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Where have all the surgical nurses gone? Staffing Shortages in Surgical Departments Post COVID-19 Shutdowns

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WHERE HAVE ALL THE SURGICAL NURSES GONE? STAFFING SHORTAGES IN SURGICAL DEPARTMENTS POST COVID-19 SHUTDOWNS

by

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ABSTRACT

March 2020 changed the healthcare field entirely. When the COVID-19 pandemic swept through the United States in early 2020, it was recommended that surgical departments nationwide shutdown altogether or at least decrease their workloads to exclusively emergent procedures. This step was taken both to save surgical equipment for more critical patients and to offload those staff members from surgical departments to more critical areas in the hospital systems.

This exploratory study was completed to investigate the impact of COVID-19 surgical department shutdowns on current surgical staffing. This research explored different factors such as health insurance availability, childcare availability, shift change, and intrinsic motivation to determine the effect these factors had on surgical registered nurses' (RN's) decisions regarding job displacement status immediately post-COVID-19 surgical department shutdowns.

The theoretical framework influencing this research was the self-determination theory, and thus, the research utilized the Intrinsic Motivation Inventory to determine participants' feelings toward their experiences and decisions regarding job displacement. This study incorporated a sample of surgical nurses (N=190) recruited via snowball sampling and was conducted using Qualtrics®. This survey utilized a combination of a Likert-scale survey created by the researcher, the Surgical Nursing Job Displacement Survey, the Intrinsic Motivation Inventory, and a demographic questionnaire. Chi-square analyses were completed to determine the relationship between the outcome variable (return to a surgical department) and the predictor variables (health insurance availability, childcare availability, intrinsic motivation, and shift change). Analyses showed no

significant relationship between any variables studied. These results support the need for further future research regarding surgical nursing staffing shortages.

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DEDICATION

To my wonderful husband and best friend, Stuart Neal, thank you for supporting and loving me, even through the hard days. Thanks for allowing me the opportunity to further my education and for empowering me to succeed on this journey. To our amazing children, Autumn and Judah, thank you for everything. I chose to do this for you. I hope that I am setting a good example for you. I hope that you are always following your dreams and reaching for the stars.

"All our dreams can come true if we have the courage to pursue them." -Walt Disney

TABLE OF CONTENTS

ABSTRACT ii

ACKNOWLEDGMENTS iv

DEDICATION v

LIST OF TABLES ix

LIST OF ILLUSTRATIONS x

LIST OF ABBREVIATIONS xi

CHAPTER I - INTRODUCTION 1

Problem Statement 2

Research Questions 4

Purpose 5

Theoretical Framework 5

Operational Definitions 7

Self-Determination Theory 7

Registered Nurse 8

Surgery Staff 8

Demographic Variables 11

Assumptions and Limitations 12

Significance 12

Summary 13

CHAPTER II – REVIEW OF LITERATURE 14
Introduction 14
Search Criteria 14
COVID-19 Effect on Healthcare Staffing 14
Engagement of Staff 15
Summary 18
CHAPTER III - METHODOLOGY 19
Introduction 19
Research Design 19
Role of Researcher 21
Setting and Sample 21
Setting 21
Sample 22
Instrumentation and Materials 23
Preparation of Data for Analysis 25
Data Analysis 26
Summary 28
CHAPTER IV – RESULTS 29
Introduction 29
Results 31

Demographic Data 31
Descriptive Findings 31
Analysis 39
Additional Factors 42
Limitations 43
Summary 44
CHAPTER V – DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS 46
Interpretation of Findings 46
Surgical Staff Motivation and Engagement Post COVID-19 46
Recommendations for Surgical RN Staffing and Future Research 47
Conclusion 48
APPENDIX A – Surgical Registered Nurse Job Displacement Survey 50
APPENDIX B - Intrinsic Motivation Perceived Choice Subscale 56
APPENDIX C Demographic Questionnaire 57
APPENDIX D – IRB Approval Letter 59
APPENDIX E – Email Communication for Survey Distribution and Recruitment 60
REFERENCES 61

LIST OF TABLES

Table 1 Demographic Variables and Operational Definitions..... 11

Table 2 Demographic Variables and Data Type..... 20

Table 3 Data Analysis..... 27

Table 4 Descriptive Findings of Demographic Variables..... 34

LIST OF ILLUSTRATIONS

Figure 1. Power Analysis. 30

Figure 2. Role of Participants in Surgery in March 2020 by Number of Roles 37

Figure 3. Role of Participants in Surgery in March 2020 by Role 38

Figure 4. Participant Job Displacement Status in March 2020 38

Figure 5. Geographical Location of Participants in March 2020 39

LIST OF ABBREVIATIONS

AORN	Association of Operating Room Nurses
BSN	Bachelor of Science in Nursing
CDC	Centers for Disease Control and Prevention
CMS	Centers for Medicare and Medicaid Services
COVID-19	SARS-CoV-2; Coronavirus
CRNA	Certified Registered Nurse Anesthetist
ENT	Ear, Nose, and Throat
IRB	Institutional Review Board
NCSBN	National Council of State Boards of Nursing
RN	Registered Nurse
RNFA	Registered Nurse First Assist
SDT	Self-Determination Theory
SPSS®	Statistical Package for the Social Sciences

CHAPTER I - INTRODUCTION

America is facing a critical challenge, often referred to as the "The Great Resignation of 2021" (Fuller & Kerr, 2022). While this disruption to the labor force is causing difficulties nationwide, the healthcare sector has one of the highest numbers of open positions (Ferguson, 2022). Post-COVID shutdowns, hospitals nationwide have faced staffing shortages. Due to these shortages, many hospitals had to scale back or cut services offered to patients (Ellison, 2022). According to Cleveland-based University Hospitals, hospitals in Bedford, Ohio, and Richmond Heights, Ohio ended all inpatient surgical services on August 12, 2022, due to critical staffing shortages. South Lincoln Medical Center in Kemmerer, Wyoming had to close its emergency surgical services on June 1, 2022. This closure was attributed to critical staffing shortages by Michelle Pollard, the President of the South Lincoln Hospital District Board of Trustees (Dance, 2022).

An initial review of the literature indicates there are significant gaps regarding surgical nurses during the COVID-19 pandemic. However, the amount of current literature available about surgical nurses' reactions to the COVID-19 pandemic is insufficient. Nurses have struggled both physically and emotionally under the weight of the COVID-19 pandemic. Current literature suggests that there is a large nursing shortage due to anxiety, tension, and harmful effects on their mental health due to the pandemic (Courson et al., 2022). This research by Coursen et al (2022) indicated that understanding the mental needs of nurses throughout the pandemic for retention is critical.

Many other researchers have noted that nurses are leaving the healthcare profession or retiring early. According to Bourgalt (2022), nurses are leaving the

profession angry and fearful due to inadequate staffing and poor workplace environments. Bourgault (2022) declares inadequate staffing is due to hospitals attempting to cut costs. Lockhart (2019) has projected that global healthcare staffing costs will reach $47.8 billion by 2026. Staffing shortages due to the COVID-19 pandemic have already cost hospitals an estimated $24 billion (Yang & Mason, 2022). Without a change to the current retention of nurses, the healthcare field will experience a severe shortage and be unable to meet the growing needs of the population.

Problem Statement

While the COVID-19 pandemic affected all employed in the healthcare field, the personnel of the surgical departments across the United States was significantly impacted. On March 18, 2020, the Centers for Medicare and Medicaid Services (CMS) declared that all elective surgeries, and non-essential medical, surgical, and dental procedures be postponed for an unknown amount of time due to the COVID-19 outbreak. This step was taken to preserve any medical equipment, including ventilators used in operating rooms, and to potentially deploy those healthcare workers to other needed departments throughout the hospital systems. While this action was recommended by CMS, each state- even each hospital- could decide how much and what cases to postpone, and what to continue. However, most states abided by CMS recommendations, and many surgical departments were shutdown nationwide for an unknown length of time. This shutdown meant that the staff employed in those departments (i.e., preoperative, perioperative, and postoperative units) were displaced from their jobs. Many of those nurses were furloughed without pay for an undetermined amount of time while others were simply utilized in other departments in the hospital, both voluntarily and by force.

Surgical departments are the financial backbone of the hospital system. Without a steady schedule of surgical procedures, hospitals can lose high volumes of revenue. CHA Hollywood Presbyterian Medical Center in California lost $120 million in three months alone due to a significant decrease in census in outpatient surgery as well as the emergency department and inpatient units (Linnington, 2022). Decreases in the patient census are mainly due to staffing shortages in departments such as surgery.

Surgical nursing is considered critical care, so many surgical nurses were displaced to either emergency departments (EDs) or intensive care units (ICUs). This displacement had a significant impact on surgical staffers' psychological and emotional well-being. According to Karampelias et al (2020), the surgical nurses deployed to work in the emergency departments exhibited symptoms of fear, dejection, insomnia, apprehension, and distress. These adverse sentiments, paired with the fear of contracting COVID-19, affected individual performances and patient care outcomes (Karampelias et al., 2020). Being in those stressful situations could have resulted in those surgical registered nurses (RNs) leaving health care altogether.

These resignations, along with surgical RNs being displaced throughout the hospital system, have caused a large staffing shortage in surgical departments post-COVID-19. Surgical procedure volume has returned to mostly normal throughout the nation. However, many operating room administrators have reported a monumental loss of staff due to the pandemic, with the percentage of open full-time equivalent (FTE) surgical RN positions increasing by 58% from the previous year (Saver, 2022).

Staffing shortages in surgical departments are due, in part, to a few things. Surgery is a highly technical specialty, requiring much training and education for new

staff members. The Association of Operating Room Nurses recommends that orientation for a new nurse in the operating room should be at least six months, ideally one year (Association of Operative Room Registered Nurses [AORN], 2018). This extended training period limits hospitals' ability to increase surgical procedures quickly, even if they can recruit new nurses to fill the staffing shortages. Teamwork is key in surgical suite, and it is crucial to retain experienced nurses in the surgical environment. Surgical nurses must have specialized knowledge and skillsets. Some characteristics surgical nurses need to embody are patience, effective communication, the ability to multitask, and the ability to stay calm under pressure. Each specialty in the surgical department has specified protocols to follow and skills that are necessary for staff to possess. These skills—such as individualized instrumentation, sterile technique, and the ability to operate specialized equipment—are typically learned on the job. The operating room can be a highly stressful environment, so the staff having experience and expertise not only in many surgical specialties but also in composure is important. This expertise is being lost as more RNs leave the surgery department.

Research Questions

This study aimed to answer the following questions pertaining to surgical nurses' experiences during the COVID-19 pandemic:

1. When the COVID-19 pandemic shut down surgery departments, did surgical RNs: (a) furlough for a time with the intent to return after operating rooms resumed activity, (b) change positions within health care and stay there after operating rooms resumed activity, or (c) leave the nursing profession altogether?

2. Did the following variables influence surgical RNs' decision to return to the surgical department?
    a. Insurance availability?
    b. Intrinsic motivation/feeling of choice regarding decision?
    c. Childcare availability?
    d. Shift change due to COVID-19 shutdown?

Purpose

The purpose of this exploratory study was to identify the association between surgical nurse job displacement and the COVID-19 pandemic and understand the influence this displacement had on surgical departments in the United States. This study explored: 1) if surgical nurses who experienced job displacement due to the COVID-19 pandemic, changed jobs within health care, returned to surgical nursing, or left the nursing profession altogether; 2) the relationship between variables (including health insurance availability, intrinsic motivation, childcare availability, and shift change) collected and whether the nurses persevered in the surgical departments or changed positions after displacement; and 3) the experiences of those who were displaced and changed positions. This knowledge increased my understanding of the shortage of surgical nurses nationwide.

Theoretical Framework

When the COVID-19 pandemic shut down surgical departments nationwide, many surgical nurses faced a decision they never anticipated: furlough for an undetermined amount of time without pay or be displaced to other units throughout the hospital systems. This decision left many surgical RNs facing an unknown future. This

research was used to determine some of the motivations that influenced the surgical nurses' decisions to furlough or be displaced.

For this research, the self-determination theory (SDT) was used as a theoretical framework. SDT proposes that humans have three very basic psychological needs for motivation and decision-making—autonomy, competence, and relatedness (Szulawski et al., 2021). Autonomy is defined as having an internal appreciation of one's performance instead of feeling controlled or pressured by an outside source. Competence is achieved by feeling efficient and effective at one's work or behavior. Relatedness is when an individual feels a significant connection to others, rather than feeling estranged. The fulfillment of these three needs greatly affects the motivation and performance of individuals in the workplace. SDT looks at these needs in the context of the extent to which the work environment provides the necessary proponents for the individual to achieve job satisfaction.

SDT explores the types of motivations that influence a person's decision-making. Self-determination theory suggests that when employees feel supported, they will have higher job satisfaction and will thrive in the workplace (Deci et al., 2017). SDT explores motivation types, including autonomous motivation and controlled motivation. Both motivation types are in play in the workplace but in different ways. Workers can be autonomously motivated in the workplace when they feel purpose in their jobs and have autonomy when carrying out specific tasks. Clear feedback and support from supervisors and managers help boost this autonomous motivation and increase the performance quality of the individuals. However, controlled motivation is often perceived by individuals as overbearing. While controlled motivation can produce short-term positive

effects, it often has negative long-term effects on performance and work engagement (Deci, 2017).

One of the best-understood types of autonomous motivation is intrinsic motivation. When an individual is intrinsically motivated, they find inspiration in the behavior being completed. Intrinsic motivation is a large component of job satisfaction, particularly in the healthcare field. One key trait of RNs is intrinsic motivation. This type of motivation keeps RNs engaged due to inspiration from task completion and is one of the most influential ways to keep RNs engaged at work.

SDT also postulates that extrinsic motivation is dependent on the staff work environment and is highly influenced by autonomy, competence, and relatedness (Tranquillo & Stecker, 2016). Knowing that all three psychological needs are influenced individually and influence each person can aid managers and administration in keeping staff motivated and engaged. This idea can also be explored to determine what has caused staff to become disengaged or unmotivated.

Operational Definitions

There is much terminology used in the healthcare field. This terminology can feel overwhelming and can often be misunderstood. These definitions were used to provide a well-defined understanding of the terms used in this research. A list of key elements addressed and explored in the study has been provided.

Self-Determination Theory

Self-determination theory was developed in 2000 at the University of Rochester by psychologists Edward Deci and Richard Ryan. The theory has a total of six mini-theories that were also developed by psychologists after much research. SDT tackles

explicitly the type of motivation versus the amount of motivation required. The types of motivations discussed within SDT are intrinsic motivation and extrinsic motivation. SDT also discusses three psychological needs—autonomy, competence, and relatedness. When all three of these needs are met in a social or situational context, an individual is more likely to be intrinsically motivated (Flannery, 2017).

Registered Nurse

A nurse is defined as a person who has graduated from an accredited nursing program. This person must obtain a license from the National Council of State Boards of Nursing (NCSBN). An RN is formally trained to care for the sick and infirm. According to the American Nurses Association (2022), nursing encompasses a vast range of specialties, thus each nurse will have specific strengths, passions, and expertise.

Surgery Staff

To understand how staffing shortages affect surgical departments, it is important to understand each member of the surgical department and each specific role in context. Surgical teams are large in scope, with each member being essential for the department to run efficiently. Ramadanov (2020) defines a surgical team as one made up of a surgeon, a surgeon assistant, an anesthesiologist, a certified nurse anesthetist, a circulating/scrub nurse, and a surgical technologist, or any combination thereof. This list is exclusively those staff members who are present in the operating room.

The surgeon is typically the leader of the operating team. A surgeon may be trained in many different specialties, including, but not limited to: general surgery, trauma, orthopedics, pediatric, obstetrics/gynecological, oncology, vascular, plastic, cardiac, ENT (ear, nose, and throat), podiatry, optometry, and many more.

The surgical assistant can be a few different people throughout the department. In teaching hospitals, often this role is filled by resident physicians. However, surgical technologists and registered nurse first assists (RNFAs) can fill this role as well. This person is responsible for having a large knowledge base of the surgery being performed to assist the surgeon.

Anesthesia can be performed by either an anesthesiologist/anesthetist or a certified nurse anesthetist (CRNA). An anesthesiologist is a physician who completed a residency with anesthesiology as their main course of study. A CRNA is a nurse with an advanced practice degree. The anesthesia providers, either anesthesiologist or CRNA, perform local anesthesia as well as narcosis. The anesthesia provider is responsible for keeping the patient asleep/paralyzed and maintaining the patient's vital functions during the procedure.

Registered nurses in the operating room typically serve one of two functions—circulator or scrub nurse. Circulating nurses remain nonsterile in the operating room and are responsible for maintaining an asepsis of everyone in the operating room throughout the operation. The circulator is the main source of communication from the surgical team to anyone outside of the operating room. The circulating nurse is also responsible for positioning the patient safely and appropriately for the procedure and administering a surgical skin prep prior to surgery start time. A scrub nurse is a nurse is trained to assist a surgeon in performing the surgery. This RN should be an expert in asepsis and have excellent communication skills. This RN should know the procedure being performed and the ability to anticipate the needs of the surgeon throughout the surgery, alongside a surgical technologist or independently.

A surgical technologist is responsible for preparing the operating room, opening surgical supplies and instrumentation, and assisting the surgeon during a procedure. Most surgical technology programs are two years in length and focus on identifying and handling surgical instrumentation and equipment. Surgical technologists should have a wide knowledge of human anatomy to assist the surgeon and anticipate needs throughout the procedure.

Some of the most important team members are the nurses who work in the preoperative and postoperative units. Preoperative RNs are responsible for making sure that patients are ready for surgery, including starting intravenous lines, monitoring vital signs, and completing any surgical preps that may be necessary. Postoperative RNs are responsible for patient care after surgery, including pain management and monitoring vital signs.

Many other key players in the surgical department never see the inside of an operating room. These staff members include sterile processing technicians, central sterile supply technicians, and purchasing agents who make sure all the instrumentation and supplies are sterile for surgeries to take place. Usually, several staff members on a registration team assist with scheduling patients for surgery, including those that check for prior authorization from insurance companies and those that are present on the day of surgery to check the patients into the department. Having a shortage of any of these key players, those within the operating suite and without, causes disruption within the department.

Demographic Variables

Specific demographic variables were used to determine influences on surgical nurses' decision-making regarding the change of jobs. Demographic variables are defined as data describing a specific population. Listed in Table 1 are the specific demographic variables used and the correlating operational definitions.

Table 1

Demographic Variables and Operational Definitions

Variable	**Operational Definition**
Age	Number of years alive
Years of Experience	Number of years worked in a surgical department
Years of Experience as an RN in Surgery	Number of years worked as an RN in a surgical department
Role	Role within surgical department (manager; staff nurse, preoperative; staff nurse, perioperative circulator; staff nurse, perioperative scrub nurse; staff nurse, postoperative)
Gender	Male, female, non-binary, or preferred not to answer
Ethnicity	Race or culture such as White/Caucasian, Black/African American, American Indian or Alaskan Native, Asian, Hispanic or LatinX, or preferred not to answer.
Marital Status	Single (never married), Married or in a domestic partnership, Widowed, Divorced, or Separated.
Income	Dollar amount of work-related pay
Employment Status	Full-time, part-time, prn, travel nurse, retired, unemployed, student
Work Schedule	Work schedule prior to COVID. 8-hour shifts, 10-hour shifts, 12-hour shifts
Job displacement status	Furloughed with intent to return, displaced to another specialty, left healthcare completely
Health Insurance	Contingent on nursing job
Childcare	Availability
Location	Geographical location

Assumptions and Limitations

This research assumed that COVID-19 nationwide operating room shutdowns were a determining factor in the job displacement of surgical RNs in 2020. This research aimed to determine the degree to which surgical nurses were displaced from their jobs and the effect that had on current surgical staffing shortages. This research assumed that the subjects were honest and straightforward about their identity and responses to the survey. Obtaining false data was possible due to the lack of personal contact between the researcher and the subject due to the online survey platform.

Significance

Closing surgical departments not only negatively impacts patients but is also detrimental to hospitals. Surgical departments account for more than 50% of overall revenue for hospitals, making them the largest sources of income for most hospitals (Bartlett, 2022). Those surgical departments that were fortunate enough to stay open still faced challenges with staffing shortages; however, many hired travel nurses to lighten the load. Unfortunately, this solution came at a cost to the hospital. Some hospitals began spending as much as $100,000 per week on travel nurses just to keep the department running (Ellison, 2022). Hospitals will not be able to continue operating at such excessive costs, especially since insurance reimbursement for services has remained relatively unchanged. This situation will result in more surgical department shutdowns in the future.

Staffing shortages in the operating room create even more challenges throughout the surgical department. Many staff members are trained to fulfill many roles throughout the surgical department. However, if these trained staff members leave the department, an even more difficult loss is felt by the department. This training also takes a significant

amount of time. Many surgical departments allot six months to a year for each staff member to master their role within the department.

Summary

Surgical departments are struggling with staffing shortages, as are many departments throughout the hospital system. Prior to the COVID-19 shutdowns, staffing shortages in surgical departments nationwide were much less prevalent. This research was to identify where the staff who were employed in surgical departments before the COVID-19 pandemic is currently working. This research was significant due to surgical departments functioning as the highest revenue source for hospitals, as well as an important service to the community. While there was little research completed regarding the effects of the COVID-19 pandemic on surgical staffing currently, Chapter II will discuss prominent research and literature that help support this study.

CHAPTER II – REVIEW OF LITERATURE

Introduction

This chapter explores current literature to help understand the effects of the COVID-19 pandemic on healthcare staff. This chapter will review peer-reviewed articles, dissertations that are relevant to this subject, and current and past publications pertaining to COVID-19, healthcare staffing shortages, and surgical departments. This review is arranged into appropriate categories and subject titles.

Search Criteria

This search was conducted online using the Cumulative Index to Nursing and Allied Health Literature (CINAHL) Complete and Academic Search Premier. Keywords and phrases used included COVID-19, staffing shortages, nursing, surgery, surgical department, surgery staffing and training, self-determination theory, engagement, and retention. These terms, when searched together, generated less than 100 potential articles. These results were an indication that there is a need for exploration of this subject. Many of the articles included in this literature review capture individual aspects of the greater picture, since there is little completed research about the subject currently. After reviewing the abstracts of the potential articles, the following were chosen based on the following criteria: must be published after 2005 and must be based in the United States. These criteria are used because the research being conducted is based on RNs in the United States and based on an event that began in 2020.

COVID-19 Effect on Healthcare Staffing

Prior to the COVID-19 pandemic, the United States was already facing staffing shortages for nurses. However, the COVID-19 pandemic caused a substantial demand for

healthcare staffing, to a degree that most hospitals worldwide were not prepared for. The nation faced higher acuity patients and a higher patient load per RN. This trend caused RNs to experience high levels of burnout (Lasater et al., 2021). Lasater et al (2021) surveyed nurses from 254 hospitals between New York and Illinois and concluded that the RNs experienced increased nurse:patient ratios. Typically, a nurse: patient ratio should be 1:3 but could be up to 1:4. However, many hospitals were seeing a 1:6 for patients on a hospital floor during the pandemic (Handzel, 2021). While pre-pandemic ICU nurse: patient ratios were typically 1:1, they increased to 1:4 during the height of the pandemic (McLernon, 2020). The increased patient load caused the RNs to give their hospitals unfavorable recommendations (Lasater et al., 2021). The RNs also reported very high percentages of burnout, which became a patient safety concern.

Some hospitals initiated a staffing surge plan during the most critical staffing needs due to the COVID-19 pandemic (Mhawish & Rasheed, 2022). Many of these plans pulled RNs from different departments to fill positions in critical care areas. One of the departments RNs were deployed from was surgery (Handzel, 2021). These RNs have a semi-critical care background in the surgical department, so with the nationwide shutdown, it was simple to deploy them to critical care to assist those RNs who were seeing higher patient ratios and acuity. Some hospitals even converted their surgical departments to patient care rooms during surges to accommodate more patients.

Engagement of Staff

Engagement and retention of the nursing staff were already a concern prior to the COVID-19 pandemic. However, it has become even more essential following the pandemic due to the increased level of burnout among nurses nationwide. Nurses are

more engaged at work when they feel empowered. Laschinger (2009) found that nurse empowerment was influenced by three main factors: job satisfaction, organizational commitment, and turnover intentions. Laschinger (2009) found that when nurses found their work environment to be unsatisfactory, engagement and retention declined, and turnover was more likely.

Many studies have been completed on the links between employee engagement and self-determination theory (SDT). Knight et al (2017) found that employees who felt supported and felt like they had an influence on decisions in the workplace were more likely to feel engaged at work. For their research, Knight et al (2017) had participants take a pre-test to assess work engagement. Then they held five core workshops over the course of nine months. These workshops aimed to discuss the progress of specific changes made to processes within a hospital system. Workshop participants then implemented these changes to their hospital floors by teaching their coworkers about the changes. After the conclusion of the workshops and implementation of process changes, a post-test was given to participants. Those participants who attended workshops felt like they had an influence on the decision-making processes and felt more engaged in their work as a result.

West and Dawson (2012) discovered that when staff was more engaged within their organization, better outcomes were experienced by both patients and the organization. Examples of the outcomes included a greater patient experience, fewer errors from staff, a decrease in patient death and infection rates, as well as better financial stability. West and Dawson (2012) also discovered that poor employee engagement led to burnout and negative emotions toward work environments. In the research conducted by

West and Dawson (2012), individual levels of engagement were tested as well as team engagement levels. The research found that those employees that had a poorly structured appraisal in the workplace were less engaged overall than those that had a well-structured appraisal. The same was found for team engagement; those participants who were working in well-structured teams had high levels of engagement, whereas those who did not were much less engaged.

Smith (2017) discusses the importance of leadership in motivation and staff engagement. He postulated that with the right leadership style, a leader can promote staff engagement by having the employees truly buy into the organization's goals and values. Smith and Williams (2017) believed this buy-in to be a direct result of SDT collective leadership inspiring intrinsic motivation. Through the application of SDT to healthcare work environments, Smith and Williams (2017) believe that there can be positive changes to work engagement and staff retention through collaborative policy making.

Disengaged employees are a difficulty across all industries, costing businesses worldwide up to $7.8 trillion in 2022 (Pendall, 2022). While employee engagement had been rising, even reaching a peak of 22% in 2019, the pandemic influenced that trajectory. Employee engagement begins at an organizational level, however. A culture of engagement within the workplace has been proven to employees engaged. Leader communication within the organization impacts employee perception of the workplace environment (Tao et al., 2022). This communication is especially important during crisis situations.

The degree to which employees need satisfaction depends closely on the social environment through which they are engaged (Tao et al., 2022). When looking at

employee engagement through the lens of SDT, it is easy to see how the needs for autonomy, competence, and relatedness are essential to one's well-being. Without the correct fit for those needs, employees can feel isolated and undermined and become disengaged at work. Therefore, it is of utmost importance for employees to feel engaged in a positive workplace to be intrinsically motivated. Intrinsic motivation then encourages the employee to feel more engaged and satisfied at work, thus increasing staff engagement and retention.

Summary

This literature review proved a definite gap in the literature regarding staffing shortages post-COVID-19 pandemic. However, it does indicate a need for increased study of the engagement and retention of nurses. The review addressed several factors that affected staffing during peak seasons of the COVID-19 pandemic. These factors included higher acuity patients, increased nurse: patient ratios, and dissatisfactory work environments. However, when the work environment can become positive and engaging, the employee is more likely to be intrinsically motivated and therefore more engaged in the company.

CHAPTER III - METHODOLOGY

Introduction

A gap in the literature has been acknowledged regarding staffing shortages post-COVID-19, generally and specifically within surgical departments. This research aimed to determine why there was such a high precedence of staffing shortages within surgical departments in the United States post-COVID-19 pandemic shutdowns. The focus of the research was to explore the surgical department staffing issues by exploring what decisions were made by surgical nurses during the COVID-19 surgical department shutdowns: a) furlough for a time with an intent to return to a surgical department, b) change positions within the hospital/work in a different department long term, c) leave the nursing profession altogether, or d) no displacement/continued to work in a surgical department. Due to the gap in the literature, an exploratory approach best served this research. Chapter III describes this methodology in clearer detail. This chapter discusses the research design, role of the researcher, setting and sample, instrumentation, and data analysis in detail.

Research Design

Exploratory research design is implemented when a research problem or question has not been studied or well understood. This design was implemented due to the nature of the research question. A descriptive survey design is an effective method used to answer descriptive-based research topics with varying associations (Creswell & Creswell, 2018). A survey constructed of closed-ended questions was used to collect data from participants meeting the criteria. If there were not enough responses acquired from participants, open-ended Zoom® interviews could be conducted with willing participants.

The variables studied explored the RN's experience with displacement during COVID-19 surgical department shutdowns. These experiences were measured via a survey instrument created by the researcher. The demographic variables explored are listed in Table 2.

Table 2

Demographic Variables and Data Type

Variable	**Data Type**
Age	Ordinal
Years of Experience in Surgery	Ordinal
Years of Experience as an RN in Surgery	Ordinal
Role	Nominal
Gender	Nominal
Ethnicity	Nominal
Marital Status	Nominal
Income	Ordinal
Employment Status	Nominal
Work Schedule	Nominal
Job Displacement Status	Nominal
Health Insurance Availability	Nominal
Childcare Availability	Nominal
Geographical Location	Nominal

These variables were chosen by the researcher to help determine whether demographic variables affected surgical RNs choices regarding job displacement status. Age was chosen because the researcher thought there could be some relationship between age and a choice to continue working or retire early. Many surgical RNs begin working in the operating room as surgical technicians and then return to school to complete a nursing degree. Therefore, years of experience in surgery in general and then years of experience as an RN in surgery are important variables to understand. The many roles within a surgical department that an RN can fulfill include manager/supervisor, preoperative RN,

perioperative circulator, perioperative scrub nurse, and postoperative RN. Due to having so many positions available in a surgical department, it is important to know which roles participants are fulfilling. It is well known that nursing is a female-dominated career path; however, surgical nursing tends to draw more male nurses since male nurses often face gender discrimination in other nursing specialties (Chen & Chawla, 2021). Due to this pattern, examining the gender of participants in this study is warranted. Marital status is explored due to the potential for having supplemental forms of household income and/or insurance availability. Employment status, work schedule, childcare availability, and geographical location could be potential motivations for surgical RNs decisions regarding job displacement status.

Role of Researcher

The researcher was a passive participant in the research. The researcher created a survey and recruited participants. The researcher cleaned, assembled, analyzed, and documented the results of the survey. Upon review of participant responses, the researcher would determine whether there was a need to contact participants meeting the criteria to conduct Zoom® interviews regarding responses.

Setting and Sample

Setting

Multiple online sources were used to recruit subjects. The use of multiple online platforms allows for data collection from a vast, assorted population rapidly and with relatively minimal cost (King et al., 2014). Data was collected using an online survey developed by the researcher and distributed to surgical nurses through the Association of Operating Room Nurses listserv as well as Facebook nursing groups. Participants were

also recruited using snowball sampling from social media and word of mouth. The survey consisted of a series of questions exploring demographics that affected RN choices to 1) furlough with an intent to return to surgical nursing, 2) change positions within the nursing profession without intent to return to surgical nursing, 3) leave the nursing profession altogether, or 4) have no displacement and continued to work in a surgical department.

Sample

The desired population for this study was RNs who worked in a surgical department during the COVID-19 pandemic surgical department shutdown. Participants were recruited using the Association of Operating Room Nurses listserv, Facebook groups, and by using snowball sampling. Data from all participants were analyzed to find more accurate and meaningful results. Recruitment of participants began after approval from the Institutional Review Board (IRB) at The University of Southern Mississippi (Protocol 22-1555). The researcher contacted social media group pages to obtain permission to post a recruitment request. Nursing organizations including the Association of Operating Room Nurses and the Rural Winding Health Association emailed out the Surgical Nursing Job Displacement Survey on behalf of the researcher. The researcher also shared the recruitment request on her personal Facebook page. All recruitment materials were sent electronically via email or available on social media. Participants were asked to share with other applicable participants to ensure a large sample population.

Eligibility criteria for participation included: 1) must be an RN who worked in a surgical department before the COVID-19 pandemic shut down for at least six months; 2)

must be willing to sign a consent form for participation; and 3) be willing to participate in a Zoom® interview if certain criteria are met.

Informed consent was reviewed by participants and signed electronically prior to accessing the survey. Once consent was obtained, participants completed a short questionnaire to confirm eligibility. Once eligibility was confirmed, the participant was able to access the Surgical Registered Nurse Job Displacement Survey. This survey included a Likert-scale questionnaire regarding job displacement status, the Intrinsic Motivation Inventory Perceived Choice Subscale, and a demographic questionnaire. All participants who completed the survey were invited to join a drawing for a $20 Visa gift card. Five participants were chosen at random to receive this incentive. Those participants who wished to enter the drawing were asked to enter their name and email address as the last question of the survey. To protect participants' privacy, all names were masked to avoid any identifiable information in the analysis.

Instrumentation and Materials

Likert- scale questionnaires are commonly used methods to gather data. Likert-scale questionnaires consist of statements with response anchors that the questionnaire participant may choose from. Since there is little known about COVID-19's effects on staffing currently, searches for established surveys regarding surgical staffing shortages due to COVID-19 yielded little results. Therefore, a Likert-scale survey created by the researcher was used to collect data for this research. Intrinsic motivation is a large component of decision-making; therefore, the Perceived Choice Intrinsic Motivation Inventory was used to determine the effect of intrinsic motivation on participants' decisions regarding job displacement status. The Intrinsic Motivation Inventory (IMI) has

been used in several experiments regarding intrinsic motivation. The IMI is used to assess participants' interest, perceived competence, effort, value, pressure, tension, and perceived choice. The inventory can be used as a whole or in different subscales. Each subscale has its score and validity. The IMI was created by Ryan and Deci (2000) and has been validated for internal consistency and validity by McAuley, Duncan, and Tammen (1987). The scale creator recommends that experimenters choose the subscales relevant to the research they are conducting.

Using the Likert-scale Surgical Nursing Job Displacement survey, participants were asked to self-report by responding to a question set. The survey was created by the researcher and focused on the participant's experience during the COVID-19 shutdown regarding job displacement. After obtaining informed consent from the participant, the survey began with a question regarding job displacement status. Once an answer was selected from four choices, the participants were presented with 12-13 statements dependent upon the responses to the first question. The responses available to participants are 1=strongly disagree, 2= somewhat disagree, 3=neither agree nor disagree, 4=somewhat agree, or 5=strongly agree. The Likert-scale Surgical Nursing Job Displacement Survey is presented in Appendix A. The Perceived Choice Intrinsic Motivation Inventory consists of 7 questions in random order. The participant responded on a scale of 1-5, with 1=very false, 2=somewhat false, 3=neither true nor false, 4=somewhat true, and 5= very true. The Perceived Choice Intrinsic Motivation Inventory used is presented in Appendix B.

After completing the Likert-scale questions, demographic data was obtained from the participants using a self-response questionnaire. Demographic information collected

included: years spent working in a surgical department prior to the pandemic, state of employment, surgical department shutdown/stayed open, job displacement, as well as many other factors. Optional open-ended questions were included to ascertain nurses' full experiences with job displacement due to the COVID-19 shutdown. The demographic questionnaire is presented in Appendix C. After survey data collection, if unable to ascertain a sample of at least 70 participants, Zoom® interviews would be conducted with a small sample of nurses who meet the criteria, specifically, those who have changed positions/facilities and left the surgical departments.

Preparation of Data for Analysis

The Surgical Nursing Job Displacement Survey was administered using Qualtrics®. The survey was open for data collection from 12/15/2022 to 1/15/2023. The researcher did not require a password for access to the survey with the intent to get as much of a widespread sample as possible.

Collected data were reviewed by the researcher to ensure survey completion and remove any false data that could skew the results. Criteria for deletion of results included:

1. Surveys that did not have a response to question 2 (In April 2020, there was a nationwide shut down of surgical departments. When this shut down occurred, many were displaced from their jobs. From the following selections, what best describes your job displacement situation?*)*
2. Multiple survey responses were collected within the same minute
3. Participant's email as a response to question 25 (In which U.S. state or territory did you live during March 2020 [prior to COVID-19 shutdowns]?

Please list) or question 26 (Are there any additional factors that influenced your decision regarding job displacement due to COVID-19?)

4. Surveys with exact responses to questions 25 and 26 as the submission immediately prior

Data collected from participants were transferred from Qualtrics® to IBM SPSS® version 29 as a database and subsequently analyzed using the same program. Internal reliability was tested using Cronbach's alpha in SPSS® to test the relativity of items used in the instrument. Cronbach's alpha is a reliability analysis run by SPSS to determine if a scale used for data collection is reliable, especially when used with multiple Likert-scale questions. A value of between 0.7 and 0.9 is considered respectable and a score between 0.61 and 0.65 is moderate (Taber, 2018). Charts and graphs were created to depict the demographic data as well as the nominal data collected by the survey. The researcher utilized descriptive statistics to summarize and emphasize important relationships in the data.

Data Analysis

Once the dataset was uploaded to SPSS®, a Cronbach's Alpha analysis was completed for each response set. Each variable was analyzed separately and in groups. Demographic data was sorted into tables and graphs. Table 3 displays data groupings including variables, intended data collection instruments, variable type (independent/dependent), and analysis type.

Due to many variables being researched, a contingency analysis was conducted. This analysis was performed using SPSS®. A contingency analysis, or chi-square test, is performed to determine a relationship between categorical variables (Holcomb, 2018).

The researcher used a chi-square test to find relationships between variables, such as return to the surgical department and health insurance availability.

Table 3

Data Analysis

Variable	**Instrument**	**Independent/ dependent**	**Analysis**
Age	Demographic	Independent	Descriptive Statistics
Years in Surgery	Demographic	Independent	Descriptive Statistics
Years as RN in Surgery	Demographic	Independent	Descriptive Statistics
Role	Demographic	Independent	Descriptive Statistics
Gender	Demographic	Independent	Descriptive Statistics
Ethnicity	Demographic	Independent	Descriptive Statistics
Marital Status	Demographic	Independent	Descriptive Statistics
Income	Demographic	Independent	Descriptive Statistics
Employment Status	Demographic	Independent	Descriptive Statistics
Work Schedule	Demographic	Independent	Descriptive Statistics
Job Displacement Status	Surgical Nursing Job Displacement	Dependent	Descriptive Statistics, chi-square
Health Insurance Availability	Surgical Nursing Job Displacement	Independent	Chi-square
Childcare Availability	Surgical Nursing Job Displacement	Independent	Chi-square Chi-square
Geographical Location	Demographic	Independent	Descriptive Statistics
Intrinsic Motivation	IMI	Independent	Chi-square

After the initial surveys were completed by participants, the researcher reviewed the data and determined no need for additional information. However, if there had been a need for additional data collection, Zoom® interviews could have been conducted with participants. These interviews would have helped participants elaborate on their experiences with job displacement and their decision regarding workplace post-COVID-19 shutdowns. Ideally, the researcher would have liked to interview at least one participant from each decision path- a) furlough and return to the surgical department, b) change jobs within nursing, c) leave nursing altogether, and d) no displacement and

continued to work in a surgical department. However, the researcher received efficient data from the survey and Zoom® interviews were not needed for this research.

Summary

Chapter III discussed the methodology used for this research in detail. Participants of this study completed a survey created by the researcher that included the Surgical Nursing Job Displacement Survey, Intrinsic Motivation Inventory, and demographic questionnaire. Once the surveys were completed, the researcher scrubbed the results for incomplete or false data. The researcher then analyzed the data using contingency analyses. If additional data was needed, the researcher could conduct Zoom® interviews with select participants based on their answers and eligibility criteria. Results from the data analysis will be discussed in Chapter IV.

CHAPTER IV – RESULTS

Introduction

This study utilized a survey developed by the researcher that consisted of three sections of questionnaires. The first section was a 12-13 item Likert-scale survey that measured different items' effects on surgical RN job displacement status decisions. The statements were presented, and participants chose their responses on a scale of 1-5, with 1= Strongly Disagree 2= Disagree, 3= Neither Agree nor Disagree, 4= Agree, and 5= Strongly Agree. The second section that participants were asked to complete was the Intrinsic Motivation Inventory. This section was a 7-item Likert Scale in which participants were asked to think about the decision they made regarding job displacement at the time that surgical departments shut down due to COVID-19. Participants were to rate the following statements on a scale of 1-5, with 1=very false, 2=somewhat false, 3=neither true nor false, 4=somewhat true, and 5= very true. The third section of the survey was a demographic questionnaire. Participants were presented with 12 demographic questions and were able to choose a multiple-choice answer that best described their response for ten of the questions. Three fillable questions were also included. Having multiple methods of data entry was one of the choices made by the researcher to test the appropriateness of responses.

The survey was distributed via email by the Association of Operating Room Nurses as well as on social media through personal Facebook pages as well as Facebook nursing groups. The AORN distributed the survey to 5000 potential participants via recruitment email with an anonymous link to the survey included. However, the

researcher was informed by AORN of the likelihood of no more than 100 participant responses to the recruitment email.

A power analysis was performed prior to distribution using G-Power 3.1. The power analysis conducted used linear multiple regression with effect size- 0.15, significance level= 0.05, and targeted power (1-β)= 0.95. This analysis showed a total sample size needed of at least 74 participants to ensure a valid result from the survey.

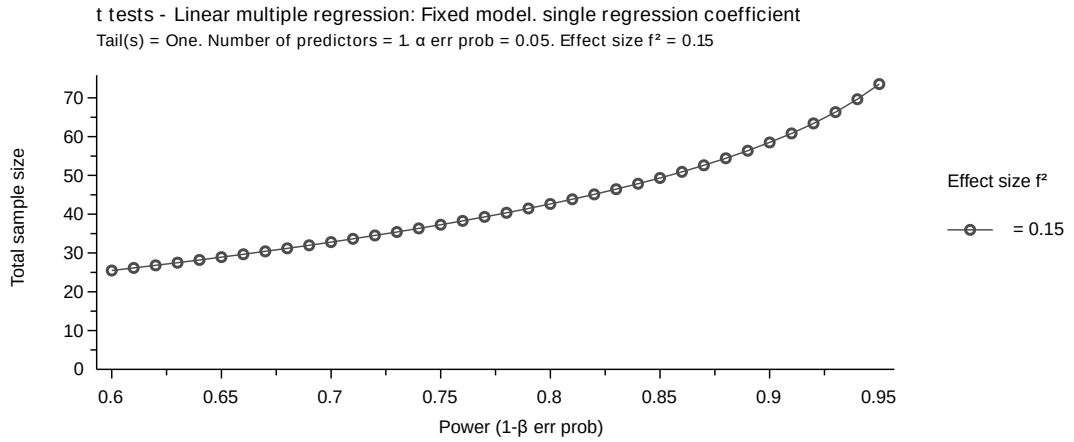

Figure 1. Power Analysis.

Created using G*Power program by Faul et al (2007).

Cronbach's alpha was tested to obtain internal consistency. The dataset analysis for RNs who furloughed with intent to return resulted in a 0.747 Cronbach's Alpha score. The dataset analysis for RNs who were displaced resulted in a 0.638 score. The dataset for RNs that left/became travel RNs/retired early resulted in a 0.786 score. The dataset analysis for RNs that had no displacement was 0.704. These scores reflect moderate to highly respectable internal consistency for the Surgical RN Job Displacement Survey.

Results

Demographic Data

Qualtrics® captured a total of 1452 survey responses between 12/15/2023 and 1/15/2023. Of these results, a total of 190 (N=190) were found to be valid survey results according to the deletion criteria. The demographic information collected was almost exclusively nominal-level data, whereas the Likert-scale data was considered ordinal-level data. Both data types were coded as such in SPSS®. The demographic characteristics acquired from participants in this research included age, years of experience in a surgical department, years of experience as an RN in a surgical department, role in the surgical department (Figure 2 and Figure 3), gender identity, ethnicity, marital status, total household income, employment status, shift worked, and job displacement status, and geographical location (Figure 4). Demographic data collected can be found in Table 4.

Descriptive Findings

Participant job displacement status was a focus of this research. Breakdown is as follows: Of the 190 participants, 78 (41.1%) were displaced and worked in another unit in the hospital system, 56 (29.5%) participants furloughed for an unknown time with the intent to return to the surgical department when it reopened, 35 (18.4%) had no displacement and continued to work in a surgical department, and 21 (11.1%) participants left healthcare altogether/became travel nurses/retired early. All descriptive findings can be found in Table 4.

Of the participants (N=190), the age breakdown is this: 13 (6.8%) participants were 18-24 years old, 66 (34.7%) of participants were 25-34 years old, 62 (32.6%)

participants were 35-44 years old, 32 (16.8%) participants were 45-54 years old, 14 (7.4%) participants were 55-64 years old, and 3 (1.6%) participants were 65-74 years old. Participants were asked about geographical location. There were responses from 43 states and 2 territories (Figure 5).

Years worked in a surgical department were assessed to determine if more experience influenced participants' decision regarding job displacement status as many surgical nurses had experience in the surgical department in a different role prior to becoming a surgical RN. Of the 190 participants, 13 (6.8%) participants had less than 1 year of experience in a surgical department, 51 (26.8%) participants had 1-5 years of experience, 60 (31.6%) participants had 6-10 years of experience, 31 (16.3%) participants had 11-15 years of experience, 16 (8.4%) participants had 16-20 years of experience, and 19 (10.0%) participants had more than 20 years of experience. Years of experience as an RN in a surgical department breakdown is as follows: 15 (7.9%) participants had less than 1 year as an RN in surgery, 59 (31.1%) had 1-5 years of experience, 50 (26.3%) had 6-10 years, 33 (17.4%) had 11-15 years, 13 (6.8%) had 16-20 years, and 20 (10.5%) had more than 20 years of experience as an RN in a surgical department.

Many surgical RNs fulfill multiple roles throughout the surgical departments. Participants were able to select all that apply when asked about the role the fulfilled in the surgical department. Of the 190 participants, 156 (82.1%) fulfilled multiple roles within the surgical department and 34 (17.9%) fulfilled only one role. Of the participants, 75 (39.5%) selected preoperative nurse as one of their roles, 70 (36.8%) selected staff nurse, perioperative circulator as one of their roles, 34 (17.9%) participants selected Manager/Supervisor as one of their roles, 40 (21.0%) participants selected staff nurse,

perioperative scrub as one of their roles, and 31 (16.3%) participants selected staff nurse, postoperative as one of their roles.

Gender, ethnicity, marital status, and household income were investigated by the researcher to better understand who was affected most by COVID-19 surgical department shutdowns. The gender breakdown is as follows: 136 (71.6%) participants were female, 39 (20.5%) were male, 6 (3.2%) were non-binary/third gender, 5 (2.6%) preferred not to say, and 4 (2.1%) were transgender. The ethnicity breakdown of participants is as follows: 121 (63.7%) participants were White/Caucasian, 20 (10.5%) participants were Hispanic or LatinX, 15 (7.9%) were American Indian or Alaskan Native, 15 (7.9%) were Black/African American, 9 (4.7%) were Asian, 7 (3.7%) preferred not to say, and 3 (1.6%) were multiple ethnicities.

Marital status was reviewed of the 190 participants, 134 (70.5%) were married or in a domestic partnership, 37 (19.5%) were single, 11 (5.8%) were widowed, and 8 (4.2%) were divorced. Participants were asked to select their total household income from 2020. Total household income of participants in 2020 was: 7 (3.7%) participants had $10,000-$19,999 as a total household income, 11 (5.8%) participants had $20,000-$29,999 as a total household income, 13 (6.8%) participants had $30,000-$39,999 as a total household income, 14 (7.4%) participants had $40,000-$49,999 as a total household income, 17 (8.9%) participants had $50,000-$59,999 as a total household income, 20 (10.5%) participants had $60,000-$69,999 as a total household income, 16 (8.4%) participants had $70,000-$79,999 as a total household income, 28 (14.7%) participants had $80,000-$89,999 as a total household income, 21 (11.1%) participants had $90,000-$99,999 as a total household income, 32 (16.8%) participants had $100,000-$150,000 as

a total household income, and 11 (5.8%) participants earned more than $150,000 total household income in 2020.

Employment Status and Shift Worked were investigated by the researcher to determine if the amount of time spent at work had an influence over participants' decisions regarding job displacement status. Of the 190 participants, 141 (74.2%) worked full-time (36 or more hours) in March 2020, 22 (11.6%) participants worked part-time (24-35 hours), 10 (5.3%) participants worked PRN or per diem (less than 24 hours), 3 (1.6%) participants were retired, and 14 (7.4%) participants were travel nurses in March 2020. Many surgical nurses work different shifts. Shift breakdown for participants is as follows: of the 190 participants, 82 (43.2%) worked 8-hour days, 40 (21.1%) worked 10-hour days, 24 (12.6%) worked 8-hour nights, 21 (11.1%) worked 12-hour days, 20 (10.5%) worked 10-hour nights, and 3 (1.6%) worked 12-hour nights.

Table 4

Descriptive Findings of Demographic Variables

Variable	**N (%)**
Age	
18-24	13 (6.8%)
25-34	66 (34.7%)
35-44	62 (32.6%)
45-54	32 (16.8%)
55-64	14 (7.4%)
65-74	3 (1.6%)
Years in Surgery	
Less than 1	13 (6.8%)
1-5	51 (26.8%)
6-10	60 (31.6%)
11-15	31 (16.3%)
16-20	16 (8.4%)
More than 20	19 (10.0%)

Table 4 (continued).

Variable	N (%)
Years as RN in Surgery	
Less than 1	5 (7.9%)
1-5	59 (31.1%)
6-10	50 (26.3%)
11-15	33 (17.4%)
16-20	13 (6.8%)
More than 20	20 (10.5%)
Role	
Manager/Supervisor	4 (17,9%)
Staff Nurse, Preoperative	75 (39.5%)
Staff Nurse, Perioperative Circulator	70 (36.8%)
Staff Nurse, Perioperative Scrub	40 (21.0%)
Staff Nurse, Postoperative	31 (16.3%)
Gender	
Male	39 (20.5%)
Female	136 (71.6%)
Non-Binary/Third Gender	6 (3.2%)
Prefer Not to Say	5 (2.6%)
Transgender	4 (2.1%)
Ethnicity	
White/Caucasian	121 (63.7%)
Hispanic/LatinX	20 (10.5%)
American Indian/Alaskan Native	15 (7.9%)
Black/African American	15 (7.9%)
Asian	9 (4.7%)
Prefer Not to Say	7 (3.7%)
Multiple Ethnicities	3 (1.6%)
Marital Status	
Married/Domestic partnership	134 (70.5%)
Single	37 (19.5%)
Widowed	11 (5.8%)
Divorced	8 (4.2%)

Table 4 (continued).

Variable	N (%)
Income	
$10,000-$19,999	7 (3.7%)
$20,000-$29,999	11 (5.8%)
$30,000-$39,999	13 (6.8%)
$40,000-$49,999	14 (7.4%)
$50,000-$59,999	17 (8.9%)
$60,000-$69,999	20 (10.5%)
$70,000-$79,999	16 (8.4%)
$80,000-$89,999	28 (14.7%)
$90,000-$99,999	21 (11.1%)
$100,000-$150,000	32 (16.8%)
More than $150,000	11 (5.8%)
Employment Status	
Full Time (36 or more hours)	141 (74.2%)
Part-Time (24-35 hours)	22 (11.6%)
PRN/Per Diem (Less than 24 hours)	10 (5.3%)
Retired	3 (1.6%)
Travel Nurse	14 (7.4%)
Work Schedule	
8-hour days	82 (43.2%)
8-hour nights	24 (12.6%)
10-hour days	40 (21.1%)
10-hour nights	20 (10.5%)
12-hour days	21 (11.1%)
12-hour nights	3 (1.6%)
Job Displacement Status	
Furloughed	56 (29.5%)
Displaced	78 (41.1%)
Left/Travel/Retired	21 (11.1%)
No Displacement	35 (18.4%)
Health Insurance Availability	
Available	168 (88.4%)
Not Available	17 (8.9%)
Not Sure	5 (2.6%)
Childcare Availability	
Available	84 (44.2%)
Not Available	43 (22.6%)
Not Sure	63 (33.2%)

Table 4 (continued).

Variable		N (%)
Shift Change		
	Changed	129 (67.9%)
	No Change	31 (16.3%)
	Not Sure	30 (15.8%)
COVID Vaccine Effect		
	Had Effect	105 (55.3%)
	No Effect	44 (23.2%)
	Not Sure	41 (21.6%)
Intrinsic Motivation		
	Had Choice	105 (55.3%)
	No Choice	44 (23.2%)
	Not Sure	41 (21.6%)

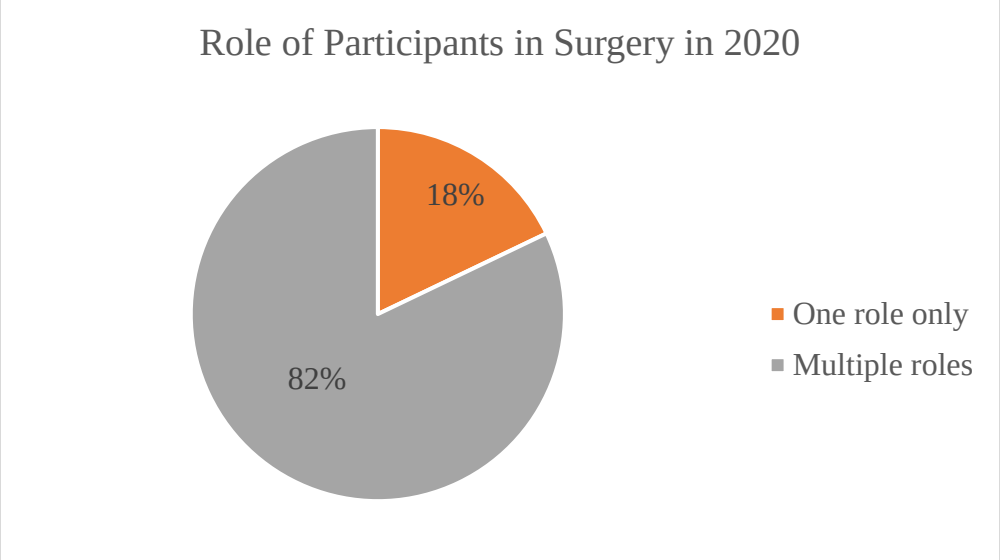

Figure 2. Role of Participants in Surgery in March 2020 by Number of Roles

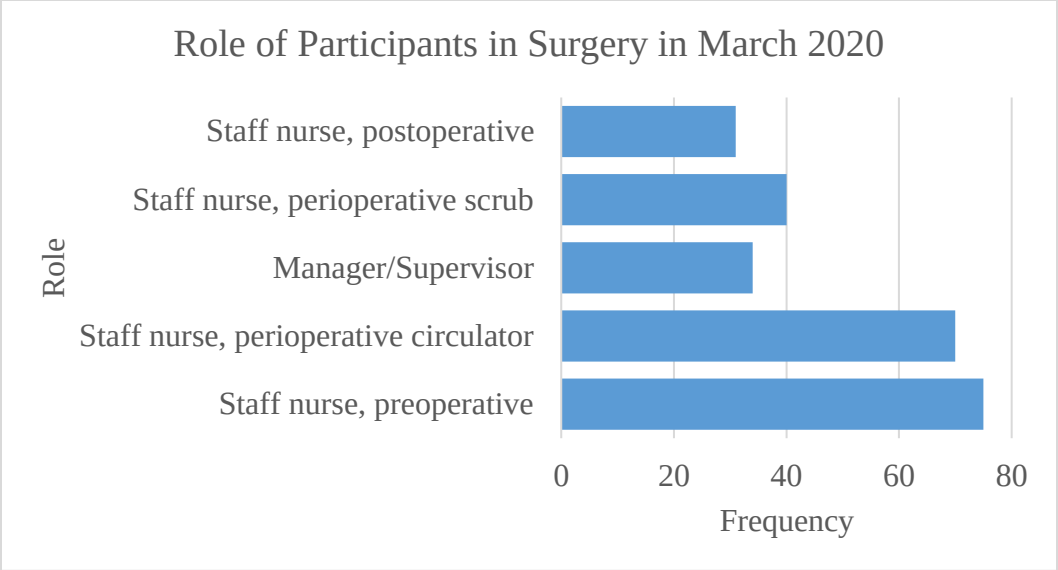

Figure 3. Role of Participants in Surgery in March 2020 by Role

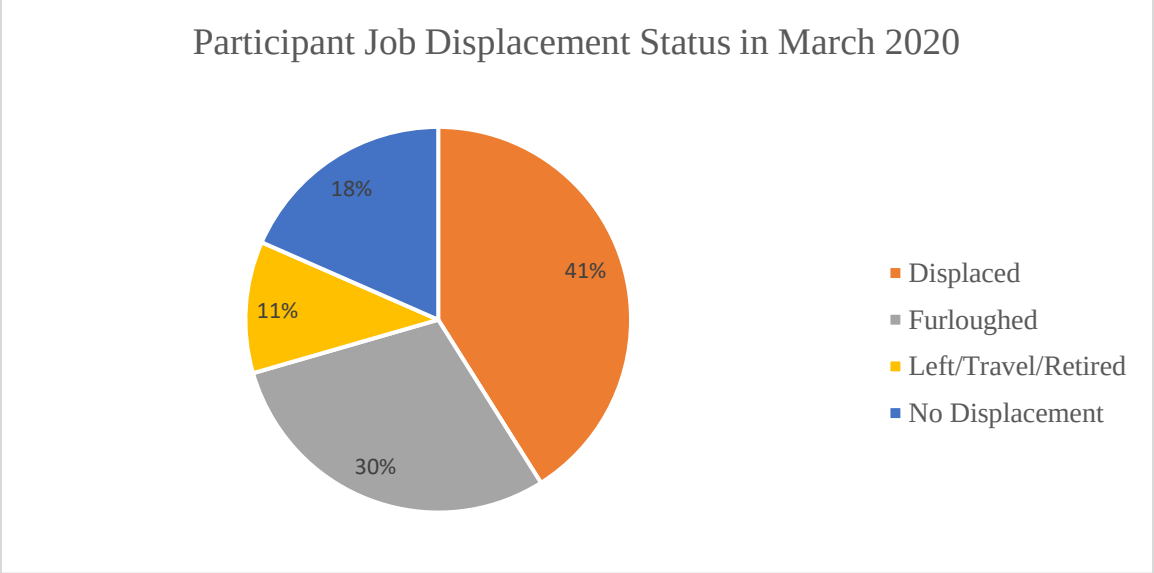

Figure 4. Participant Job Displacement Status in March 2020

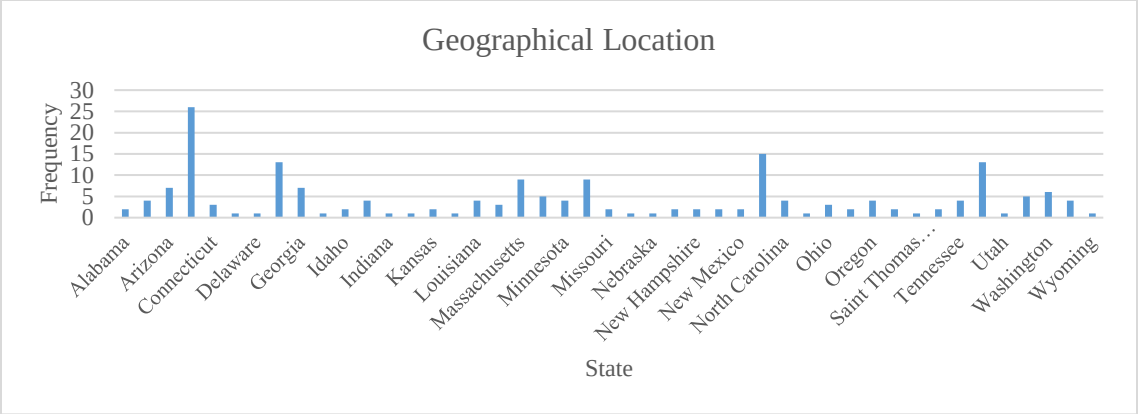

Figure 5. Geographical Location of Participants in March 2020

Analysis

After descriptive statistics were analyzed, the researcher transformed the four variables needed to answer the research question (Insurance Availability, Intrinsic Motivation, Childcare Availability, and Shift Change) into dichotomous variables. This analysis was done by converting responses that agreed with the statement into one group (e.g., childcare available) and responses that disagreed with the statement into another group (e.g., no childcare available). The researcher also discarded any response that registered “neither agree nor disagree” as this would skew results. Since those without displacement never left the surgery department, those responses were not included in subsequent analyses. As those participants who left healthcare entirely/became travel nurses/retired are no longer working in a surgery department, those responses were not included in the subsequent analyses. Due to the exclusion of neutral responses as well as participant groups that had no displacement and left healthcare entirely, the number of responses for each variable dataset was adjusted.

This research addressed the following research question and hypotheses:

1. Did the following variables influence surgical RNs' decision to return to the surgical department?
    a. Insurance Availability?
        i. Null Hypothesis ($H1_0$): There is no relationship between insurance availability and participant returns to a surgical department.
        ii. Alternative Hypothesis ($H1_a$): There is a relationship between insurance availability and participant returns to a surgical department.
    b. Intrinsic Motivation/Feeling of Choice regarding decision?
        i. Null Hypothesis ($H1_0$): There is no relationship between the participant's feeling of choice regarding job displacement status and return to a surgical department.
        ii. Alternative Hypothesis ($H1_a$): There is a relationship between the participant's feeling of choice regarding job displacement status and return to a surgical department.
    c. Childcare Availability?
        i. Null Hypothesis ($H1_0$): There is no relationship between childcare availability and participant returns to a surgical department.
        ii. Alternative Hypothesis ($H1_a$): There is no relationship between childcare availability and participant returns to a surgical department.
    d. Shift Change due to COVID-19 shutdown?

i. Null Hypothesis ($H1_0$): There is no relationship between shift change of participants due to COVID-19 shutdowns and participant return to a surgical department.
ii. Alternative Hypothesis ($H1_a$): There is no relationship between shift change of participants due to COVID-19 shutdowns and participant return to a surgical department.

A contingency analysis was used to determine if there was a relationship between insurance availability and participant return to the surgery department after furlough or displacement. Based on the data collected (N=109), 79 (81.4%) participants who returned to a surgical department had insurance availability and 7 (58.3%) participants who returned to the surgical department did not have insurance availability. We do not have evidence to suggest there is a difference in the proportion of surgical nurses who returned to a surgical department by insurance availability, p=0.064. For this research question, the researcher will fail to reject the null hypothesis.

A contingency analysis was performed to determine if there was a relationship between participants' feelings of choice regarding job displacement status and return to a surgical department. Based on the data collected (N=137), 49 (0.70%) participants who returned to a surgical department felt that they had a choice in their job displacement status and 49 (73.1%) participants who returned to a surgical department felt they had no choice in their job displacement status. There is not enough evidence to suggest a difference in the proportion of surgical nurses that returned to a surgical department by feeling of having a choice, p=0.684). For this research question, the researcher will fail to reject the null hypothesis.

A contingency analysis was completed to determine if there was a relationship between participant childcare availability and return to a surgical department. Based on the data collected (N=90), 43 (70.5%) participants who returned to a surgical department had readily available childcare and 17 (58.6%) participants who returned to a surgical department did not have available childcare. There is not enough evidence to suggest a difference in the proportion of surgical nurses that returned to a surgical department by childcare availability, p=0.264. For this research question, the researcher will fail to reject the null hypothesis.

A contingency analysis was performed to determine if there was a relationship between participant shift change and return to a surgical department. Based on data collected (N=119), 17 (73.9%) participants who returned did not experience a shift change and 71 (74.0%) participants did experience a shift change. We have limited evidence of a relationship between shift change and return to a surgical department among participants, p=0.996. For this research question, the researcher will fail to reject the null hypothesis.

Additional Factors

The final question on the data collection survey was "Are there any additional factors that influenced your decision regarding job displacement due to COVID-19?" This question was a text entry item. Of the 190 participants, 150 (78.9%) responses had text entered. 74 (38.9%) responses were "No."

There were more detailed responses from other participants such as:

- "Chose not to panic. Worked in both OR and displaced to ICU. Worked more during COVID shutdown than prior."

- "I have an airway condition that my doctor advised I not work until that was resolved. I had a surgical procedure in April of 2020 and returned to work in May of 2020, with no increased personal health risk at that time."
- "I work at an outpatient surgical clinic. My hours were severely cut during the pandemic. I was able to pick up part-time shifts at an assisted living/memory care unit."
- "My current contract was extended for 3 additional weeks as my next one was postponed. They postponed my start date 2 times, so I ended up going on unemployment assistance for 1 month as there was no guaranteed start date."
- "My hospital didn't live up to its promise and increased my workload, making me reluctant to stay."
- "I was forced to move to a different facility because they closed ours at the end of May. Did not offer options such as severance."
- "I was a salaried employee, changed to hourly without notification. Asked not to use PTO to fill loss hours gap. Changed jobs in September 2020."

A few less detailed responses included:

- "Long-term symptoms of COVID-19,"
- "Mental health,"
- "Fear of carrying the infection to my family."

Limitations

The data collected for this project was limited. While the survey was distributed to nurses, many surgical nurses who have changed departments or careers may not have

completed the survey due to the survey's title, "Surgical Nurse Job Displacement Survey." This limitation indicates a need for further extensive research to examine nursing job displacement in general due to the impact of COVID-19 on the hospital system.

In this research, most data were collected utilizing Likert-scale items. This method made it difficult to assess participants' true experiences. There were questions on the survey that would have been more reflective of participant experience if they had been posed as dichotomous variables rather than a Likert-scale item. Likert-scale items can be difficult for participants to truly understand, and thus, the researcher may not get accurate data for all participants.

Despite safety practices built into online survey programs, it is exceptionally challenging to safeguard against bot infiltration of online survey research (Simone, 2019). The researcher did not require a password lock to participate in survey. Due to this fact, this survey had many responses from bots. This survey received a total of 1452 responses via Qualtrics®, but data cleaning led to the removal of 1262 (86.9%) surveys from the initial dataset. Bot activity is a huge limitation of online survey research and needs to be addressed through additional research.

Summary

This research was done to determine whether the predictor variables (insurance availability, intrinsic motivation, childcare availability, and shift change) had a statistically significant relationship with the outcome variable (return to a surgical department). The data was collected using an instrument created by the researcher that consisted of three sections: a Surgical Nursing Job Displacement Survey, an Intrinsic

Motivation Inventory, and a Demographic Questionnaire. The survey had a total of 26 items and the data was coded appropriately and analyzed using SPSS® to complete Chi-square analyses. The results showed no statistically significant results between the outcome variable (return to a surgical department) and the predictor variables (insurance availability, intrinsic motivation, childcare availability, and shift change). Therefore, there is a need for more extensive research regarding the job displacement of surgical nurses in the future.

CHAPTER V – DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

Interpretation of Findings

This research was completed to explore the impact of COVID-19 surgical department shutdowns on current surgical staffing by collecting data from participants via an online survey. The survey explored different factors such as health insurance availability, childcare availability, shift change, and intrinsic motivation to determine the effect these factors had on surgical RNs' decisions regarding job displacement status immediately post-COVID-19 surgical department shutdowns. Chi-square analyses indicated that there were no statistically significant relationships between the dependent variable (Job Displacement Status) and the independent variables (Health Insurance Availability, Childcare Availability, Shift Change, and Intrinsic Motivation). These findings suggest that there was something else that impacted surgical RNs' decisions regarding job displacement status immediately post-COVID-19 surgical department shutdowns and warrants additional research in the future.

Surgical Staff Motivation and Engagement Post COVID-19

The theoretical framework of this research suggested that workers are motivated by three main things: autonomy, competence, and relatedness. This research explored surgical staffing and job displacement immediately after post-COVID-19 shutdowns The Intrinsic Motivation Inventory used for this research explored feelings of autonomy in choice regarding job displacement status. Of the 190 participants in this study, 78 (41.1%) chose to be displaced and 56 (29.5%) chose to furlough. Of those 134 participants, 100 (74.6%) chose to return to a surgical department and 34 (25.4%) chose to stay where they had been displaced. In collecting data from participants via the

Intrinsic Motivation Inventory, it was clear that many participants felt that they did not have a choice regarding job displacement status. Of the 190 participants, 89 (46.1%) felt they had no choice regarding job displacement and 95 (49.2%) felt they did have a choice in their decision regarding job displacement. While these numbers are not statistically significant, they represent feelings of discontent among those nurses who were either displaced or furloughed. The displacement in conjunction with the feeling of lack of control over job displacement status could have long-lasting effects on surgical staffing in the United States. This finding in itself indicates the need for more research regarding surgical staffing shortages.

The literature review examined topics of healthcare staffing shortages due to COVID-19 as well as the engagement of staff in a post-COVID-19 era. The literature suggests solid arguments for discontent and disengagement of nurses due to increased workloads and toxic work environments. Through this research and future research on staffing shortages in surgical departments, hopefully, the shortages can lessen, and employees can become fully engaged in their work in surgical departments again.

Recommendations for Surgical RN Staffing and Future Research

While there are staffing crises nationwide in all industries, surgical RNs are demonstrating their resiliency and strength in demanding times. The staff working in surgical departments are truly impressive. While staffing has decreased significantly post-COVID-19 shutdowns, many surgical departments are still functioning at a normal capacity. This situation means that those staff members are working longer and harder than they were before COVID-19. According to the American College of Surgeons

(2023), around 15 million Americans have surgeries in the United States annually. Therefore, surgical RNs feeling engaged at work and improving retention levels is vital.

Studies have been, and are continuing to be, done that are studying retention and employee engagement at work. However, more research needs to be conducted regarding the retention and engagement of surgical staff, in particular. As it is such an arduous job and is completed in a stressful environment, employee engagement should be examined in a different light.

The research conducted within this study has highlighted that there are many factors influencing surgical nurses' decisions regarding job displacement status. Advanced studies of a qualitative nature could help determine what some of those factors were. This approach would give surgical nurses a chance to share their personal experiences regarding surgical department shutdowns as well as current staffing shortages.

Conclusion

The purpose of this study was to explore the impact of COVID-19 surgical department shutdowns on the current staffing shortages as well as trying to determine whether the factors explored influenced participants' decisions regarding job displacement status. Findings indicated that there was a large group of surgical nurses who were displaced and furloughed due to COVID-19 surgical department shutdowns. While a majority of participants in this study were furloughed or displaced, most of them chose to return to their positions within the surgical department once the department reopened. The factors explored in this study (health insurance availability, childcare availability, intrinsic motivation, and shift change) ultimately did not have a statistically

significant impact on participants' decisions regarding job displacement status. However, these research findings prove the need for further research concerning surgical staffing shortages.

APPENDIX A – Surgical Registered Nurse Job Displacement Survey

Directions: The following questions aim to gauge the impact of COVID-19 on staffing in surgical departments. Please read each item and answer accordingly.

1. In April 2020, there was a nationwide shutdown of surgical departments. When this shutdown occurred, many were displaced from their jobs. From the following selections, what best describes your job displacement?
   - ☐ Furloughed for an unknown time with the intent to return to your current position
   - ☐ Displaced and redirected to another unit within your hospital
   - ☐ Retired/left health care entirely
   - ☐ No displacement- continued to work in the surgical department through the shutdown
2. For those registered nurses that were <u>furloughed for an unknown time with the intent to return to the surgical department:</u>

1= Strongly Disagree 2= Disagree 3= Neither Agree nor Disagree 4= Agree 5= Strongly Agree

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I returned to my position within the surgical department once the department reopened.	·	·	·	·	·
I was able to obtain supplemental income at home in addition to income earned from being a registered nurse.	·	·	·	·	·
There were readily available childcare options when I went back to work.	·	·	·	·	·
Childcare options had no effect on my ability to work post-COVID-19 shutdowns.	·	·	·	·	·
I was able to retain health insurance during furlough through my current employer.	·	·	·	·	·
I was able to obtain health insurance during furlough through my spouse's work.	·	·	·	·	·

I was able to obtain health insurance through the open healthcare insurance marketplace.	·	·	·	·	·
I did not have health insurance coverage during the furlough.	·	·	·	·	·
The availability of insurance had no effect on my ability to work during post-COVID-19 shutdowns.	·	·	·	·	·
The shift I was working changed due to COVID-19 shutdowns.	·	·	·	·	·
Changes regarding the shift that I worked prior to the COVID-19 shutdown affected my decision regarding job displacement status.	·	·	·	·	·
The COVID-19 vaccine or refusal to vaccinate affected my decision regarding job displacement status.					

3. For those registered nurses that were <u>displaced and redirected to another unit within your hospital</u>:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I returned to my position within the surgical department once the department reopened.	·	·	·	·	·
I continued to work in the unit to which I was displaced after the surgical department reopened.					
I was able to obtain supplemental income at home in addition to income earned from being a registered nurse.	·	·	·	·	·
There were readily available childcare options when I went back to work.	·	·	·	·	·

Childcare options had no effect on my ability to work post-COVID-19 shutdowns.	·	·	·	·	·
I was able to retain health insurance during furlough through my current employer.	·	·	·	·	·
I was able to obtain health insurance during furlough through my spouse's work.	·	·	·	·	·
I was able to obtain health insurance through the open healthcare insurance marketplace.	·	·	·	·	·
I did not have health insurance coverage during the furlough.	·	·	·	·	·
The availability of insurance had no effect on my ability to work during post-COVID-19 shutdowns.	·	·	·	·	·
The shift I was working changed due to COVID-19 shutdowns.	·	·	·	·	·
Changes regarding the shift that I worked prior to the COVID-19 shutdown affected my decision regarding job displacement status.	·	·	·	·	·
The COVID-19 vaccine or refusal to vaccinate affected my decision regarding job displacement status.					

4. For those registered nurses that retired early/left nursing altogether:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I returned to my position within the surgical department once the department reopened.	·	·	·	·	·
I was able to obtain supplemental income at home in addition to income earned from being a registered nurse.	·	·	·	·	·

There were readily available childcare options when I went back to work.	·	·	·	·	·
Childcare options had no effect on my ability to work post-COVID-19 shutdowns.	·	·	·	·	·
I was able to retain health insurance during furlough through my current employer.	·	·	·	·	·
I was able to obtain health insurance during furlough through my spouse's work.	·	·	·	·	·
I was able to obtain health insurance through the open healthcare insurance marketplace.	·	·	·	·	·
I did not have health insurance coverage during the furlough.	·	·	·	·	·
The availability of insurance had no effect on my ability to work during post-COVID-19 shutdowns.	·	·	·	·	·
The shift I was working changed due to COVID-19 shutdowns.	·	·	·	·	·
Changes regarding the shift that I worked prior to the COVID-19 shutdown affected my decision regarding job displacement status.	·	·	·	·	·
The COVID-19 vaccine or refusal to vaccinate affected my decision regarding job displacement status.	·	·	·	·	·
I left my position to take a travel position/contract job.	·	·	·	·	·

5. For those nurses that had no displacement and continued to work in a surgical department during COVID-19 shutdowns:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I continued to work in my position within the surgical department once the department reopened.	·	·	·	·	·
I was able to obtain supplemental income at home in addition to income earned from being a registered nurse.	·	·	·	·	·
There were readily available childcare options when I went back to work.	·	·	·	·	·
Childcare options had no effect on my ability to work post-COVID-19 shutdowns.	·	·	·	·	·
I was able to retain health insurance during furlough through my current employer.	·	·	·	·	·
I was able to obtain health insurance during furlough through my spouse's work.	·	·	·	·	·
I was able to obtain health insurance through the open healthcare insurance marketplace.	·	·	·	·	·
I did not have health insurance coverage during the furlough.	·	·	·	·	·
The availability of insurance had no effect on my ability to work during post-COVID-19 shutdowns.	·	·	·	·	·
The shift I was working changed due to COVID-19 shutdowns.	·	·	·	·	·
Changes regarding the shift that I worked prior to the COVID-19 shutdown affected my decision regarding job displacement status.	·	·	·	·	·

The COVID-19 vaccine or refusal to vaccinate affected my decision regarding job displacement status.	·	·	·	·	·

APPENDIX B - Intrinsic Motivation Perceived Choice Subscale

Think about the decision you made regarding job displacement at the time that surgical departments shut down due to COVID-19. Please rate the following statements on a scale of 1-5, with 1=very false, 2=somewhat false, 3=neither true nor false, 4=somewhat true, and 5= very true.

	Very False	Somewhat False	Neither True nor False	Somewhat True	Very True
I believe I had some choice about doing this activity.	·	·	·	·	·
I feel like it was not my own choice to do this task.	·	·	·	·	·
I didn't really have a choice about doing this task.	·	·	·	·	·
I felt like I had to do this.	·	·	·	·	·
I did this activity because I had no choice.	·	·	·	·	·
I did this activity because I wanted to.	·	·	·	·	·
I did this activity because I had to.	·	·	·	·	·

APPENDIX C Demographic Questionnaire

1. What was your age in 2020?
    - 18-24
    - 25-34
    - 35-44
    - 45-54
    - 55-64
    - 65-74
2. How many years had you worked in a surgical department in March 2020?
    - Less than 1 year
    - 1-5 years
    - 6-10 years
    - 10-15 years
    - 15-20 years
    - More than 20 years
3. How many years had you worked as a registered nurse in a surgical department in March 2020?
    - Less than 1 year
    - 1-5 years
    - 6-10 years
    - 10-15 years
    - 15-20 years
    - More than 20 years
4. What was your role in the surgical department in March 2020? Select all that apply.
    - Manager
    - Staff nurse, preoperative
    - Staff nurse, perioperative circulator
    - Staff nurse, perioperative scrub
    - Staff nurse, postoperative
5. What is your gender identity?
    - Male
    - Female
    - Transgender
    - Non-binary
    - Prefer not to answer
6. What is your ethnicity?
    - White/Caucasian
    - Black/African American
    - American Indian or Alaskan native
    - Asian
    - Hispanic or LatinX
    - Multiple ethnicities
    - Prefer not to answer

7. What is your marital status in March 2020?
    - Single
    - Married or in a domestic partnership
    - Widowed
    - Divorced
    - Separated
8. What was your total household income in 2020 (including you and your partner if applicable)?
    - $10,000 to $19,999
    - $20,000 to $29,999
    - $30,000 to $30,999
    - $40,000 to $49,999
    - $50,000 to $59,999
    - $60,000 to $60,999
    - $70,000 to $79,999
    - $80,000 to $89,999
    - $90,000 to $99,999
    - $100,000 to $150,000
    - $150,000 or more
9. What was your employment status in March 2020?
    - Full-time employee (36 or more hours)
    - Part-time (24-35 hours)
    - PRN or per diem (less than 24 hours)
    - Travel Nurse
    - Retired
    - Unemployed
    - Student
10. What shift did you work in March 2020?
    - 8-hour days
    - 8-hour nights
    - 10-hour days
    - 10-hour nights
    - 12-hour days
    - 12-hour nights
11. In which U.S. state or territory did you live during March 2020?
    - Please list
12. Are there any additional factors that influenced your decision regarding job displacement due to COVID-19?
    - Please list

APPENDIX D – IRB Approval Letter

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NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER:	22-1555
PROJECT TITLE:	Surgical Staffing Job Displacement
SCHOOL/PROGRAM	Systems Leadership & Health Outcome
RESEARCHERS:	PI: Phoenix Neal Investigators: Neal, Phoenix~Story, Jennifer~
IRB COMMITTEE ACTION:	Approved
CATEGORY:	Expedited Category
PERIOD OF APPROVAL:	29-Nov-2022 to 28-Nov-2023

Donald Sacco Jr.

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

APPENDIX E – Email Communication for Survey Distribution and Recruitment

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Research Study: Participants Needed

Surgical Staffing Shortage Regarding Job Displacement Due to COVID-19

Dear Colleague,

My name is Phoenix Neal. I am a student at the University of Southern Mississippi (USM) in the Nursing Leadership PhD program. I am conducting a survey on the surgical staffing shortage regarding job displacement due to COVID-19. The study will be available between **12/15/2022 and 1/15/2023 and will give you the chance to enter in a drawing for a $20 VISA gift card**.

Participation in this survey will give you the chance to submit your information for a drawing of a $20 VISA gift card. 5 participants will be chosen from the drawing. Participants must be a registered nurse (RN) who worked in a surgical department prior to COVID-19 pandemic shutdown for at least 6 months. Participants must be willing to sign a consent form for participation and must be willing to participate in a zoom interview if certain criteria are met. This survey can only be completed once per participant.

If you meet the requirements of this study, I would appreciate your participation by clicking the link below.

All information contained in this study will be used for research purposes only. This study has been approved by the Institutional Review Board (IRB) at the University of Southern Mississippi, under IRB research protocol number (IRB –22-1555). After the completion of data compilation and analysis, all information will be deleted. Your personal information given for the drawing is not included in the survey data.

The survey is 26 questions and should take around 20-30 minutes to complete. All participants must complete the entirety of the survey to be entered to win the **$20 VISA gift cards**.

By clicking on the link below, you consent to participate in this study on surgical staffing shortages regarding job displacement due to COVID-19.

TAKE SURVEY

Thank you for considering participating.

Phoenix Neal, BSN, RN
College of Nursing and Health Professionals
University of Southern Mississippi

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