship between job demands represented by fear of COVID-19 and workload, job resources represented by managerial support, human resources, collegial support and material resources, and nurses' turnover intentions. Bootstrapping re-sampled the study's original dataset thousands of times to create many simulated samples. The bootstrap method has an equal probability of randomly drawing each original data point for inclusion in the re-sampled datasets. The simulated samples are the same size as the original dataset. The numerous combinations of values in the simulated samples together provide an estimate of the variability between random samples drawn from the same population. Bootstrap analyses allow the: 1) calculation of standard errors, 2) construction of confidence intervals, and 3) conducting hypothesis testing for numerous types of sample statistics including the mean and standard deviation (Hayes, 2022).

These analyses were selected per the recommendations by Preacher and Hayes (2008) who assert that bootstrapping methods are a superior alternative to traditional analytical methods such as are the causal steps approach (e.g., Baron and Kenny, 1986) and the product-of-coefficients strategy for various reasons. Firstly, bootstrapping is the most useful and powerful method of deriving confidence intervals for total and specific indirect effects under most conditions, particularly with relatively small or non-normal samples (Preacher & Hayes, 2004; Preacher et al., 2008). Secondly, these analyses are more efficient than other methods for testing multiple mediators simultaneously. (Anxiety and stress were highly correlated, thus, were not tested simultaneously in this study). Thirdly, because bootstrapping involves a smaller number of

associated inferential tests, the probability of Type 1 error rate is minimized. Fourth, bootstrapping is easier to understand.

The direct, indirect, total effects of the independent variables on the dependent variable, as well as the 95% bootstrapping confidence interval are reported. The direct effect (path c) examines if the relationship between X (independent) and Y (dependent) variables is direct and not mediated by a third variable. The indirect effect (path a*b) examines the null hypothesis that the indirect relationship between X (independent) and M (mediator), and M (mediator) and Y (dependent) variables is equal to zero. The total effect (path c') is the sum of indirect effect (a*b) and direct (c) effects. Evidence for mediation is demonstrated by 95 per cent confidence intervals, based on 5,000 bootstrap samples. An indirect effect (mediation) is statistically significant if the confidence intervals do not include zero (Preacher & Hayes, 2004, Preacher et al., 2008).

While not ideal, multiple models were used to test mediation for various reasons: 1) anxiety and stress were highly correlated, thus, simultaneous testing of the mediators was not done, 2) Many of the independent variables were highly correlated, and 3) The sample size limited including all independent variables in one model.

Data Management

REDCap is a secure web application for building and managing online surveys (REDCap, n.d.), and was available free of charge through the researcher's supervisors. Using this web application reduced human error while facilitating my uploading of the survey data directly to IBM SPSS Statistics 28.0 for cleaning and analyses. Directly uploading the survey data also reduced the likelihood of data entry errors.

Protection and Confidentiality of Data

The privacy of the respondents was strictly maintained. The data files were encrypted, and the personal computer was password protected and kept in a locked filing cabinet drawer in the home office of the researcher. The data will be stored on the secure drive (Health Research Data Repository) at the University of Alberta, Faculty of Nursing for a period of five years, after which the data will be deleted.

Summary

This chapter provided an overview of the research design, setting and sample. Additionally, the procedures for data collection, analysis and protection of data were described.

Chapter V Results

This chapter presents the results of the analyses conducted to examine the influence of job demands, (i.e., fear of COVID-19, workload), job resources (i.e., managerial support, collegial support, human resources, material resources), and well-being (i.e., anxiety, stress, burnout) on nurses' turnover intentions in The Bahamas during the COVID-19 pandemic. First, the participation is discussed, followed by the results for the demographic and work characteristics, and COVID-19 experience of the study sample. This section continues with the CFA results, Pearson's correlation analysis, and concludes with results from the stepwise multiple linear regression and mediation analyses used to test the study's hypotheses.

Participation Rate

The participation rate for this study is summarized in Appendix L. A minimum sample size of N=100 was required to ensure sufficient power during the statistical analyses if all independent variables were to be retained in regression analyses. Therefore, N=188 or 35% participation rate was the target for this study. Regrettably, the burnout variable had to be dropped from analysis, therefore, a minimum sample of N=100 was adequate to conduct the multiple regression (Green, 1991; Jenkins & Quintana-Ascencio, 2020).

One hundred and eighty-two (182) respondents logged onto RedCap and accessed the survey, for a participation rate of 33.7%. Upon completion of the screening questions, 167 respondents were determined to meet the eligibility criteria. However, 18 respondents logged off and did not participate in the survey. This resulted in 149 respondents completing the survey. Cases with more than 30% missing data were excluded. The remaining usable records N=101, provided adequate power for multiple regression analyses for at least 10 variables per regression (Green, 1991; Jenkins & Quintana-Ascencio, 2020).

Descriptive Statistics

This section provides an overview of demographic characteristics, followed by the work characteristics, and the COVID-19 experiences. Tables 1 – 3 summarize the demographics, work characteristics, and COVID-19 experiences of the study respondents respectively. Table 4 summarizes the descriptive statistics for the major study variables: fear of COVID-19, workload, managerial support, collegial support, human resources, material resources, anxiety, stress and turnover intentions.

Demographics

The respondents were predominantly female (*n*=87, 86.1%) of Black/African descent (*n*= 86, 85.1%) between 23.3 and 61.3 years of age (*M* =38.1, *SD*=10.4). Many were married/common-law (*n*= 44, 43.6%), and most had two or less dependents (*n*=95, 94.1%). Most respondents were Registered Nurses (*n*=78, 77.2%) who had received their basic nursing education in The Bahamas (*n*=89, 88.1%).

Work Characteristics

Respondents in this study were primarily full-time employees (*n*=98, 97.2%) with 11 years (*SD*=9.8, *Range*=4 months - 42 years) and 10 years of organizational tenure (*SD*=9.9, *Range* =4 months - 42 years). Unit tenure ranged from 3 months to 28 years (*M*=5.8, *SD* =6.4). Almost one-third of respondents worked on the surgical units (*n*=28, 26.7%). While some respondents (*n*= 23, 22.8%) reported not working any overtime shifts in the last 12 months, on average respondents worked 5 overtime shifts per week (*SD*=4.1, *Range* = 0 - 11). Respondents reported missing between 0 and 13 shifts over the last 12 months (*M* = 4.6, *SD*=4.8). Job exposure to COVID-19 was the primary reason for absenteeism (*n*=33, 48.5%). Respondents scores for intentions to take a leave of absence within the next 12 months ranged between 1 and 5 (*M*=2.3, *SD* =1.3). Scores for intentions to retire within the next 12 months ranged between 1

and 5 (*M*=1.9, *SD*=1.1). Scores for intentions to retire early due to the COVID-19 pandemic also ranged between 1 and 5 (*M*=2.0, *SD*=1.2). These scores suggest that respondents disagreed that they intended to take a leave of absence, retire, or retire early due to COVID-19.

COVID-19 Experiences

Most respondents reported changes to their primary work unit due to the COVID-19 pandemic (*n*=68, 67.3%). Respondents were asked about the adequacy of hospital-initiated education on the prevention, spread and treatment of COVID-19. Scores ranged between 1 and 5 (*M*=3.3, *SD*=1.1), suggesting that respondents neither agreed nor disagreed that the education was adequate. The average length of time respondents reported caring for patients diagnosed COVID-19 for just over 13 months (*SD*=9.2, *Range* = 0 - 23). Many respondents reported no medical conditions known to increase their risk of contracting the COVID-19 virus (*n*= 49, 48.5%). Most respondents were fully vaccinated (*n*=83, 82.2%).

Major Study Variables

Respondents indicated mixed experiences with the job demands variables. For instance, the range for fear of COVID-19 values was 7 to 35. However, most respondents (*n*=98, 97.2%) mean scores of 17.9 (*SD*=6.1) suggested that they were neutral regarding their fear of COVID-19. Workload scores ranged from 5 – 25. However, on average, respondents (*n* = 98, 97%) indicated experiencing high workloads (*M*=20.9, *SD*=4.5). Job resources i.e., managerial support scores ranged from 5 – 25 (*M*=15.0, *SD*=4.7), and collegial support scores ranged from 3 – 15 (*M*=10.2, *SD*=2.8) suggesting higher availability. Conversely, other job resources, i.e., human resources and material resources were inadequate. On average the human resources scores was8.6 (*SD*=4.8, *Range* = 4-20), and material resources was 4.5(*SD*=2.5, *Range* = 2-10). The range for well-being variables anxiety and stress values were 0-38, and 0-40 respectively.

However, most respondents mean scores for anxiety (M=8.1, SD=9.1) and stress (M=12.1, SD=9.7) indicated normal levels. Regarding organizational turnover intentions within the next 12 months, most respondents (n=100) provided no definitive indication as reflected by the neutral response. Responses ranged between 1 and 5 (M=3.0, SD=1.4).

Table 1

Descriptive Statistics for Demographics of Study Participants (N= 101)

	N	%	*Mean*	*SD*	*Range*	Min	Max
Age	92	91	38.1	10.4	38	23.3	61.3
Sex							
Female	86	85.1					
Male	4	4					
Prefer not to say	1	1					
Race							
Asian	4	4					
African/Black descent	87	86.1					
Mixed race	4	4					
Country of basic nursing education							
Jamaica	1	1					
Nigeria	1	1					
Philippines	4	4					
The Bahamas	89	88.1					
Other	3	3					
Professional license							
Registered Nurse only	78	77.2					
Registered Midwife only	1	1					
Registered Nurse and Registered Midwife	10	9.9					
Trained Clinical Nurse	11	10.9					
Marital status							
Single	42	41.6					
Married/Common-Law	44	43.6					
Separated	2	2					
Divorced	5	5					
Widowed	1	1					
Number of dependents	95		2	1.7	8	0	8

Note. Sample size for each variable is representative of missing data.

Table 2

Descriptive Statistics for Work Characteristics of Study Participants (N=101)

	N	%	*Mean*	*SD*	*Range*	Min	Max
Employment status							
Full-Time (40-hour week)	98	97.2					
Part-Time (< 40-hour week)	2	2					
Primary work unit							
Critical Care Services	17	16.8					
Medical Units	16	15.8					
Surgical Units	27	26.7					
Maternity, Gynecology, Pediatric Wards	15	14.9					
Out-patient Services	17	16.8					
Other	5	5					
Unit tenure (years)	91		5.8	6.4	21.8	0.25	28
Organizational tenure (years)	91		10.3	9.9	41.7	0.33	42
Professional tenure (years)	93		11.4	9.8	41.7	0.33	42
Average # overtime/week x last 12 months	101		5	4.1	11	0	11
Absences x last 12 months	96		4.6	4.8	13	0	13
Reason(s) for absence							
Job-exposure to COVID-19	32	48.5					
Illness other than COVID-19	27	40.9					
Fatigue	26	39.4					
Childcare	11	16.7					
Community-exposure to COVID-19	4	4					
Not applicable	5	7.6					
Intent to take leave within next 12 months	93		2.3	1.3	8	1	5
Intention to retire in next 12 months	98		1.9	1.1	4	1	5
Intention to retire early due to COVID-19	99		2.0	1.2	4	1	5

Note. Sample size for each variable is representative of missing data.

Note. Critical Care - adult and pediatric intensive care units. Medical - Male, Female and Private Medical Wards, and infectious disease units (COVID and non-COVID). Surgical - Male and Female surgical units including Male Orthopedic and Eye Wards, Burn's Unit, and Operating Theatre. Maternity - Ante- and Post- natal, and Labor and Delivery Wards, and Pediatrics Wards excluding pediatric intensive care. Out-Patient Services - all services associated with the Accident and Emergency Department

Table 3

Descriptive Statistics for COVID-19 Experiences of Study Participants (N=101)

	n	%	*Mean*	*SD*	*Range*	Min	Max
Unit change due to COVID-19							
Yes	68	67.3					
No	31	30.7					
Institutional COVID-19 education							
Yes	82	81.2					
No	16	15.8					
COVID-19 education adequacy	82		3.3	1.1	4	1	5
Months providing COVID-19 care	97		13.2	9.2	23	0	23
COVID-19 risk factors							
Obesity	28	27.7					
Lung disease	18	17.8					
Diabetes	15	14.9					
Heart disease	14	13.9					
Cancer	13	12.9					
Chronic kidney disease	9	8.9					
Chronic liver disease	8	7.9					
Other	8	7.9					
Not applicable	49	48.5					
COVID-19 vaccination status							
Fully vaccinated	83	82.2					
Partially vaccinated	13	12.9					
Unvaccinated	2	2					

Note. Sample size for each variable is representative of missing data.

Table 4

Descriptive Statistics for Major Study Variables (N=101)

	n	*Mean*	*SD*	*Range*	Min	Max
Fear COVID-19	98	17.9	6.1	28	7	35
Workload	98	20.9	4.5	20	5	25
Managerial Support	97	15.0	4.7	20	5	25
Human Resources	98	8.6	4.8	16	4	20
Collegial Support	100	10.2	2.8	12	3	15
Material Resources	99	4.5	2.5	8	2	10
Anxiety	100	8.1	9.1	38	0	38
Stress	98	12.1	9.7	40	0	40
Turnover Intention	100	3.0	1.4	4	1	5

Note. Sample size for each variable is representative of missing data.

Factor Analysis

Confirmatory factor analysis was used to verify the factor structure of the scales for fear of COVID-19, workload, managerial support, collegial support, and human resources. The fit indices for the seven-item fear of COVID-19 scale (X^2= 14.8, p = .063, *CFI* = .988, *RMSEA* =.07, *SRMR* = .04) and five-item workload scale (X^2= 7.87, p = .096, *CFI* = .986 *RMSEA* =.08, *SRMR* = .03) indicated good fit. Indices for five-item managerial support scale (X^2= 8.44, p = .077, *CFI* = .979 *RMSEA* = .09, *SRMR* = .06) were acceptable except for the RMSEA, the four item human resources scale (X^2= 0.004, p = .0953, *CFI* = 1, *RMSEA* =0, *SRMR* = 0) indices indicated good fit. Although a minimum of four items is recommended when conducting one-factor CFA (Field, 2014) fit indices were estimated for three-item collegial support scale (X^2= 0, p = .000, *CFI* = 1, *RMSEA* = .08, *SRMR* = 0). Overall indices for the three-item scale indicated mediocre fit. (However, as indicated previously, the reliability for both scales was excellent - Cronbach's alphas .90 and .94 respectively). The fit indices for the seven-item stress scale (X^2= 8.11, p = .883, *CFI* = 1, *RMSEA* = 0, *SRMR* = .07) indicated good fit. Indices for the seven-item anxiety scale (X^2= 10.82, p = .372, *CFI* = .993, *RMSEA* = .02, *SRMR* = .11) also indicated good fit except for SRMR. Artificially high RMSEA or SRMR indices might result if there are insufficient items or if there is redundancy among items in the analyses (Cook et al., 2009). In fact, Kenny et al., (2014) argue to not even compute the RMSEA for models with low degrees of freedom (*df*) since RMSEA has a higher probability of being > 0.5 for such models.

Bivariate Relationships

Pearson correlations were conducted to determine the extent to which pairs of continuous variables were significantly associated. The strength, i.e., weak (0.1-0.3), moderate (> 0.3-0.5), or strong (> 0.5-1.0), and direction (i.e., positive, or negative) of the relationships between the

following study variables: turnover intentions, fear of COVID-19, workload (i.e., job demands), managerial support, human resources, collegial support, material resources (i.e., job resources), anxiety and stress (i.e., well-being) variables. Additionally, continuous variables associated with demographics (age, number of dependents), work (professional, organizational and unit tenure, number of absences, intent to take leave of absence, intent to retire, intent to retire early due to COVID-19), and COVID experience (adequacy of COVID-19 education, months engaged in COVID-19 care) were also included in the correlation analysis (see Table 5). To follow is a summary of the statistically significant associations.

Turnover Intentions Bivariate Relationships

Workload had a positive weak, statistically significant association with turnover intentions (r= .209, p= .05) suggesting that nurses' turnover intentions increase as their workloads increase. Conversely, managerial support had negative, weak statistically significant associations with turnover intentions (r= -.241, p= 0.5), as did human resources (r= -.256, p= .05) suggesting that turnover intentions decrease as managerial support and human resources increase. Age also had a negative, but moderate, statistically significant association with turnover intentions (r= -.322, p= .01) suggesting that turnover intentions decrease as age increases. These findings suggest that younger nurses experiencing high workloads with less human resources and managerial support are more likely to experience turnover intentions.

Intention to take a leave of absence within 12 months had a positive, moderate, statistically significant association with turnover intentions (r= .335, p= .01) suggesting that turnover intentions increase and intentions to take a leave of absence increase in tandem. Other variables such as professional tenure (r= -.229, p= .05), and unit tenure (r= -.20, p= .05) had negative, weak statistically significant associations with turnover intentions, suggesting that

turnover intentions decrease as professional, and unit tenure increase. Conversely, the number of absences within the past 12 months had a positive, weak statistically significant association with turnover intentions (r= .214, p= .05) suggesting that turnover intentions increase as the number of absences increases. These findings suggest that more experienced nurses, who work on units for longer periods, have lower turnover intentions. However, nurses who intend to take a leave of absence, and are absent more frequently also experience higher turnover intentions.

Well-being (Anxiety and Stress) Bivariate Relationships

Fear of COVID-19 and workload had positive, statistically significant associations with anxiety. Fear of COVID-19 had a moderate positive association (r= .445, p= .01), while workload had a positive weak association (r= .234, p= .05), suggesting nurses' anxiety increase as fear of COVID-19 and workload increase. Managerial support (r= -.244, p= .05) and collegial support (r= -.259, p= .01) both had negative, weak, associations with anxiety, suggesting anxiety decreases as managerial and collegial support increase. Other variables had statistically significant associations with anxiety. For instance, as nurses' anxiety increases so does the number of absences (r= .294, p= .01), their intent to take early retirement due to COVID-19 (r= .314, p= .01) as well as their intent to take a leave of absence within 12 months (r= .244, p= .05). Anxiety among nurses also increases in tandem with the number of overtime shifts/week worked (r= .199, p= .05). Conversely, anxiety decreases as professional tenure increases (r= -.263, p= .05), suggesting the nurses with more professional experience report lower anxiety levels. These findings suggest that although more experienced nurses with high levels of fear of COVID-19 and high workload, work more overtime shifts, with less managerial and collegial support, they experience lower levels of anxiety. However, as anxiety increases, absenteeism increases among nurses, and the older more experienced nurses opt to retire early because of COVID-19.

Like anxiety, fear of COVID-19, workload, managerial support, and collegial support were all statistically significantly associated with stress. Fear of COVID-19 (r= .379, p= .01) and workload (r= .314, p= .01) both had a positive, moderate association with stress, suggesting that as these job demands increase, so do stress levels among nurses. Conversely, managerial support (r= -.232, p= .05) and collegial support (r= -.217, p= .05) both had negative, weak associations with stress, suggesting as availability of these job resources increases, nurses stress levels decrease. Other variables had statistically significant associations with stress. For instance, stress decreases as age (r= -.256, p= .05), unit tenure (r= -.240, p= .05), and organizational tenure (r= -.310, p= .01) increase. These findings suggest that older nurses who work on a specific unit or have worked in the organization for longer periods, or who have more professional experience lower levels of stress. Additionally, findings from this study also suggest that as stress increases so does the number of absences (r= .251, p= .05) as well as nurses' intent to take early retirement due to COVID-19 (r= .335, p= .01), inferring that nurses with higher levels of stress are also absence more frequently, and older, more experienced nurses opt to retire early from increasing stress levels associated with COVID-19. Nurse managers should consider absences as an indicator of stress, anxiety, and turnover intention.

Table 5

Pearson's Correlation Coefficients of All Continuous Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1.Fear of COVID																					
2. Workload	.205*																				
3. Manager Support	-0.011	-0.036																			
4. Human Resources	-0.027	-.204*	.555**																		
5. Collegial Support	-0.066	-0.135	.531**	.501**																	
6. Material Resources	-0.062	-.243*	.523**	.799**	.560**																
7. Anxiety	.445**	.234*	-.244*	-0.163	-.259**	-0.179															
8. Stress	.379**	.314**	-.232*	-0.174	-.217*	-0.191	.846**														
9. Turnover Intentions	0.012	.209*	-.241*	-.256*	-0.155	-0.130	0.137	0.118													
10. Overtime Shifts/Week	0.045	0.084	-0.181	-.211*	-0.173	-.198*	.199*	0.149	0.029												
11. Professional Tenure (Months)	-0.020	-.288**	0.145	0.11 7	-0.164	0.057	-.263*	-.310**	-.229*	-0.177											
12. Organizational Tenure (Months)	0.054	-0.130	0.135	-0.009	-0.192	-0.042	-0.192	-.275**	-0.150	-0.135	.940**										
13. Unit Tenure (Months)	0.025	-0.088	0.048	0.089	-0.194	-0.003	-0.138	-.240*	-.207*	0.004	.702**	.710**									
14. Number of Dependents	-0.022	0.108	-0.113	-0.024	-.282**	-0.053	0.096	-0.010	0.019	0.102	0.202	0.183	.246*								
15. COVID Care (Months)	-0.002	0.191	0.011	-0.073	-0.041	-0.016	-0.043	0.007	0.016	.206*	0.020	0.118	0.165	0.005							
16. COVID Education Adequacy	-0.056	-.256*	0.018	-0.005	0.120	0.069	-0.048	-0.057	-0.021	-0.011	0.021	0.044	0.003	-.350**	-0.185						
17. Retire Intentions	0.046	-0.051	0.131	0.012	-0.079	0.101	0.048	0.003	0.164	-0.020	.382**	.434**	0.076	0.083	0.039	0.140					
18. Early Retirement Intentions	.228*	0.028	-0.005	-0.001	-0.179	-0.016	.314**	.335**	0.140	0.007	0.148	0.192	-0.007	0.139	0.029	-0.040	.594**				
19. # Absences	-0.006	0.175	-0.135	-0.166	-0.056	-0.091	.294**	.251*	.214*	-0.067	-.233*	-0.169	-0.202	0.024	-0.003	0.000	0.137	.292**			
20. LOA Intentions	.249*	0.201	0.064	-0.019	-0.190	0.070	.244*	0.189	.335**	-0.034	0.117	0.181	0.038	0.194	0.039	-0.006	.478**	.370**	0.033		
21. Age (in Months)	-0.030	-.260*	0.200	0.197	-0.096	0.159	-0.170	-.256*	-.322**	-0.050	.826**	.782**	.661**	.267*	0.139	0.034	.316**	0.107	-.215*	0.029	

* Correlation is significant at *p*.05. **. Correlation is significant at *p*.01.

Predicting Nurses' Turnover Intention

This section provides an overview of the stepwise multiple linear regressions followed by the mediation results. Tables 6 and 7 summarize the regression analyses, and tables 8 and 9 summarize the mediation analyses. All the study's variables were retained in the regression analyses based on theoretical significance (Spector, 2018).

Hypothesis 1a: High job demands (i.e., fear of COVID-19, workload) are positively related to nurses' intentions to leave the organization.

Hypotheses 1b: Low availability of job resources (i.e., managerial support, human resources, collegial support, material resources) is negatively related to nurses' intentions to leave the organization.

Stepwise multiple linear regression analysis was conducted to determine if fear of COVID-19 and workload, and managerial support, human resources, collegial support, and material resources predicted nurses' turnover intentions. The final regression model that included managerial support (F (1, 86) = 5.73, B = -.25, p= .019) was statistically significant. The adjusted R^2 value indicated that the model explained 5% of the variance of nurses' turnover intentions. However, despite the regression paths for fear of COVID-19 (B = .004, p = .975) and workload (B = .18, p = .088) being in the hypothesized direction (positive), they were statistically insignificant and excluded from the final model. Hypothesis 1a was not empirically supported. Hypothesis 1b was empirically supported. However, despite the regression paths for human resources (B = -.14, p = .255), and collegial support (B = -.06, p = .616) and material resources (B = -.03, p = .820), being in the hypothesized direction (negative), they did not contribute to a statistically significant increase in the model's variance, therefore excluded.

Predicting Nurses' Well-being

Hypothesis 2a: High job demands (i.e., fear of COVID-19, workload) are positively related to nurses' well-being (i.e., anxiety and stress).

Hypothesis 2b: Low availability of job resources (i.e., managerial support, human resources, collegial support, and material resources) is negatively related to nurses' well-being (i.e., anxiety and stress).

Stepwise multiple linear regression analysis was conducted to determine if fear of COVID-19 and workload, and managerial support, human resources, collegial support and material resources predicted higher anxiety among nurses. The final regression model that included fear of COVID-19 and collegial support (F (2, 85) = 14.77, p<.001) was statistically significant. The adjusted R^2 value indicated the model explained 18% of the variance for nurses' anxiety. Fear of COVID-19 (B = .42, p<.001) had a moderate positive, statistically significant association with higher anxiety among nurses. Thus, hypothesis 2a was empirically supported. Despite the regression path for workload (B = .12, p = .255) being in the hypothesized direction (positive), it did not contribute to a statistically significant increase in the variance of the model and was therefore excluded.

Stepwise multiple linear regression analysis was also conducted to determine if fear of COVID-19 and workload, and managerial support, human resources, collegial support, and material resources predicted higher stress among nurses. The final regression model that included fear of COVID-19, workload, and managerial support (F (3, 83) = 8.58, p<.001) was statistically significant. The adjusted R^2 value indicated the model explained 21% of the variance for nurses' stress. Fear of COVID-19 (B = .33, p = .002) had a moderate positive, statistically significant association with higher stress among nurses. Additionally, workload (B = .24, p =

.017) had a weak positive, statistically significant association with nurses' stress. These results also empirically support hypothesis 2a.

Stepwise multiple linear regression analysis was conducted to determine if fear of COVID-19 and workload, and managerial support, human resources, collegial support, and material resources predicted higher anxiety among nurses. The final regression model that included fear of COVID-19 and collegial support (F (2, 85) = 14.77, p<.001) was statistically significant. The adjusted R^2 value indicated the model explained 18% of the variance for nurses' anxiety. Collegial support (B = -.26, p =.007) had a weak negative, statistically significant association with higher stress among nurses. Thus, hypothesis 2b is empirically supported. Despite the regression paths for managerial support (B = -.13, p = .217), human resources (B = -.01, p = .927), and material resources (B = -.01, p = .941) being in the hypothesized direction (negative), they did not contribute to a statistically significant increase in the model's variance and were therefore excluded.

Stepwise multiple linear regression analysis was also conducted to determine if fear of COVID-19 and workload, and managerial support, human resources, collegial support and material resources predicted higher stress among nurses. The final regression model that included fear of COVID-19, workload, and managerial support (F (3, 83) = 8.58, p <.001) was statistically significant. The adjusted R^2 value indicated the model explained 21% of the variance for nurses' stress. Managerial support (B = -.20, p = .039) had a weak negative, statistically significant association with stress among nurses. Thus, hypothesis 2b was empirically supported. The regression paths for human resources (B = -.01, p = .927), collegial support (B = -.09, p = .410), and material resources (B = -.01, p = .952) were also in the hypothesized direction

(negative), however, they did not contribute to a statistically significant increase in the model's variance and were therefore excluded.

Table 6

Regression Statistics for Predictor(s) of Turnover Intention (N=101)

Predictor(s)	Outcome	*B*	*p*	*F*	*df*	*p*	Adjusted R^2
Managerial Support	Turnover Intention	-.25	.019	5.73	1, 86	.019	.05

Table 7

Regression Statistics for Predictors of Well-being (i.e., Anxiety and Stress) (N=101)

Independent Variable(s)	Dependent Variable	*B*	*p*	*F*	*df*	*p*	Adjusted R^2
	Anxiety			14.772	2, 85	<.001	0.18
Fear of COVID-19		.42	<.001				
Collegial Support		-.29	.007				
	Stress			8.579	3, 83	<.001	0.21
Fear of COVID-19		.33	.002				
Workload		.24	.017				
Managerial Support		-.21	.039				

Predicting the Mediating Effect of Well-being

Hayes' (2022) Process via the percentile bootstrapping method was used to determine if well-being represented by anxiety and stress mediated the effects of job demands, represented by fear of COVID-19 and workload, and job resources represented by managerial support, human resources, collegial support, and material resources on nurses' turnover intentions. Unlike the causal steps method for mediation, the bootstrap method does not focus on the statistical significance of the a and b paths. Rather, the emphasis is primarily on the direction and size of the indirect effects. A meditational effect was accepted as statistically significant only if 1) an indirect effect was observed (i.e., indirect effect = path a x path b; a = the effect of job demands and job resources on the mediator of well-being, b = the effect of wellbeing on nurses' turnover intentions) and 2) the 95% CI around the indirect effect from 5000 bootstrap re-samples excluded zero (Preacher & Hayes, 2004).Tables 8 and 9 convey the results of the mediation analyses including the total, direct, and completely standardized indirect effects of the independent variables on the dependent variable, respectively, as well as the 95% bootstrapping confidence intervals for the indirect effect.

Hypothesis 3: Well-being (i.e., anxiety and stress) mediates the effects of job demands (i.e., fear of COVID-19 and workload) and job resources (i.e., managerial support, human resources, collegial support and material resources) on nurses' turnover intentions.

Model 1 included fear of COVID-19 and workload, anxiety, and turnover intentions. The results for path a showed that fear of COVID-19 was a significant predictor of anxiety (B= .62, p= < .001, 95% CI [*0.34*, *0.90*], B = .42), while workload was not (B= .15, p< .001, 95% CI [*-0.10, 0.68*], B= .14). Results for path b showed that while controlling for anxiety (B= .02, p= < .291, 95% CI [*0.02, 0.05*], B= .12), fear of COVID-19 (B= -.02, p= .402, 95% CI [*-0.08, 0.03*],

B= -.10) and workload (B= .06, *p*= .071, 95% CI [-*0.01, 0.90*], *B*= .19) were not statistically significant predictors of turnover intentions. Additionally, results showed that total effect of fear of COVID-19 and workload on turnover intentions was negative and not statistically significant (B= -.01, *p*= .66, 95% CI [*0.04, -0.05*]). Similarly, the direct effect between fear of COVID-19 and workload, and turnover intentions was negative and not statistically significant (B= -.02, *p*= .40, 95% CI [-*0.08, 0.03*]). The indirect effect (i.e., the indirect relationship) between fear of COVID-19 and workload, and turnover intentions mediated by anxiety was positive, but was not statistically significant (B= .01, 95% CI [-*0.01, 0.04*], *B*= .06, 95% CI [-*0.04, 0.17*]).

Model 2 included fear of COVID-19 and workload, stress, and turnover intentions. The results for path a showed that fear of COVID-19 (B= .52, p< .001, 95% CI [0.22, 0.83], *B* = .330), and workload (B= .53, *p*= < .014, 95% CI [0.11, 0.96], *B*= .24) were significant predictors of stress. Results for path b showed that while controlling for stress (B= .01, *p*= .499, 95% CI [-0.07, 0.03], *B*= .09), fear of COVID-19 (B = -.02, *p*= .500, 95% CI [-0.07, 0.03], *B*= -.08) and workload (B= .06, *p*= .087, 95% CI [-0.01, 0.13], *B*= .19) were not statistically significant predictors of turnover intentions. Additionally, results showed that the total effect of fear of COVID-19 and workload on turnover intentions was negative and not statistically significant (B= -.01, *p*= .666, 95% CI [-0.59, 0.38]). Similarly, the direct effect between fear of COVID-19 and workload, and turnover intentions was negative and not statistically significant (B= -.012, *p*= .500, 95% CI [-0.07, 0.03]). The indirect effect (i.e., the indirect relationship) between fear of COVID-19 and workload, and turnover intentions mediated by stress was positive, however, was not statistically significant as the confidence intervals included zero (B= .01, 95%CI [-0.01, 0.03], *B*= .03, 95% CI [-0.04, 0.01]). Results from models 1 and 2 do not

support anxiety and stress as mediators for fear of COVID-19 and workload on nurses' turnover intentions. See table 7.

Model 3 included managerial support, anxiety, and turnover intentions. The results for path a showed that managerial support (B= -.48, *p*= -.017, 95% CI [-0.87,-.09], *B*= -.25) was a significant predictor of anxiety. Results for path b showed that while controlling for anxiety (B= .0, *p*= .393, 95% CI [-0.02, 0.05], *B* = .089), managerial support (B= -.07, *p*= .037, 95%CI[-0.13, 0.00], *B*= -.22) was not a statistically significant predictor of turnover intentions. Additionally, results showed that the total effect of managerial support on turnover intentions was negative and statistically significant (B= -.07, *p*= .019, 95% CI [-0.14, -0.01]). Similarly, the direct effect of managerial support on turnover intentions was negative and statistically significant (B= -.07, *p*= .037, 95% CI [0-.13, -0.00]). The indirect effect (i.e., the indirect relationship) between managerial support and turnover intentions mediated by anxiety was not statistically significant (B= -.01, 95% CI [-0.03, 0.01], *B*= -.02, 95% CI [-0.08, 0.03]).

Model 4 included human resources, anxiety, and turnover intentions. The results for of path a showed that human resources (B= -.32, *p* = .109, 95% CI [-0.71,-0.07], *B*= -.16) was not a significant predictor of anxiety. Results for path b showed that while controlling for anxiety (B= .012, *p*= .287, 95% CI [-0.01, 0.05], *B*= .11), human resources (B= -.07, *p*=.020, 95%CI [-0.13, -0.01], *B*= -.24) was a statistically significant predictor of turnover intentions. Additionally, results showed that the total effect of human resources on turnover intentions was negative and statistically significant (B= -.08, *p*= .012, 95% CI [-0.14, -0.02]). Similarly, the direct effect of human resources on turnover intentions was negative and statistically significant (B= -.07, *p*= .020, 95% CI [-0.13, -0.00]). However, while the indirect effect (i.e., the indirect relationship)

between collegial support and turnover intentions mediated by anxiety was negative, it was not statistically significant (B= -.01, 95% CI [-0.02, 0.01], *B*= -.02, 95% CI [-0.07,0.02]).

Model 5 included collegial support, anxiety, and turnover intentions. The results for path showed that collegial support (B= -.83, *p*= .010, 95% CI [-1.46, 0.20], *B*= -.26) was a significant predictor of anxiety. Results for path b showed that while controlling for anxiety (B= .02, *p*= .344, 95% CI [-0.02, 0.05], *B*= .10), collegial support (B= -.07, *p*= .219, 95% CI [-0.17, 0.04], *B*= -.13) was not a statistically significant predictor of turnover intentions. Additionally, results showed that the total effect of collegial support on turnover intentions was negative, but not statistically significant (B= -.08, *p*= .127, 95% CI [-0.18, 0.02]). Similarly, the direct effect of collegial support on turnover intentions was negative, but not statistically significant (B= -.07, *p*= .219, 95% CI [-0.17, 0.04]). The indirect effect (i.e., the indirect relationship) between collegial support and turnover intentions mediated by anxiety was negative, but statistically insignificant (B= -.01, 95% CI [0.41, 0.01], *B*= -.03, 95% CI [0-.09,0.03).

Model 6 included material resources, anxiety, and turnover intentions. The results for path a showed that material resources (B= -.65, *p*= .078, 95% CI [-1.37, 0.07], *B*= -.18) was not a significant predictor of anxiety. Results for path b showed that while controlling for anxiety (B= .02, *p*= .275, 95% CI [-0.014, 0.050], *B*= .11), material resources (B= -.06, *p*= .293, 95% CI [-0.18, 0.05], *B*= -.11) was not a statistically significant predictor of turnover intentions. Additionally, results showed that the total effect of material resources on turnover intentions was negative and statistically insignificant (B= -.07, *p*= .205, 95% CI [-0.19, 0.04]). Similarly, the direct effect of material resources on turnover intentions was negative and statistically insignificant (B= -.06, *p*= .293, 95% CI [-0.18, 0.05]). The indirect effect (i.e., the indirect relationship) between material resources and turnover intentions mediated by anxiety was also

negative, and statistically insignificant (B= -.01, 95% CI [-0.04, 0.01], *B*= -.020, 95% CI [-0.07, 0.01]). Results of models 3 – 6 do not support anxiety as a mediator of managerial support, human resources, collegial support, and material resources on nurses' turnover intentions.

Model 7 included managerial support, stress, and turnover intentions. The results for path a showed that managerial support (B= -.502, *p*= .022, 95% CI [-0.93,-.07], *B*= -.237) was a significant predictor of stress. Results for path b showed that while controlling for stress (B= .01, *p*= .504, 95% CI [-.02, 0.04], *B*= .070), managerial support (B= -.07, *p* .033, 95% CI [-0.14, -.01], *B*= -.228) was a statistically significant predictor of turnover intentions. Additionally, results showed that the total effect of managerial support on turnover intentions was negative and statistically significant (B= -.076, *p*= .018, 95% CI [-0.14, -0.01]). Similarly, the direct effect of managerial support on turnover intentions was negative and statistically significant (B= -.07, *p*= .033, 95% CI [-0.14, -0.01]). However, while the indirect effect (i.e., the indirect relationship) between managerial support and turnover intentions mediated by stress was negative, it was not statistically significant (B= -.01, 95% CI [-.02, 0.01], *B*= -.02, 95% CI [-0.07, 000.03]).

Model 8 included human resources, stress, and turnover intentions. The results for path a showed that human resources (B= -0.40, *p*= .076, 95% CI [-0.85, 0.04], *B*= -.18) was not a significant predictor of stress. Results for path b showed that while controlling for stress (B= 0.011, *p*= .455, 95% CI [-0.02, .00], *B*= .08), human resources (B= -.08, *p*= .013, 95% CI [-0.149, -0.02], *B*= -.26) was a statistically significant predictor of turnover intentions. Additionally, results showed that the total effect of human resources on turnover intentions was negative and statistically significant (B= -.09, *p*= .008, 95% CI [-0.15, -0.02]). Similarly, the direct effect of human resources on turnover intentions was negative and statistically significant (B= -.08, *p*= .013, 95% CI [-0.15, -0.02]). However, while the indirect effect (i.e., the indirect

relationship) between human resources and turnover intentions mediated by stress was negative, it was not statistically significant (B= .01, 95% CI [-0.02, 0.01], *B*= -.01, 95% CI [-0.08, 0.03]).

Model 9 included collegial support, stress, and turnover intentions. The results for path a showed that collegial support (B= -.76, *p*= .031, 95% CI [-1.456, -0.07], *B* = -.22) was a significant predictor of stress. Results for path b showed that while controlling for stress (B= .01, *p*= .428, 95% CI [-0.02, .04], *B*= .08), collegial support (B= -.07, *p*= .190, 95% CI [-0.18, 0.04], *B*= -.14) was not a statistically significant predictor of turnover intentions. Additionally, results showed that the total effect of collegial support on turnover intentions was negative and statistically insignificant (B= -.08, *p*= .128, 95% CI [0.02, -0.16]). Similarly, the direct effect of collegial support on turnover intentions was negative and statistically insignificant (B= -.07, *p*= .190, 95% CI [-0.18, 0.04). The indirect effect (i.e., the indirect relationship) between collegial support and turnover intentions mediated by stress was also negative, but statistically insignificant (B= .01, 95% CI [-0.04, 0.01], *B*= -.018, 95% CI [-0.07, 0.02]).

Model 10 included material resources, stress, and turnover intentions. The results for path a showed that material resources (B= -.80, *p*= .052, 95% CI [-1.60, 0.01], *B*= -.20) was not a significant predictor of stress. Results for path b showed that while controlling for stress (B= .01, *p*= .389, 95% CI [-0.07, 0.04], *B*= .09), material resources (B= -.07, *p*= .269, 95% CI [-0.19, 0.05], *B*= -.12) was a not statistically significant predictor of turnover intentions. Additionally, results showed that the total effect of material resources on turnover intentions was negative and statistically insignificant (B= -.08, *p*= .192, 95% CI [-0.20, 0.04]). Similarly, the direct effect of material resources on turnover intentions was negative and statistically insignificant (B= -.07, *p*= .0269, 95% CI [-0.19, 0.05]). The indirect effect (i.e., the indirect relationship) between material resources and turnover intentions mediated by stress was also negative, but statistically

insignificant (B= .011, 95% CI [-0.04, 0.01], *B*= -.02, 95% CI [-0.07,0.02]). Results of models 7 – 10 do not support stress as a mediator of managerial support, human resources, collegial support, material resources) on nurses' turnover intentions. Results from the mediation analyses do not support stress and anxiety as mediators of fear of COVID-19, workload, and managerial support, human resources, collegial support, and material resources on nurses' turnover intentions. Thus, hypothesis 3 was not empirically supported. See tables 8 and 9.

Table 8

Mediation Test Results for Job Demands, Well-being and Turnover Intentions

Relationship	*N*	Estimate	*p*	95% Confidence Interval	
				LL	*UL*
Model1: Fear of COVID-19, Workload → Anxiety →Turnover Intentions	94				
Total effect		-.01	.664	0.04	-0.05
Direct effect		-.02	.402	-.075	0.03
Indirect effect		.06[a]		-.036	0.17
Model 2: Fear of COVID-19, Workload → Stress →Turnover Intentions	93				
Total effect		-.01	.666	-.585	0.38
Direct effect		-.09	.500	-.069	0.03
Indirect effect		.03[a]		-.039	0.01

Note. *LL* = Lower Limit, *UL* = Upper Limit. a = completely standardized estimate

Table 9

Mediation Test Results for Job Resources, Well-being, and Turnover Intentions

Relationship	*N*	Estimate	*p*	95% Confidence Interval	
				LL	*UL*
Model 3: Managerial support → Anxiety →Turnover Intentions	95				
Total effect		-.07	.019		
Direct effect		-.07	.037		
Indirect effect		-.02[a]		-0.08	0.03
Model 4: Human resources → Anxiety →Turnover Intentions	96				
Total effect		-.08	.012		
Direct effect		-.07	.020		
Indirect effect		-.02[a]		-0.07	0.02
Model 5: Collegial support→ Anxiety →Turnover Intentions	98				
Total effect		-.08	.127		
Direct effect		-.07	.219		
Indirect effect		-.03[a]		-0.09	0.03
Model 6: Material resources→ Anxiety →Turnover Intentions	97				
Total effect		-.07	.205		
Direct effect		-.06	.293		
Indirect effect		-.02[a]		-0.07	0.01
Model 7: Managerial support → Stress →Turnover Intentions	93				
Total effect		-.08	.018		
Direct effect		-.07	.033		
Indirect effect		-.02[a]		-0.07	0.03
Model 8: Human resources → Stress →Turnover Intentions	94				
Total effect		-.09	.008		
Direct effect		-.08	.013		
Indirect effect		-.01[a]		-0.08	0.03
Model 9: Collegial support → Stress →Turnover Intentions	96				
Total effect		-.08	.128		
Direct effect		-.07	.190		
Indirect effect		-.02[a]		-0.07	0.02
Model 10: Material resources → Stress →Turnover Intentions	95				
Total effect		-.08	.192		
Direct effect		-.07	.269		
Indirect effect		-.02[a]		-0.07	0.02

Note. *LL* = Lower Limit, *UL* = Upper Limit. a = completely standardized estimate

Chapter VI Discussion

The purpose of this study was two-fold: 1) to examine the influence of job demands, job resources and well-being on turnover intentions among nurses in The Bahamas during the COVID-19 pandemic, and 2) identify key predictors of turnover intention among nurses in The Bahamas. This cross sectional, descriptive study using a sample of 101 regulated nurses.

The discussion in this section includes the participation rate, sample size, demographic characteristics, and the bivariate relationships in relation to previous research. The hypothesized relationships between the study's variables will also be discussed. This section concludes with a discussion of the study's strengths, limitations, and implications for future research, nursing practice, and policy.

Participation Rate

The participation rate for this study (33.7%) was lower than those reported in recent studies (78-98%) using Bahamian nurses as the unit of analysis (Duncombe, 2018; Duncombe 2019; Francis et al., 2020**;** Hepburn et al., 2020). This study's participation rate was also lower than those reported (44-49%) in previous studies that examined turnover among Caribbean nurses (Kerr, 2006; Lansiquot et al., 2011). Notably, all these studies were conducted prior to the COVID-19 pandemic. To date, no local or regional post-pandemic studies have been located.

For this study an online survey using RedCap platform was used. Recruitment flyers were posted in the common areas, as well as on the notice board(s) next to nurses' stations. An electronic version of the recruitment flyer was also posted on the Nurses' Association of the Commonwealth of The Bahamas Facebook page and the researcher's personal media platforms (Facebook, LinkedIn, Instagram, WhatsApp). The Bahamas Nurses' Union and the Licensed Practical Nurses' Association also partnered with the researcher to promote the study in their

public forums. Members from the Filipino nursing community were also engaged and asked to partner with distribution efforts. Nurses were encouraged to share the study information and survey link with colleagues. The hospital's research nurse posted study information/recruitment flyers during the first week of data collection. The research nurse drew the attention of nurses present to the study. Respondents were encouraged to access the survey using desktop computers, or mobile devices such as tablets or cell phones. Respondents were also encouraged to refer colleagues to the study information. Following the launch of the online survey, three reminders were posted throughout the hospital and on digital platforms over the three-month data collection period. Follow-up reminders have been found to produce higher participation (Dillman, 2014). Regrettably, despite these efforts, the participation rate was lower than anticipated.

It should be noted that multiple factors may have negatively affected nurses' decision to participate. Nurses on leave such as maternity, vacation, sickness or education were excluded from participating. A noteworthy fact is that each month during the data collection period, on average, close to 30% (149/537) of the study population was absent due to various leaves including sick and maternity leaves (C. Davis, Personal communication, August 26, 2022). Additionally, anecdotal evidence suggests that nurses at the study site respond more favorably when asked to complete physical copies of surveys. However, during the data collection period strict COVID-19 protocols remained in place, prohibiting entry by the researcher or use of physical copies of the survey. Thus, a surrogate, the hospital's research nurse posted study material and acted on the researcher's behalf. Further, at least one other study was being conducted among the nursing population within the data collection period of this study. This could have created a response burden, possibly negatively affecting the nurses' decision to

participate in this study. Nurses could have also been mentally and physically fatigued because of the prolonged professional and personal stressors inherent in navigating a protracted pandemic.

Sample Size

One hundred and eighty-two (182) respondents accessed the online survey. However, cases with more than 30% missing data (*N*=81, 44.5%) were eliminated from analysis. The remaining usable records *N*=101 allowed for a minimum of 10 cases per variable to establish adequate power for multiple regression analysis (Green, 1991; Jenkins & Quintana-Ascencio, 2020). The final sample size of 101 is comparable to those reported in previous studies conducted among nurses working in hospitals in The Bahamas (Duncombe 2018; Hepburn et al., 2020).

Demographics

The unit of measure for this study was the individual nurse. Previous studies conducted among nurses working in acute care hospital setting in The Bahamas were reviewed to determine the representativeness of sample to the population of interest. The sample for this study was primarily female, Bahamian RNs. Nurses' ages ranged from 23.3 years to 61.1 years (*M*= 38.1). These findings are consistent with recent reports indicating RN mean age of 41.7 (Hepburn at al., 2020). Most nurses were married/common-law with two or less dependents, which is comparable to national data (Bahamas Department of Statistics, 2017a; Bahamas Department of Statistics, 2017b; World Bank, 2020). These findings are generalizable to the population of interest, nurses employed in public acute care hospitals in The Bahamas.

Work Characteristics

Data were also collected to examine most of the respondents' work characteristics. Most were employed full-time. On average, the respondents had more than 11 years professional tenure, greater than 10 years organizational tenure, and greater than 5 years unit tenure. These findings are consistent with Neely-Smith et al (2003) who reported nurses' average professional and unit tenure of 12 years and 4 years respectively. More recent literature also found on average nurses' professional tenure of 11 years (Hepburn et al., 2020). Almost one-third of respondents in this study worked on the surgical units and reported working on average 5 over-time shifts per week over the previous year. Nurses also reported missing on average 5 shifts per week over the same time frame, primarily due to job exposure to COVID-19. These findings are comparable to reports of nursing personnel working multiple overtime shifts to fill vacancies left by sick leave associated with COVID-19 infection (Smith, 2022; Thompson, 2021)

Most respondents reported that they were unlikely to take a leave of absence within the next 12 months, had no intention of retiring within the next 12 months; and had no intention of retiring early due to the COVID-19 pandemic. These findings are strikingly different from numerous local and international reports of nurses' intent to take various leaves of absences and retire early, specifically due to COVID-19 (Berlin et al., 2022; Registered Nurses' Association of Ontario, 2021; Smith, 2021). Possible explanations for findings in this study might be the context. For instance, the data in these reports were collected at varying time-points, but all prior to the data collection period of this study (January 4 – April 4, 2022). It is possible that nearly two years into the pandemic, most nurses would have settled into the new normal, and had no desire to take leaves or retire. Additionally, various leaves including retirement often impacts finances, thus, requires considerable pre-planning and could take a number of months to finalize.

Finally, most nurses in this study are under 40 years old, thus, are unlikely to have maximized pension benefits; and concerns around rising inflation and other financial uncertainties post pandemic might lead nurses to continue working as opposed to retiring early (Ní Léime & O'Neill, 2021).

COVID-19 Experiences

COVID-19 experience variables in this study included change of primary work unit, COVID-19 education, number of months caring for patients with COVID-19, COVID-19 risk factors, and vaccination status. Almost 70% of nurses reported changes to their primary unit of work due to the COVID-19 pandemic. Most neither agreed nor disagreed that COVID-19 education was adequate; and most nurses reported caring for patients diagnosed COVID-19 on average 13 months. Almost half of the nurses in this study reported no medical conditions known to increase their risk of contracting the COVID-19 virus, and more than 80% were fully vaccinated. The findings from this study reflect global evidence indicating the mass redeployment of the nursing workforce in an effort to meet rising demands associated with the pandemic (Buchan & Catton, 2020). Understandably, this study differs in that many studies, particularly for studies when data were collected during the peak of the pandemic and prior to the development and rollout of the COVID-19 vaccinations would not have collected data on vaccination status.

Major Study Variables

The major variables for this study included job demands represented by fear of COVID-19 and workload, job resources represented by managerial support, human resources, collegial support, and material resources, and well-being represented by anxiety and stress. Interestingly, despite reporting high workloads, respondents also reported low fear of COVID-19 levels, and

normal anxiety and stress levels. Additionally, respondents generally neither agreed nor disagreed that they intended to leave the organization within the next 12 months. This position of neutrality might be explained by adequate managerial and collegial support reported by respondents.

The findings from this study provide novel and important empirical data since the research questions have never been investigated with nurses in The Bahamas. Thus, a direct comparison to national data could not be made. However, when possible, the variables were examined in relation to regional (i.e., English-speaking Caribbean) data for representativeness. To date, no published post-COVID-19 pandemic data examining this study's variables have been located. However, pre-COVID-19 studies examining turnover among nurses employed in hospitals in the Caribbean also reported high workloads and low availability of human and material resources (Lansiquot et al., 2016). These findings are similar to those from this study and are not surprising since high workloads and limited resources have been long standing issues faced by nurses globally (Halter et al., 2017, Pedrosa et al., 2019, Buchan & Catton, 2020). Contrary to this study's findings, studies among Caribbean nurses found inadequate managerial support precipitated nurses' turnover intentions (Lansiquot et al., 2012; Morrison et al., 2017). Often many of these and other variables conflagrate to act as push factors leading to nurses deciding to leave their jobs. Discrepancies in some of the findings might be attributed to context, i.e., the differences in economics status of the Caribbean countries. For instance, Lanqiuot et al., (2012), Morrison et al., (2017), and Tourigny et al., (2016) conducted studies among nurses employed in Caribbean countries with lower economic statuses than The Bahamas, which could negatively impact availability of resources, and influence nurses' turnover intentions (World Bank, 2020). Additionally, each study examined various variables (such as lateral violence, and

organizational support) as antecedents to turnover intentions, which differed from those examined in this study. Further, higher turnover intentions were noted among younger nurses (i.e., 18-35 years) employed in the Caribbean (Tourigny et al., 2016). The average age for nurses in this study was slightly higher at 38.1 years. The average organizational tenure of the nurses in this study exceeds 5 years, demonstrating a considerable investment to their employer, making it less likely that they will leave (Tourigny et al., 2016; Halter et al., 2017). Finally, it is also plausible that nurses were undecided about their intentions to leave the organization within the next 12 months since preparing for such an eventuality might require more than 12 months as the process could be lengthy (Davis, 2022).

Turnover Intentions Bivariate Relationships

The relationships between turnover intentions and other study variables suggest a few things. Turnover intentions increase when the job demands i.e., workloads are high, but decrease when more job resources i.e., managerial support, and human resources are available and accessible. Often nurse managers, particularly middle managers are tasked with ensuring a work environment perceived as supportive, which includes ensuring that resources such as personnel and materials and equipment are available for nurses to provide quality patient care (Armstrong et al., 2015; Nurmeksela et al., 2021). Hence, it is not unexpected that nurse managers perceived as unsupportive, along with severe staffing shortages have been found to consistently predict nurses' turnover intentions (Khattak et al., 2020; Lansiquot et al., 2012; Littzen-Brown, 2021; Moloney et al., 2018). Findings also suggest that younger, less experienced nurses experience higher turnover intentions than older nurses with more professional experience and longer unit tenure. These findings are consistent with regional and international research that found that demographic characteristics such as age, and organizational factors such as professional tenure,

work experience, workload, and managerial support were factors associated with nurse turnover during the pre- and post-COVID-19 pandemic (Lansiquot et al., 2012; Tolksdorf et al., 2022; Tourigny et al., 2016).

Additionally, findings suggest that turnover intentions also increase as intention to take a leave of absence, and the number of absences increase. This too is consistent with research that identifies increase in absenteeism as withdrawal behavior associated with increasing turnover (Berry et al., 2012; Rubenstein et al., 2018). This was true among nurses working in low-, middle- and high-income countries, particularly with concerns regarding high workloads and limited PPE (Buchan & Catton, 2020; World Bank Group, 2021).

Well-being (Anxiety and Stress) Bivariate Relationships

Anxiety and stress had a positive relationship with fear of COVID-19 and workload, and an inverse relationship with age, and professional tenure. This suggests that anxiety and stress increase in tandem with an increase in these job demands, particularly among younger nurses with less work experience. Well-being also has an inverse relationship with job resources represented by managerial and collegial support, suggesting that as these job resources increase, anxiety and stress decrease. These findings are supported by previous research which also found inverse relationships between age, professional tenure, and well-being (Khattak et al., 2020, Labrague & De los Santos, 2020), as well as positive relationships with job demands such as high-patient ratios with poorer well-being characterized by high anxiety and stress among nurses (Jung et al., 2020; Shreffler et al., 2020). Well-being was also positively associated with other personal and organizational factors. The number of days absent, and intent to take early retirement due to COVID-19, both have positive relationships with anxiety and stress. This suggests that as anxiety and stress increase, well-being is negatively impacted and the number of

absences also increase, as does the likelihood of nurses deciding to retire early because of COVID-19. The number of overtime shifts worked, and intent to take a leave of absence within 12 months have a positive association with anxiety; and organizational tenure, and unit tenure have an inverse association with stress. These findings are in line with previous research which suggests that the increased demands related to the COVID-19 pandemic placed on already challenged health care systems resulted in increased anxiety and stress among nurses. Initial uncertainties and rapidly changing protocols, deployment of unprepared nurses to bolster workforce capacity, mandatory overtime, and COVID-19 infections were a few of the factors that resulted in nurses deteriorating well-being resulting in increased absences, and decisions to take leaves (i.e., maternity) or retire early (Barello et al., 2020; Canadian Nurses Association, 2022; Tujjar & Simonelli, 2020).

Hypothesis Testing

This study investigated the influence of nurses' job demands and job resources on their well-being and in turn, turnover intentions in The Bahamas. It found managerial support (job resources) was a key predictor of nurses' turnover intentions. Nurses who felt their managers were visible and accessible, supported them in their decision-making (even if in conflict with physicians), and advocated for resources, such as adequate staffing, were less likely to leave their jobs during the pandemic. This finding is consistent with literature pre- and during the COVID-19 pandemic that reports managerial ability, leadership, and support of nurses as key predictors of organizational turnover among nurses. When nurses feel supported by their managers, they are more likely to remain in their positions (Hayes et al., 2017), even under extremely challenging conditions.

Fear of COVID-19, workload, human resources, collegial support, or material resources did not predict nurses' turnover intentions. These findings sharply contrast existing pre-pandemic, and COVID-19 empirical evidence (Jiang et al., 2020; Khattak et al., 2020; Tolksdorf et al., 2022) that reports strong, statistically significant relationships between fear of COVID-19 and intentions to leave their jobs. Inadequate staffing, limited equipment and supplies, and lack of collegiality are also well-established predictors of turnover among nurses and continue to predict turnover intentions during the COVID-19 pandemic (Halter et al., 2017; Knowles, 2019; Turnquest, 2017).

Nurses in this study reported high workload, a finding that is well established in the empirical evidence (Coomber et al., 2007; Hayes et al., 2012; Swiger et al., 2016; Falatah 2021). However, the statistically significant relationship observed between workload and turnover intentions in the correlation analysis did not hold in the regression analyses; a finding inconsistent with much of the regional and international research. In a pre-COVID-19 pandemic scoping review, Rolle Sands et al., (2020) found unfavorable work conditions' including high workload was one of the main drivers for Caribbean nurses leaving their jobs, and eventually migrating. Anecdotal evidence suggests that nurse's workload in The Bahamas, increased during the pandemic (Jones 2021a; Jones 2021b; Turnquest 2020). High workloads for nurses are not new, however, workloads increased as workforces already depleted prior to the pandemic were required to meet the demands associated with the COVID-19 pandemic (Lasater et al., 2020). Particularly during the early months of the COVID-19 pandemic, workforces were further depleted due to quarantine, self-isolation and family responsibilities associated with the COVID-19 crisis (Maben & Bridges, 2020; PAHO, 2020) increasing workload of nurses, leading to increased turnover and turnover intentions among nurses (Falatah, 2021). The findings from this

study suggest that while challenging, high workloads provided insufficient impetus for nurses to consider leaving their jobs.

Nurses in this study also reported high collegiality and teamwork among physicians and nurses, but inadequate job resources (competent staffing, sufficient supplies, and equipment) however; neither predicted their turnover intentions. These findings contrast those of Lansiquot et al., (2012) who found that nurses working in Eastern Caribbean hospitals were less likely to leave their jobs when there were respectful, amicable relationships among work colleagues. Respectful, collaborative relationships between nurses, physicians and support staff enhance job satisfaction and reduce turnover (Falatah, 2021; Galletta et al., 2013; Galletta et al., 2016; Zhang et al., 2016). Such relationships are particularly important in difficult circumstances like a pandemic with marked deficits of human and material resources (Cole et al., 2021; Lasater et al., 2020; Mo et al., 2020; Sun et al., 2020). Thus, one might surmise that despite limited resources, nurses in this study felt sufficiently supported by their work colleagues.

Anxiety among nurses in this study was predicted by fear of COVID-19, and collegial support. To date, this researcher has not located pre- or post-COVID-19 studies examining the relationship among job demands, job resources, and well-being among nurses in The Bahamas or the Caribbean. However, the statistically significant relationship between anxiety and fear of COVID-19, and anxiety and collegial support in this study is similar to data collected in other countries. Multiple studies describe nurses' anxiety levels increasing in tandem with fear of COVID-19 (Ahorsu et al., 2020; Labrague& De los Santos, 2020; Nemati et al., 2020). This is understandable, particularly in the early months of the pandemic, when anxiety among frontline nurse rose, as nurses attempted to navigate the myriad of uncertainties regarding the highly infectious novel coronavirus (De los Santos & Labrague, 2021; Jiang et al., 2020; Ohta et al.,

2020). Encouraging nurses to solicit support from their colleagues including physicians and nursing colleagues and other team members is essential for them to cope with anxiety inducing events like a pandemic (Catania et al., 2021; Gasparino et al., 2021; Rosen et al., 2022; Thapa et al., 2022).

In this study, anxiety was not predicted by workload, managerial support, human resources, or material resources. These findings differ from numerous recent studies where nurses consistently report increased anxiety associated with drastic changes to their work content and context, induced by the COVID-19 pandemic (Pappa et al., 2020; Xiao et al., 2020). Many of these changes were characterized by an increase in the volume and intensity of their work (González-Gil et al., 2021). The importance of availability of managerial support, human, and material resources, and nurses' mental well-being is clearly demonstrated, particularly during the COVID-19 pandemic (Catania et al., 2021; Gasparino et al., 2021; Thapa et al., 2022). Anxiety increases when managerial support was perceived as low, and sufficient material resources such as PPE including N95 masks were not readily available (Alshmemri& Ramaiah, 2020; Labrague and De los Santos, 2020), demonstrating the importance of these job resources to support the well-being of nurses.

Like previous research, this study also found that fear of COVID-19 (Arnetz et al., 2020), and increased volume and intensity of work (González-Gil et al., 2021; Pedrosa et al., 2019) predicted higher stress among nurses; conversely, good supervision and leadership (Domini et al., 2021) predicted lower stress among nurses. Receiving support and flexibility from direct managers, particularly related to timely communication around COVID-19-related updates, as well as scheduling, and being more understanding of tardiness/absences related to family

emergencies and childcare during the pandemic (Cho et al., 2021) helps reduce stress among nurses (Domini et al., 2021).

Stress was not predicted by availability of human resources, collegial support, material resources, among nurses in this study. These findings differ from numerous studies documenting the ill effects of a continuing pandemic on the psychological well-being of nurses. Diminished psychological well-being among nurses was further exacerbated by work environments characterized by severe staff shortages and lack of availability of material resources which have continued throughout the pandemic (Sun et al., 2020). Staff shortages often means that nurses care for more patients and work longer shifts, (in some instances under mandatory overtime), resulting in increased stress (Mo et al., 2020). Concerns around limited supplies such as PPE were a major source of rising stress among nurses during the pandemic (Catania et al., 2020; Alshmemri et al., 2020). Co-operative, respectful relationships among colleagues and their supervisors are important factors that help nurses cope in highly stressful circumstances (Ohta et al., 2020).

Anxiety and stress did not mediate the effect of fear of COVID-19, workload, managerial support, human resources, collegial support, nor material resources on nurses' turnover intentions in this study. These findings differ from those observed by other researchers who found that high job demands, and low availability of job resources threatens nurses' psychological and emotional well-being, potentiating their increased turnover intentions (Pedrosa et al., 2019). However, increased availability of adequate staff, supplies and equipment can also buffer the impact of high job demands on well-being (Bakker & Demerouti, 2017; Hirschle & Gondim, 2020; Lesener et al., 2019), thus reducing turnover intentions (Dall'Ora et al., 2020).

Inconsistencies in these findings compared to previous studies might be attributed to several individual, contextual, or methodological factors. For instance, the insignificant relationship between fear of COVID-19 and nurses' turnover intentions might have been attenuated by factors such as demographics, participation in COVID-19 education, the time of data collection, and vaccination status. Previous studies found that nurses employed on a part-time basis, who did not participate in COVID-19-related training, were more likely to report increased fears of COVID-19 (Kim et al., 2020; Labrague & De los Santos, 2020). Education is an important intervention for nurses to better manage their fears related to COVID-19 (Ohta et al., 2020). Most nurses in the current study were full-time employees and reported participating in COVID-19-related education offered by the organization. Further, one could surmise that the content and context of nurses' work would have changed and continues to change over the course of the COVID-19 pandemic. Workloads, while reportedly high, could have resembled pre-pandemic levels to which the nurses had grown accustomed, potentially explaining the lack of a statistically significant relationship between workload and turnover intentions.

The number of months into the pandemic i.e., timing of data collection, as well as the vaccination status of the study respondents should also be carefully considered as these factors predict fear of COVID-19 (Perez-Arce et al., 2021; Karayürek et al., 2021). Multiple delays in the local IRB approval process pushed data collection back by several months. Data for this study was collected between January 4 and April 4, 2022. By this time, much of the uncertainty surrounding work content and context would have been addressed, enabling nurses to better adjust to their "new normal". Nurses in this study had been providing direct care to patients with confirmed or suspected COVID-19 diagnosis for over a year. By mid-February, The Bahamas had flattened its curve of its fourth COVID-19 wave with a marked decrease in new infections

from a peak of 349 cases recorded in one day (9 January); the number of COVID-19 cases admitted to hospital and the ICU had significantly decreased, and 40% of the eligible population (Rolle, 2022) including 83% the respondents in this study were fully vaccinated.

Although the public healthcare system and its healthcare professionals remained strained (nurses reported low availability of staff, supplies and equipment), by January 2022 the Bahamas had sufficiently strengthened its supply chain to ensure sufficient PPE and other equipment; and the COVID-19-related admissions had markedly decreased. Initial calls for more PPE and other equipment during the early months of the pandemic were replaced with nurses' pleas for more staff (Jones, 2021a; Jones, 2021b). In response, the Bahamas government welcomed over forty internationally educated registered nurses to the public acute care hospital. These nurses were deployed to specific units at the study site for an initial period of three months (Public Hospitals Authority, 2022).

The importance of context is essential considering a substantial amount of published empirical data were collected during the first 12 to 18 months of the pandemic (Falatah, 2021) when healthcare systems globally were still struggling to navigating severe shortages of PPE and ventilators, and exacerbated staff shortages (WHO, 2021). Additionally, many of these studies were conducted among nurses working in healthcare institutions in Italy, and Wuhan, China, the epicenter of the COVID-19 pandemic, and other cities in China. Nurses were required to work under extremely challenging conditions with many studies conducted during the acute response to COVID-19 and its related challenges (Falatah, 2021). One could surmise that this context, i.e., the proximity to and sustained engagement with pandemic-related issues exacerbated previous challenges regarding job resources, which in turn impacted the responses of the respondents in these studies.

Notably, there is a paucity of literature regarding turnover among nurses in the Caribbean. A recent literature search by this author yielded only six records, none of which were published during the COVID-19 pandemic. Additionally, factors such as economic status, cultural, and societal norms and beliefs impact one's worldview, interpretation, and reaction to circumstances. Undoubtedly similarities between countries and study populations exist, however, differences between islands in the Caribbean, and elsewhere also exist and could also impact nurses' perceptions regarding specific job demands, job resources, therefore influencing their turnover intentions.

Finally, methodological issues (e.g., variable conceptualization, definition, and measurement) potentially influenced, and could account for discrepancies the study's findings. For instance, in this study turnover intention was measured using a single-item question to measure at 12 months. However, others have measured nurses' turnover intentions from 6 months and up to five years. Measurement included a single item with dichotomous responses (i.e., yes/no), or scales with three or more questions (Aiken et al., Mitchell et al., 2001, Li et al., 2016, Tourigny et al., 2016, Lansiquot et al., 2012). Scales with more items are more precise and reliable when assessing the underlying concepts/constructs that they aim to measure (Gelbach & Brinkworth, 2011).

Variables such as collegial support and stress are operationalized and measured differently (Labrague & De Los Santos, 2020; Khattak et al., 2020). In this study, the PES-collegial nurse-physician scale was utilized to measure collegial support. Dall'Ora et al., (2020) primarily discussed workload in relation to various contributors to workload such as human resources, and Lesener et al., (2019) work reviewed longitudinal data.

In summary, conceptual, methodological, and contextual factors may have influenced the study's findings resulting in some of the inconsistencies noted. The conceptualization of some of the study variables differed. Additionally, there are any numbers of variables or combinations that might be used to assess these concepts. Methodologically the findings may have been affected by the measurements used in this study. Finally, contextual factors such as time of data collection may have also contributed to some of the study findings.

Study Strengths

This study had several strengths including pilot testing of the survey, employing a theory guided research approach, and use of confirmatory factor and reliability analyses. First, the survey instrument was pilot tested for face and content validity using a convenience sample of 10 nurses that were employed at the hospital under study. Pilot testing the survey instrument determined whether the survey items are clear, easily understood, contextually and culturally appropriate and presented in a consistent manner (Abu Hussan et al., 2006). Items requiring clarification were refined prior to data collection in the larger study. Nurses surveyed during pilot testing were excluded from the study to prevent test-retest bias (Polit and Beck, 2014). Second, this study used a theory driven approach. This is significant, particularly, considering the critique of the lack of use of clear identification of a theoretical/conceptual approach in a substantial amount of the Caribbean nursing literature (Rolle Sands et al., 2020). It is well established that the appropriate use of theory/theories clarifies one's understanding of conceptual connections and overall study findings and is particularly useful when the area of inquiry is considered complex (Meleis, 2012). Further, this study is unique in that this will be the first time the JD-R Theory would have been applied in research in The Bahamas and specifically the nursing population.

Study Limitations

Several limitations should be acknowledged. First, the main limitation of cross-sectional studies, such as this one, is their inability to determine causal links (Field, 2013). For example, fear of COVID-19 had a statistically significant relationship with nurses' anxiety and stress levels; however, one cannot conclude that fear of COVID-19 caused nurses' anxiety and stress levels. Second, data collection at only one hospital in the country has its limitations. Although the hospital selected is the largest employer of nurses in the country, this excluded nurses employed in other public and private hospitals. This also excluded nurses employed in other care settings such as public and community health. Thus, the findings from this study can only be applied to a subgroup of the nursing population, limiting their generalizability. Third, using non-probability sampling techniques (i.e., convenience and snowball) could have resulted in self-selection bias. Self-selection bias can occur when survey respondents are allowed to decide entirely for themselves if they wish to participate in a survey (Polit & Beck, 2014). Fourth, although the reliability and validity of one-item scales have been demonstrated (Mathews et al., 2022) use of such scales might also be viewed as a limitation. A multiple-item scale might have been more appropriate for this study. An advantage of multiple-item scales is their ability to be subjected to statistical reliability testing (e.g., Cronbach's alpha). Fifth, the sample size met the minimum requirement to ensure sufficient power to detect statistically significant relationships. However, the small sample size limited the inclusion of additional variables (e.g., control variables) in the regression analyses. Taken together, these limitations may affect generalizability within the country as well as more broadly.

Implications for Research

Future research could address the limitations noted in this study as follows: first, using longitudinal study designs employing probability sampling techniques (e.g., simple random or stratified sampling), would allow for the examination of causal relationships and avoid self-selection biases (Podsakoff et al., 2012). Second, more emphasis should be placed on engaging a larger, more diverse sample including nurses from various public and private hospitals and other care settings, gender diverse nurses, and IENs (who comprise as up to 30% of the nursing workforce in certain care settings) (Parkinson, 2020). A larger sample would allow the addition of control variables to rule out confounders in analyses and improves the likelihood of detecting statistically significant relationships. Additionally, this strategy would improve the generalizability of the results to the Bahamian context, and potentially more broadly. Third, additional theory-supported job demands, and job resources variables could be examined. Examination of additional variables and their association with nurse turnover intentions would extend the application of the JD-R Theory and add to the body of empirical data regarding Bahamian nurses. Future research should carefully consider the variables and instruments used to measure job demands and job resources, as well as the data collection method to reduce measurement error.

Implications for Nursing Practice

Findings from this and other studies suggest that nurses perceive their workloads as high or heavy. Heavy workloads might result from a combination of factors including the number of patients, patient acuity, and availability of human and material resources (Buchan et al., 2022). Attention to this is particularly important as workload exponentially increases during disasters and other catastrophic events such as the ongoing COVID-19 pandemic (Buchan et al., 2022).

While findings from this study indicate that respondents' anxiety and stress scores are indicative of normal levels (Lovibond & Lovibond, 1995), and job resources did not predict nurses' turnover intentions, scores for some of the qualities of the nurses practice environment indicators are concerning. Job resources (i.e., managerial support, human resources, and collegial support were operationalized based on the PES-NWI R (Lake 2002) which measures the quality of the nursing practice environment. A higher score represents greater availability of managerial support, collegial support, and human resources, indicating a favorable nursing practice environment. This study found that human and material resources scores were below the mid-point indicating low availability. Managerial support scores are just about mid-point. These findings might suggest a less than favorable practice environment.

Physical and emotional safety, job satisfaction and a sense of empowerment are characteristics of healthy nursing practice environments (American Association of Nurses, 2018). Establishing and sustaining such environments is essential as impacts for nurses include decreased emotional strain and improved psychological health, increased job satisfaction and retention and positive collegial relationships including nurse-nurse, nurse-physician, and nurse-manager (Wei et al., 2018). Conversely, a poor nursing practice environment negatively affects workplace relationships and nurses' psychological well-being and increases turnover intentions. (Wei et al, 2018). The nurse manager's ability, leadership and support are essential, and are positively associated with nurses' perceptions of their practice environments. As noted throughout this paper, managerial support is consistently identified as a significant decisive determinant for nurses' intent-to-leave or stay (Halter et al., 2017; Khattak et al., 2020).

Creating and maintaining healthy practice environments requires the commitment of nurses, nurse leaders and organizations. Transparent open communication and true collaboration

can be promoted to create a workplace culture where stakeholders recognize and leverage the other's strengths to effect meaningful and sustainable changes such as ensuring adequate human resources. Inherent in creating and maintaining healthy work environments are leaders willing to build collegial relationships to establish meaningful connections with the people throughout their organizations (Munro & Hope, 2020).

Implications for Nursing Policy Development

This study provides some evidence that job demands represented by fear of COVID-19 and workload, and job resources represented by collegial and managerial support potentially directly impact nurses' well-being (i.e., anxiety and stress). Additionally, managerial support was observed as the key predictor of nurses' turnover intentions among nurses in The Bahamas. These findings are consistent with previous research suggesting nurses' well-being is negatively impacted in practice environments characterized by high job demands and limited or inadequate job resources (Murphy et al., 2022; Pedrosa et al., 2019). The ongoing pandemic further exacerbates these ongoing challenges encountered by nurses potentially increasing turnover intentions. Therefore, as decision-makers endeavor to craft a comprehensive, actionable retention policy four key areas of foci are suggested for consideration:

1) Policies aimed at strengthening managerial support. For example, human resource policies regarding hiring of well-prepared nurses for managerial roles, as well as provision of continuing professional development opportunities could help ensure nurse managers are adequately equipped to support their staff. Nursing leadership and support are essential in the promotion of healthy work environments.

2) Strategies to meaningfully support nurses' well-being. These might include bolstering human and material sources, both associated with higher workloads. Decision-makers might start by establishing empirically supported nurse-patient ratios (Buchan et al., 2022). In so doing, potentially decreases the anxiety and stress nurses experience, which potentially increase turnover intentions, particularly during crises.

3) Interventions that consider generational differences and needs. Although not hypothesized in this study, correlation analysis suggests statistically significant associations between age and anxiety, stress, and turnover intentions. Generally older nurses have more professional experience. The progression of time and additional experience provides them with opportunities to build professional relationships, improve skill competencies and bolster their capacity to better manage work stress (Tourigny et al., 2016; Yu et al., 2019). Retaining these keepers of tacit knowledge and organizational wisdom requires creative approaches, such as redesigning of roles and greater attention to work hours and the physical demands of nursing (Fackler, 2019). Well-being support, perhaps through Employee Assistant Programs, in addition to transition-to-practice and mentorship programs are suggestions that help retain younger nursing talent (Tourigny et al., 2016).

4) Comprehensive disaster and pandemic preparedness and management plan. Disaster preparedness and specifically pandemic preparedness must be thoughtfully considered as part of any workforce retention plan. In the last decade there have been three outbreaks of coronaviruses among humans: SARS

coronavirus (2002), MERS coronavirus (2012); and SARS-CoV-2 (2019). These viruses are increasing in frequency, while causing more serious and fatal disease and complications (Abdelrahman et al., 2020). Such outbreaks have led to exacerbation of limited human and material resources, increased workloads and increased nurse turnover intentions and actual turnover (Buchan et al., 2022; Jun et al., 2020). While not observed as predictors of turnover intentions, nurses in this study did report inadequate human and material resources and high workloads. Contingency plans for events that potentiate these circumstances are essential to potentially mitigate turnover among nurses. Plans for forecasting for human and material resources, and clear communication channels, and continuing education for staff help to mitigate stress and anxiety among nurses, potentially mitigating turnover (Buchan et al., 2022, Jun et al., 2020).

High turnover exacerbates staffing shortages, compromises the quality of patient care and negatively affects the remaining nurses (Griffiths et al., 2019; Hayes et al., 2012). Thus, prudent organizations and governments will not merely acknowledge the need to retain nurses but commit to retention policies characterized by actionable short and long terms strategies to maintain a robust nursing workforce.

Summary

This chapter presented the findings of the analyses conducted to examine the influence of job demands, (i.e., fear of COVID-19, workload), job resources (i.e., managerial support, collegial support, human resources, material resources), and well-being (i.e., anxiety, stress) on nurses' organizational turnover intentions in The Bahamas during the COVID-19 pandemic.

Statistical analyses for: missing data, CFA and reliability were presented, followed by descriptive findings about the respondents' demographic and work characteristics, and COVID-19 experience. Results from the stepwise multiple linear regression and bootstrap mediation analyses conducted to test the study's hypotheses concluded the chapter.

Conclusion

This study examined the influence of job demands represented by fear of COVID-19 and workload, job resources represented by managerial support, human resources, collegial support, and material resources, and well-being represented by anxiety and stress on turnover intentions among nurses employed at a public acute care hospital in The Bahamas during the COVID-19 Pandemic. It also identified ~~a~~ key predictor of nurses' turnover intentions. The study identified the availability of managerial support as a key predictor of turnover intentions among nurses. Additionally, this study's findings also suggest that nurses' well-being (i.e., anxiety and stress) is negatively impacted by high job demands (i.e., fear of COVID-19, workload), and low availability of job resources (i.e., collegial support and managerial support). Findings from this study may assist nursing and other administrators with decision-making related to the development of strategies to create healthy practice environments to improve nurses' well-being and retain nurses in acute care settings in The Bahamas. Additionally, this study's findings might also be useful in current ("tridemic" of COVID-19, influenza, and respiratory syncytial virus) (Centers for Disease Control, 2022) and future disaster preparedness and management decision-making. However, further research is suggested to build on findings from this study.

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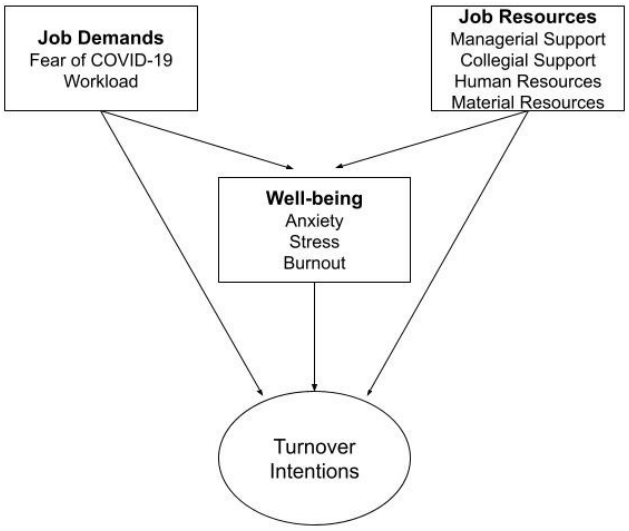
Appendix A. Pandemic Nurses' Turnover Intentions Model



Appendix B. Operational Definitions and Scale Reliability Coefficients

Variables	Measures	Reliability
Job Demands	Fear of COVID Scale (FCV-19S) (Ahorsu et al., 2020) Quantitative Workload Inventory (QWI) (Spector &Jex, 1998).	Cronbach's α = 0.8 - 0.87 (Ahorsu et al., 2020, Labrague et al., 2020). This study's Cronbach's α = 0.90. Cronbach's α = 0.81 - 0.88 (Baka, Ł., &Bazińska, 2016; Idris 2011; Spector & Jex, 1998). This study's Cronbach's α = 0.86.
Job Resources	PES-NWI R (Lake, 2002) subscales: Nurse Manager Ability/Leadership Support Staffing and Resource Adequacy Collegial Nurse-Physician Relations Material resources-items adapted from Lake	Cronbach's α = 0.70- 0.84 (Swiger et al., 2017). This study's Cronbach's α = for managerial support, staffing and resources, and collegial nurse-physician relations were 0.84, 0.92, 0.90 respectively. Pilot study's Cronbach's α = 0.95. Full study's Cronbach's = 0.96.
Well-being	Anxiety and Stress Scale - 21 Items (DASS-21) (Lovibond & Lovibond, 1995): Maslach Burnout Inventory - Human Services Survey (MBS-HSS MP) (Maslach & Jackson, 2016): Emotional Exhaustion subscale	Cronbach's α = 0.74 - 0.89 and 0.78 - 0.89, respectively for the anxiety and stress subscales (Azma et al., 2014; Coker et al., 2018; Musa &Maskat, 2020; Tran et al., 2019). Cronbach's α for this study = 0.86 and 0.89 for anxiety and stress respectively. 0.83 - 0.90 (Aguayo et al., 2011; Calderón-De la Cruz G. A.,& Merino-Soto, 2020; Tourigny et al., 2016)

Appendix C. Study Recruitment Flyer

University of Alberta REB: Pro00012623 Approval date: July 21, 2021

Examining Nurse Turnover

If you are a RN, RM, or TCN providing direct patient care at Princess Margaret Hospital, Nassau, Bahamas, you might be eligible to participate in this study!

- **Nursing officers and other nurses not involved in direct patient care are not eligible to participate**

What does participation involve?

Complete a 15-minute online survey. You will be asked about your job demands, job resources, emotional and psychological well-being, and intentions to leave the organization.

Benefits:

The results of this study will provide evidence to create a sustainable workforce in The Bahamas.

Risks:

It is not anticipated that you will experience psychological or emotional discomfort during the survey. Your identity will remain confidential.

For more information, please contact:

Principal Investigator: Shamel Rolle (Sands), RN, MSN (Ed)

Email: shamel@ualberta.ca

To participate access the study survey at https://redcap.link/nurseturnover

Ministry of Health Research Oversight System (MROS) MROS/211365/QQC/Approved. Approval date: November 29, 2021

Appendix D. Title: Factors Influencing Nurses' Organizational Turnover Intentions in The Bahamas During the COVID-19 Pandemic Study Information/ Consent

Study Title: Factors Influencing Nurses' Organizational Turnover Intentions in The Bahamas During the COVID-19 Pandemic

Student Co-Investigator: Shamel Rolle Sands, RN MSN (Ed.)
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Invitation to Participate: My name is Shamel Rolle (Sands) and I am enrolled in the doctoral program in the Faculty of Nursing, University of Alberta. I am conducting this research study as a partial requirement to satisfy the requirements of my program of study. I am inviting you to participate in the research study. You are being asked to participate in this study because you are a Registered Nurse, Registered Midwife, or Trained Clinical Nurse, employed in the Princess Margaret Hospital. Please note that this study is being conducted independently from the organization with which you are employed.

Purpose of Study: The purpose of this study is to: 1) examine the influence of job demands, job resources, and well-being on nurses' organizational turnover intentions in The Bahamas during the COVID-19 pandemic, and 2) identify key predictors of nurses' turnover intentions.

Inclusion Criteria: Government employed Registered Nurses, Registered Midwives, and Trained Clinical Nurses working in direct patient care at the Princess Margaret Hospital are invited to participate. Nursing Officers and other nurses not involved in direct patient care and/or nurses on leaves (e.g., study, maternity, sick) are not eligible to participate.

The Survey: You will be asked to provide demographic information e.g., marital status and organizational tenure. You will also be asked about your job demands such as workload, the availability of human and material resources to provide quality care, your psychological well-being, and intentions to leave your current job and the nursing profession. The survey should take approximately 15 minutes.

Risks: It is not anticipated that you will experience psychological or emotional discomfort during the survey, however, in the event that you do, I have provided the contact and resource information for counselling services at your organization. Employee Health Services may be

contacted at 242-322-2861 ext. 2709 or 242-502-7874. Please also be aware that you do not need to answer questions that make you uncomfortable or that you do not want to answer.

Benefits: I do not anticipate that you will benefit directly by taking part in this study. However, your participation may benefit you indirectly. I hope the results of this study will provide foundational evidence needed by policy and decision makers on which to base the development of sustainable strategies (i.e., policies, programs and services) to mitigate nurse turnover in The Bahamas. For this reason, I am committed to making the results of our study known to key policy and decision-makers so that such changes can be initiated.

Confidentiality: The information that you will share will be used solely for the purposes of this research. The only people who will have access to the research data are myself, and the members of my doctoral committee. We will not collect or use internet protocol (IP) addresses or other information which could link your participation to your computer or electronic device.

Anonymity: There is no identifying information that will link you to your particular dataset and you will in no way be identified in any written publication resulting from the study. In an effort to maintain confidentiality, respondents will be identified using respondent codes that will be randomly assigned by the survey program, RedCap. In order to minimize the risk of security breaches and to help ensure your confidentiality, we recommend that you complete the survey in a secluded space, and use standard safety measures such as signing out of your account, closing your browser and closing your screen or device when you are no longer using them and when you have completed the survey.

Data Storage: Electronic data and documents will be stored securely in a secure platform, housed at the University of Alberta for five years. After five years the data will be permanently deleted from the platform. Voluntary Participation: You are under no obligation to participate. If you choose to participate, you may refuse to answer any question that you do not want to answer. Should you choose to withdraw midway through the electronic survey simply close the link and no responses will be included. You indicate your consent to participate in the study by clicking 'Yes' in response to the statement "I consent to participate in this study', and submitting the survey. Because I cannot link your responses to your identity, neither you nor I will be able to withdraw your data from the study once it has been submitted.

Research Results: The results from this research study will be disseminated publicly. Methods for dissemination may include publishing in a peer-reviewed journal, uploading findings to a publicly available database, posting to a website, presenting at a conference, or sharing with nurses and other stakeholders during a community event. Main findings and policy recommendations will be shared with the hospital in a two to three page executive summary. Only aggregate data will be shared, so it will not be possible to identify individuals.

Questions?
If you have any questions or require more information about the study itself, you may contact Shamel Rolle at shamel@alberta.ca. Alternatively, you may contact Dr. Vera Caine at vera.caine@ualberta.ca or Dr. Chrsitine Covell at christine.covell@ualberta.ca.

If you have any questions regarding your rights as a research participant, you may contact the Research Ethics Board 2 at reoffice@ualberta.ca or 780-492-2615. This office has no affiliation with the study investigator.

Consent: By clicking 'Yes' in response to the statement "I consent to participate in this study', and submitting the survey, you acknowledge that your participation in the study is voluntary, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason until the survey has been submitted. By agreeing to participate in the study, you are not waiving your legal rights or releasing the investigator from her legal and professional responsibilities.

Appendix E. Factors Influencing Nurses' Organizational Turnover Intentions in The Bahamas During the COVID-19 Pandemic Study Survey

Section 1: Eligibility

A. Have you completed this survey before?
Yes →To end of survey
No →To B

B. Are you currently employed in the Princess Margaret Hospital?
Yes →To C
No →To end of survey

C. Are you a registered nurse, trained clinical nurse or registered midwife?
Yes →To Section 2:
No →To end of survey

Section: 2 Job Demands

1. Please check the box that you feel best reflects your **fear of the Coronavirus (COVID-19)**.

	1 Strongly disagree	**2** Disagree	**3** Neither agree or disagree	**4** Agree	**5** Strongly agree
I am most afraid of Corona					
It makes me uncomfortable to think about Corona					
My hands become clammy when I think about Corona					
I am afraid of losing my life because of Corona					
When I watch news and stories about Corona on social media, I become nervous or anxious.					
I cannot sleep because I'm worrying about getting Corona.					
My heart races or palpitates when I					

think about getting Corona.					

2. Please read each statement carefully. Check the box you feel **best reflectshow often** this happens. Please answer all questions.

How Often	**1** less than one per month or never	**2** once or twice per month	**3** once or twice per week	**4** once or twice per day	**5** several times per day
How often does your job require you to work fast?					
How often does your job require you to work very hard?					
How often does your job leave you with little time to get things done?					
How often is there a great deal to be done?					
How often do you have to do more work than you can do well?					

Section 3: Job Resources

3. Please check the box that you feel best reflects the extent to which each statement is **present in your current practice environment**.

	1 Strongly disagree	**2** Disagree	**3** Neither agree or disagree	**4** Agree	**5** Strongly agree
A nurse manager or immediate supervisor who is a good manager and					

leader					
A nurse manager who backs up the nursing staff in decision making, even if conflict is with a Doctor					
A senior nursing administrator who is highly visible and accessible to staff					
Supervisors use mistakes as learning opportunities, not criticism					
A supervisory staff that is supportive of the nurses					
Administration who listens and responds to employee concerns					
Praise and recognition for a job well done					
Nursing administrators consult with staff on daily problems and procedures					
Enough staff to get work done					
Enough registered nurses on staff to provide quality patient care					
Adequate support services allow me to spend time with my patients.					
Enough time and opportunity to discuss patient care problems with other nurses					
Working with nurses who are clinically competent					
Doctors and nurses have good working relationships					
A lot of teamwork between nurses and doctors					
Collaboration between nurses and doctors					
Adequate equipment to get work done					

Enough medical supplies to provide quality patient care					

Section 4: Well-being

4. Please read each statement and indicate how much the statement applied to you **over the past week.** There are no right or wrong answers. Do not spend too much time on any statement.

	1 NEVER Did not apply to me at all	2 SOMETIMES Applied to me to some degree, or some of the time	3 OFTEN Applied to me to a considerable degree, or a good part of time	4 ALMOST ALWAYS Applied to me very much, or most of the time
I was aware of dryness of my mouth				
I found it hard to wind down				
I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)				
I tended to over-react to situations				
I experienced trembling (eg, in the hands)				
I felt that I was using a lot of nervous energy				
I was worried about situations in which I might panic and make a fool of myself				

I found myself getting agitated				
I felt I was close to panic				
I found it difficult to relax				
I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)				
I was intolerant of anything that kept me from getting on with what I was doing				
I felt scared without any good reason				

5. Please indicate **how often** you experience each of the following statements.

	1 A few times a year	2 A few times a month	3 A few times a week	4 Several times a week	5 Everyday
I feel emotionally drained from my work					
I feel used up at t the end of the workday					
I feel fatigued when I get up in the morning and have to face another day on the job					
Working with people all day is a strain for me					
I feel burnt out from my work					
I feel frustrated by my job					

I feel I am working too hard on my job					
Working with people directly puts too much stress on me					
I feel like I am at the end of my rope					

Section 5: Turnover Intentions

6. Please check the box that you feel reflects the extent to which you agree or disagree with the following statement.

	1 Strongly disagree	**2** Disagree	**3** Neither agree or disagree	**4** Agree	**5** Strongly agree
I intend to leave the **hospital** in the next **12 months**					

Section: 6 Demographics

7. What is your current employment status?

   Full-time (40-hour week)
   Part-time (less than 40-hour week)

8. On average, how many **overtime** shifts have you worked **per month over the past 12 months?**

   _____

9. In what area do you primarily work? Please choose **one category that best reflects the area where you currently work.**

   In-Patient services:

   Critical Care Services
   - Intensive Care Unit
   - Neonatal Intensive Care Unit
   - Special Care Baby Unit

   Medical Units
   - Male, Female and Private Medical Wards

- Infectious Disease Units (COVID and non-COVID)
- Dialysis In-patient and Out-patient services

Surgical Units
- Male and Female Surgical Wards
- Male Orthopedic ward
- Eye Ward
- Burn's Unit
- Operating Theatre

Maternity and Obstetrics, and Gynecology
- Maternity Wards (Post-Natal, Ante-Natal, Labour and Delivery)
- Gynecology Ward
- Children's Ward

Our-Patient Services
- Accident and Emergency Department
- Specialty Clinics

Other, please specify _____

10. Has your **primary area of work changed due to the COVID-19 pandemic?**

    Yes
    No

11. What type of permanent nursing license do you have? **Please select one that applies.**

    Registered Nurse
    Registered Midwife
    Registered Nurse/Registered Midwife
    Trained Clinical Nurse

12. How long have you been employed **as a licensed/enrolled nurse**?

    _____ Years _____ Months

13. How long have you been **working for your current employer**?

    _____ Years _____ Months

14. How long have you been working **on your current unit**?

    _____ Years _____ Months

15. In which country did you receive your **basic nursing education**?

Barbados
Jamaica
Nigeria
Philippines
The Bahamas
Other, please specify _____

16. What is your marital status?

    Single
    Married/Common-Law
    Separated
    Divorced
    Widowed

17. How many relatives/others financial or physical support are you responsible for?

    _____

18. Do you have one or more medical conditions known to increase your risk of contracting the coronavirus that causes COVID-19? **Please select all that apply**.

    Lung disease
    Heart disease
    Diabetes
    Obesity
    Cancer
    Chronic liver disease
    Chronic kidney disease
    Other - please indicate _____
    Not applicable

19. What is your COVID-19 vaccination status?

    Fully immunized (i.e., received a single-dose vaccine, or both doses of two-dose)
    Partially immunized (i.e., received one dose of a two-dose vaccine)
    Unvaccinated (i.e., yet to receive any doses of a COVID-19 vaccine)

20. For how many months have you been engaged in direct care of patients suspected of/diagnosed with COVID-19?

    _____

21. Did you participate in hospital-initiated education on the prevention, spread and treatment of COVID-19?

Yes →To question 22
No →To question 23

22. Please check the box that you feel best reflects the extent to which you disagree or agree with the following statement.

	1 Strongly disagree	**2** Disagree	**3** Neither agree or disagree	**4** Agree	**5** Strongly agree
The education on the prevention, spread and treatment of COVID-19 offered by the hospital is adequate.					

23. Please check the box that you feel best reflects the extent to which you disagree or agree with the following statements.

	1 Strongly disagree	**2** Disagree	**3** Neither agree or disagree	**4** Agree	**5** Strongly agree
I intend to retire within the next twelve months					
I intend to retire earlier than planned because of the COVID-19 pandemic					

24. On average, how many shifts per month have you been absent over the past 12 months?
_____

25. What was the reason(s) for your absence? **Please select all that apply.**

Job exposure to COVID-19
Community exposure to COVID-19
Illness other than COVID-19
Childcare
Fatigue
Other. Please specify: _____
Not applicable

26. Please check the box that you feel reflects the extent to which you agree or disagree with the following statements. Please answer all of the questions.

	1 Strongly disagree	**2** Disagree	**3** Neither agree or disagree	**4** Agree	**5** Strongly agree
I have considered taking a leave of absence within the next 12 months					
It is likely that I will take a leave of absence within the next 12 months					

Selection of Strongly disagree, disagree or neither agree or disagree →To question 28
Selection of Strongly agree, or agree →To question 27

27. What will be the reason for your leave of **absence within the next twelve months?**

Personal leave
Sick leave
Maternity leave
Study leave
Other, please specify _____

28. Which of the following best describes the race with which you identify?

Asian
Black/African descent
White/European descent
Mixed, please specify _____
Other, please specify _____

29. Are you:

Female
Male
Prefer not to answer
Other, please specify _____

30. Please state your age
_____ years _____ months

Appendix F. Factors Influencing Nurses' Turnover Intentions in The Bahamas During the COVID-19 Pandemic Study Reminder 1

University of Alberta Letterhead

Date

Dear PMH Nurses,

One week ago, you were invited to participate in an online survey about factors influencing nurses' turnover intentions during the COVID-19 pandemic. If you have already completed the survey, please accept our sincere thanks. If not, we invite you to please do so at your earliest convenience.

I am especially grateful for your help because it is only by asking nurses that we will be able to understand the main factors influencing nurse turnover intentions during a pandemic. Findings from this study will be used to provide recommendations to nursing and organizational leadership that might be useful for future workforce planning during epidemic or other disasters.

The survey may be accessed using the following URL (insert URL). If you have any questions, please email me at shamel@ualberta.ca. You may also email Dr. Vera Caine at vera.caine@ualberta.ca or Dr. Christine Covell at christine.covell@ualberta.ca.

Sincerely,

Student Co-Investigator: Shamel Rolle Sands, RN MSN (Ed.)
5- Edmonton Clinic Health Academy
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Principal Investigators/Supervisors:
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Appendix G. Factors Influencing Nurses' Turnover Intentions in The Bahamas During the COVID-19 Pandemic Study Reminder 2

University of Alberta Letterhead

Date

Dear PMH Nurses,

Three weeks ago, you were invited to participate in an online survey about factors influencing nurses' turnover intentions during the COVID-19 pandemic. If you have already completed the survey, please accept our sincere thanks. If not, we invite you to please do so at your earliest convenience.

I am especially grateful for your help because it is only by asking nurses that we will be able to understand the main factors influencing nurse turnover intentions during a pandemic. Findings from this study will be used to provide recommendations to nursing and organizational leadership that might be useful for future workforce planning during epidemic or other disasters.

The survey may be accessed using the following URL (insert URL). If you have any questions, please email me at shamel@ualberta.ca. You may also email Dr. Vera Caine at vera.caine @ualberta.ca or Dr. Christine Covell at christine.covell@ualberta.ca.

Sincerely,

Student Investigator: Shamel Rolle Sands, RN MSN (Ed.)
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Appendix H. Factors Influencing Nurses' Organizational Turnover Intentions in The Bahamas During the COVID-19 Pandemic Study Reminder 3- Final

University of Alberta Letterhead

Date

Dear PMH Nurses,

During the last two months we have sent you several communications about a research study we are conducting. Its purpose is to determine factors influencing nurses' organizational turnover intentions during the COVID-19 pandemic.

I am sending this final contact to remind you to complete the online survey at your earliest convenience if you have not yet done so.

I also want to assure you that your participation in this study is voluntary, and your responses to the survey will be kept confidential. We appreciate your willingness to consider our request.

The survey may be accessed using the following URL. If you have any questions, please email me at shamel@ualberta.ca. You may also email Dr. Vera Caine at vera.caine @ualberta.ca or Dr. Christine Covell at christine.covell@ualberta.ca.

Thank you in advance for considering our request.

Sincerely,

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Appendix I. Study Participation Rate