

Surviving the Chaos of Covid-19: Exploring the Impact of the Pandemic on the Mental Health
and Well-Being of Northern Ontario Nurses

by

Disal Vindula Wickramasinghe

A thesis submitted in fulfillment
of the requirements for the degree of
MSc Interdisciplinary Health

Faculty of Graduate Studies
Laurentian University
Sudbury, Ontario, Canada

© Disal Wickramasinghe, 2024

THESIS DEFENCE COMMITTEE/COMITÉ DE SOUTENANCE DE THÈSE
Laurentian University/Université Laurentienne
Office of Graduate Studies/Bureau des études supérieures

Title of Thesis
Titre de la thèse Surviving the Chaos of Covid-19: Exploring the Impact of the Pandemic on the Mental Health and Well-Being of Northern Ontario Nurses

Name of Candidate
Nom du candidat Wickramasinghe, Disal Vindula

Degree

Diplôme Master of Science

Department/Program Date of Defence
Département/Programme MSc Interdisciplinary Health Date de la soutenance December 14, 2023

APPROVED/APPROUVÉ

Thesis Examiners/Examineurs de thèse:

Dr. Judith Horrigan
(Supervisor/Directeur(trice) de thèse)

Dr. Behdin Nowrouzi-Kia
(Committee member/Membre du comité)

Dr. Basem Gohar
(Committee member/Membre du comité)

Approved for the Faculty of Graduate Studies
Approuvé pour le Faculté des études supérieures
Tammy Eger, PhD
Vice-President Research (Faculty of Graduate Studies)
Vice-rectrice à la recherche (Faculté des études supérieures)
Laurentian University / Université Laurentienne

Dr. Mélanie Lavoie-Tremblay
(External Examiner/Examineur externe)

ACCESSIBILITY CLAUSE AND PERMISSION TO USE

I, **Disal Vindula Wickramasinghe**, hereby grant to Laurentian University and/or its agents the non-exclusive license to archive and make accessible my thesis, dissertation, or project report in whole or in part in all forms of media, now or for the duration of my copyright ownership. I retain all other ownership rights to the copyright of the thesis, dissertation or project report. I also reserve the right to use in future works (such as articles or books) all or part of this thesis, dissertation, or project report. I further agree that permission for copying of this thesis in any manner, in whole or in part, for scholarly purposes may be granted by the professor or professors who supervised my thesis work or, in their absence, by the Head of the Department in which my thesis work was done. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that this copy is being made available in this form by the authority of the copyright owner solely for the purpose of private study and research and may not be copied or reproduced except as permitted by the copyright laws without written authority from the copyright owner.

Abstract

The study addressed the impact of the Coronavirus-19 (COVID-19) pandemic on the mental health of registered nurses (RNs) and registered practical nurses (RPNs) in Northern Ontario. The research question was: The research question guiding this study was: What are the perceived mental health impacts of COVID-19 on Northern Ontario registered nurses and registered practical nurses working during the pandemic?

A total of 127 nurses provided qualitative comments which were analyzed following Helvi Kyngäs et al.'s (2020) content analysis methodology, and the adapted Nursing Worklife model guided the interpretation. The key theme was Surviving the Chaos of COVID-19 and was supported by four themes and two subthemes: 1) Threats to Nurses' Health and Well-being (with sub-themes: a) threats to nurses' mental and emotional health and b) threats to nurses' safety), 2) Cut Off from the Familiar, 3) Systemic Chaos, and 4) Navigating Diminished Supports and Resources. The results highlighted concerns about nurses' mental health and adverse workplace conditions, offering valuable insights for healthcare institutions to enhance working conditions and address threats to nurses' health during future global health crises.

Keywords

The following key words could be used to describe the thesis: Registered nurses, Registered practical nurses, Mental health, Mental health impacts, COVID-19 pandemic, Northern Ontario, Content Analysis.

ACKNOWLEDGEMENTS

I am grateful for the generous support and encouragement of many people who supported me in the journey to complete this thesis: I am grateful to my thesis supervisor, Dr. Judith Horrigan, my thesis supervisor who has helped me to grow as a researcher and provided guidance that enabled me to strive for continued excellence. I also want to extend my thanks to my supervisory committee, consisting of Dr. Basem Gohar and Dr. Behdin-Nowrouzi-Kia, for believing and encouraging this effort. I am grateful for all their feedback and the continued support they have provided throughout this process. I would like to extend my gratitude to the Centre for Research in Occupational Safety and Health for providing a seed grant as financial support for this research study. Lastly, I am grateful to my family, consisting of my mom, dad and little sister, for providing me with the morale, love and appreciation that supported me on my journey.

Table of Contents

Abstract.....	II
ACKNOWLEDGEMENTS.....	III
Chapter 1: INTRODUCTION AND BACKGROUND OF THESIS.....	1
1.1 Coronavirus-19 and its Impact on Healthcare Systems and Healthcare Professionals.....	2
1.2 Canadian Nursing Profession and Code of Ethics	3
1.2.1 Providing Safe, Compassionate, Competent and Ethical Care	4
1.2.2 Promoting Health and Well-being	4
1.2.3 Promoting and Respecting Informed Decision-making.....	5
1.2.4 Honouring Dignity.....	5
1.2.5 Maintaining Privacy and Confidentiality.....	5
1.2.6 Promoting Justice.....	6
1.2.7 Being Accountable.....	7
1.3 Quality Practice Environments of Canadian Nurses.....	7
1.3.1 Communication and Collaboration.....	8
1.3.2 Responsibility and Accountability.....	9
1.3.3 Safe and Realistic Workloads	10
1.3.4 Leadership.....	10
1.3.5 Professional Development	11
1.3.6 Workplace Culture	12
1.5 Ethical Dilemmas of Nursing Practice Environments	14

1.5.1 Definitions of Ethical Dilemmas, Ethical Disengagement, and Ethical Distress and Moral Injury	15
1.5.2 Consequences of Ethical Dilemmas, Ethical Disengagement and Moral Distress	16
1.6 Summary of Background for Research.....	17
CHAPTER 2: REVIEW OF THE LITERATURE AND RATIONALE FOR RESEARCH.....	19
2.1 Literature Review Overview.....	19
2.2 Nurses' Quality of Worklife and Mental Health Outcomes Prior to the Pandemic.....	22
2.2.1 Nursing Quality of Worklife Prior to the Pandemic	23
2.2.2 Nurses' Mental Health Factors Prior to the Pandemic.....	30
2.2.3.3 Summary of Nurses' Quality of Worklife and Mental Health Prior to the Pandemic	31
2.3 Nurses' Quality of Worklife and Mental Health During the Pandemic.....	32
2.3.1 Nurses' Quality of Worklife During the Pandemic	33
2.3.2 Nurses' Mental Health Outcomes During the Pandemic.....	36
2.4 Mental Health Outcomes	40
2.4.1 Anxiety, Depression, Stress, PTSD	40
2.4.2 Anxiety, Depression, Stress	42
2.4.3 Anxiety.....	43
2.4.4 Stress	44
2.4.5 Post-traumatic stress disorder (PTSD).....	45
2.5 Workplace Factors Affecting Nurses.....	46
2.5.1 Staffing Inadequacy	46

2.5.2 Resource Adequacy	47
2.5.3 Workplace Safety.....	48
2.6 Support Availability.....	49
2.6.1 Lack of Support.....	50
2.7 Synthesis of Literature Prior to and during the pandemic	52
2.8 Synthesis of Literature	53
2.9 Literature Review Limitations	55
2.10 Rationale for Study	56
2.11 Adapted Theoretical Framework	56
2.12 Summary	59
CHAPTER 3: METHODOLOGY AND METHODS	61
3.1 Purpose.....	61
3.2 Operational Study Definitions	61
3.2.1 Mental Health.....	61
3.2.2 Anxiety.....	62
3.2.3 Depression.....	62
3.2.4 Stress	63
3.2.5 Post-traumatic Stress Disorder (PTSD)	63
3.2.6 Burnout	63
3.2.7 Moral Distress	64
3.2.8 Moral Injury	64

3.3 Definition of Nurses.....	65
3.4 Setting	65
3.5 Research Design.....	65
3.6 Inductive Content Analysis Research Method.....	65
3.7 Ethical Considerations	66
3.8 Sample Size.....	66
3.9 Recruitment.....	66
3.10 Data Collection	67
3.11 Data Analysis	68
3.11.1 Inductive Content Analysis.....	68
3.11.2 Demographic Analysis of Participants.....	71
3.12 Methodological Rigour	71
3.13 Reflexivity.....	73
3.14 Summary.....	74
CHAPTER 4: RESULTS	76
4.1 Introduction.....	76
4.2 Demographic Results of Nurses.....	76
4.3 Qualitative Findings: Surviving the Chaos of COVID-19.....	78
4.3.1 Theme 1: Threats to Nurses’ Health and Well-being	79
4.3.1.1 Threats to Nurses’ Mental and Emotional Health.....	79

4.3.1.2 Threats to Nurses' Safety.....	79
4.3.2 Cut Off from the Familiar.....	81
4.3.3 Systemic Chaos.....	83
4.3.4 Navigating Diminished Supports and Resources.....	85
4.4 Summary.....	86
CHAPTER 5: DISCUSSION.....	88
5.1 Key Theme: Surviving the Chaos of COVID-19.....	88
5.2 Theme 1: Threat to Nurses' Health and Well-being.....	89
5.2.1 Subtheme a): Threats to Nurses' Mental and Emotional Health.....	89
5.2.2 Subtheme b): Threats to Nurses' Safety.....	90
5.3 Theme 2: Cut Off from the Familiar.....	91
5.4 Theme 3: Systemic Chaos.....	92
5.5 Theme 4: Navigating Diminished Supports and Resources.....	94
5.6 Summary.....	95
5.7 COVID-19 Implications on Nurses.....	96
5.8 Limitations.....	99
5.9 Recommendations for Health Service Policy Decision-Makers.....	99
5.10 Future Research.....	102
5.11 CONCLUSION.....	103
References.....	105

List of Tables

Table 1.0: Examples of Transcription Conventions 68

Table 2.0: Demographic Information of Nurse Participants..... 77

List of Figures

Figure 1.0 Literature Review Methodology.....	20
Figure 2:0 Adapted Nursing Worklife Model.....	57
Figure 3.0 Formation of Main Themes from Open Codes.....	70
Figure 4.0 Surviving the Chaos of COVID-19	78

List of Appendices

Appendix A Map of Northern Ontario.....	137
Appendix B Critical Appraisal Tools	138
Appendix C Laurentian University Research and Ethics Approval	148
Appendix D COVID-19 Research Study Recruitment Description	149
Appendix E Informed Consent	150
Appendix F Demographic Questionnaire and Copenhagen Psychological Questionnaire (COPSOQ-III) with modified section.....	153
Appendix G Transcription Conventions	166

Chapter 1: INTRODUCTION AND BACKGROUND OF THESIS

This thesis presents results from the qualitative phase of a sequential explanatory mixed-methods study (Almeida, 2018; Harrison et al., 2020) that explored the mental health of registered nurses (RNs) and registered practical nurses (RPNs) who were working in Northern Ontario during the COVID-19 pandemic. Northern Ontario covers 90% of Ontario's landmass, consisting of 144 municipalities, 106 First Nations Reserves, 10 territorial districts, and over 150 unincorporated communities (Government of Ontario, 2018). The Ontario provincial government currently defines Northern Ontario as covering the following regions: Nipissing, Parry Sound, Manitoulin, Timiskaming, Sudbury, Algoma, Cochrane, Thunder Bay, Rainy River, and Kenora (Government of Ontario, 2018). Appendix A provides a map of Northern Ontario and its encompassing landmasses. In 2022, 6,321 RNs and 3,631 RPNs were practicing in the Northern Ontario region (College of Nurses of Ontario, 2022).

Chapter one offers contextual details on the COVID-19 pandemic, the nursing profession, the roles of nurses, and ethical guidelines that underscore the safe and competent provision of patient care. Furthermore, it examines the attributes of a quality practice environment in nursing, as well as a description of Northern Ontario as a setting. Chapter two presents a review of the literature outlining factors that affected the working conditions and mental health of nurses in North America prior to and during the COVID-19 pandemic. In addition, the chapter will discuss information on the way the adapted theoretical framework was used to interpret the findings. Chapter three presents the purpose, research design, methodology, data collection and analysis methods used for this thesis. Chapter four provides the study results, while chapter five concludes with a discussion of overall findings, limitations of the study, implications for the

nursing profession, and recommendations to help healthcare institutions to better support the mental health of nurses.

1.1 Coronavirus-19 and its Impact on Healthcare Systems and Healthcare Professionals

Coronavirus-19, or COVID-19, was declared a global pandemic by the World Health Organization on March 11, 2020 (World Health Organization, 2020). Following the initial outbreak, the pandemic spread to every country globally. The pandemic has had adverse effects on national economies and businesses, with governments implementing and enforcing lockdown measures to curb the spread of the virus (Jones et al., 2020). Similarly, healthcare systems have been impacted as well, leading to disruptions in other hospital services such as surgeries in Canada due to the surge in COVID-19 hospital admissions (Canadian Institute for Health Information [CIHI], 2020). In comparison to 2019, there were approximately 560,000 fewer surgeries performed in Canadian hospitals. Canadian hospitals performed approximately 560,000 fewer surgeries during the first 16 months since the onset of the COVID-19 pandemic, as compared to the year 2019 (CIHI, 2021).

The pandemic has shed light on pre-existing problems in the healthcare system, which has exacerbated the stress and workload on healthcare professionals such as nurses, as made evident by research (Phoenix Australia – Centre for Posttraumatic Mental Health [PACPMH], 2020). The COVID-19 virus has put nursing staff, particularly those caring for COVID-19 patients, under an unexpected amount of pressure and anxiety (Lavoie-Tremblay et al., 2021). In addition to these changes, nurses have had to manage increased patient admissions, expanded bed capacity, and caring for critically ill patients. Many nurses have also been deployed to unfamiliar work settings, which has added to their stress and burnout levels. These challenges may have

adverse effects on their physical and mental well-being, work performance, and the quality of patient care (Lavoie-Tremblay et al., 2021).

1.2 Canadian Nursing Profession and Code of Ethics

More than 10% of all Canadians in the labour force were employed in the health sector (Silas, 2022). Most of the regulated health professionals in Canada are nurses, who make up nearly half of the whole health workforce (Silas, 2022). There are various nursing classifications in Canada, including RNs, RPNs, and licensed practical nurses (LPN) (Canadian Nurses Association [CNA], 2017). Annually, nurses must fulfill their respective provincial renewal requirements to continue working as licensed nurses. Nurses, as regulated healthcare professionals, must abide by a code of ethics, and professional practice standards that guides their decisions and the care they provide to their patients (CNA, 2017).

Nursing ethics encompasses a wide range of moral principles and ideals that direct nursing practice, placing a high priority on the understanding of the social determinants of health that affect people's health and welfare (Mahony & Jones, 2013). Social determinants of health refer to a wide range of factors, including poverty, economic inequality, social status, education, employment and job security, social support, and food security (Mahony & Jones, 2013). By participating in discussions with colleagues and obtaining advice from ethical specialists, nurses can improve their knowledge and abilities linked to ethical decision-making and increase their capacity to deliver ethical care (CNA, 2017). The seven primary nursing values and ethical responsibilities are: “1) providing safe, compassionate, competent and ethical care, 2) promoting health and well-being, 3) promoting and respecting informed decision-making, 4) honouring dignity, 5) maintaining privacy and confidentiality, 6) promoting justice and 7) being accountable” (CNA, 2017, p. 3).

1.2.1 Providing Safe, Compassionate, Competent and Ethical Care

It is essential for nurses to act ethically since they play a central role in providing patients with safe, compassionate, and ethical care (CNA, 2017). In addition to their duties as caregivers, nurses must report any hazardous, unethical, or irresponsible behaviour or circumstances that would limit their ability to provide secure and ethical care. It ensures that patients receive the best possible care and that nursing practices remain ethical and up-to-date. Nurses are also required to work together with other professionals such as doctors to change priorities and minimize damage when resources are scarce, which is a vital component of delivering safe and efficient care. It is also crucial for nurses to keep their employers informed about potential threats to the safety and quality of healthcare, as well as to keep patients informed about existing and potential plans for care delivery. This is imperative for ensuring transparency and accountability in the healthcare system (CNA, 2017).

1.2.2 Promoting Health and Well-being

Nurses play a central role in promoting health and well-being among patients by providing care, education, and support to help them achieve their optimal health outcomes (CNA, 2017). Apart from upholding their moral character, nurses must voice their concerns to the relevant authority as well upon encountering organizational or occupational conduct patterns that undermine their integrity and cause them moral discomfort. This is essential to maintaining safe and ethical procedures in healthcare environments. Moreover, nurses must always consider the privacy rights of the people under their care when executing community health programs (CNA, 2017).

1.2.3 Promoting and Respecting Informed Decision-making

The ethical nursing practice that respects people's autonomy and self-determination in making decisions about their health care is based on the notion of informed consent (CNA, 2017). Nurses have a key role in informing patients about their health conditions, treatment options, and associated risks and benefits. Nurses are aware of power dynamics in the patient-provider relationship and are not to misuse their authority to influence patients' decision-making. Nurses are advocates for patients when they believe external factors are compromising their health. Nurses need to empower patients to make informed decisions about their overall health. (CNA, 2017).

1.2.4 Honouring Dignity

No matter their circumstances or background, nurses are taught to respect and honour each patient's inherent worth and dignity (CNA, 2017). They work cooperatively with patients and their families to design a plan of care that addresses each patient's specific requirements. In addition, they make every effort to deliver care that respects the patient's values, beliefs, and choices. This includes considering patients' social and economic circumstances, which can significantly affect their health and well-being. Nurses recognize the importance of creating a moral community in healthcare settings, where moral dilemmas and difficulties can be openly discussed and resolved. This fosters a climate of respect and trust, enabling collaboration between patients and healthcare professionals to achieve the best possible outcomes (CNA, 2017).

1.2.5 Maintaining Privacy and Confidentiality

Nurses are taught the value of privacy and confidentiality throughout their interactions with patients, families, and communities (CNA, 2017). In a specific situation, nurses will gather,

utilize, and disclose health information only to those who need to know, while maintaining strict privacy standards. Information is shared with other healthcare providers who require it to deliver proper care or treatment to patients. When using social media, nurses must be cautious and avoid disclosing any private or sensitive information about patients or colleagues (CNA, 2017).

In addition, nurses must be watchful in spotting and dealing with improper access to or disclosing personal or health information that may have occurred accidentally or on purpose (CNA, 2017). Nurses should adhere to the established rules and procedures for safeguarding personal and health information to preserve privacy and confidentiality. This entails the use of safe technological systems and the implementation of stringent security controls for the access, storage, and destruction of information. Finally, nurses should quickly notify their superiors or the appropriate authorities of potential privacy violations (CNA, 2017).

1.2.6 Promoting Justice

Nurses play a decisive part in sustaining the ideals of justice in healthcare settings by striving for the fair treatment of all patients and advancing the common good (CNA, 2017). This entails ensuring that patients receive high-quality care founded on the most recent research evidence and that healthcare resources are distributed fairly and effectively. Nurses employ evidence-informed decision-making to ensure their patients receive the best treatment available. However, they must stay current on the most recent research and best practices in these fields in order to do this. In addition to providing equitable care, nurses advocate for their patient's rights and work to ensure they receive the most optimal care and support. This may involve advocating for policy changes, educating patients, and working with other healthcare professionals to provide comprehensive and compassionate care. Upholding the principles of justice is an

important aspect of nursing practice and essential to promoting all patients' health and well-being (CNA, 2017).

1.2.7 Being Accountable

Nurses are liable for their practice and are answerable for their conduct (CNA, 2017). They are expected to adhere to ethical principles in their professional interactions and clearly identify themselves with their name, position, and responsibilities. These foundational elements of nursing practice are critical in maintaining trust with patients and colleagues and ensuring patient safety. If nurses encounter situations where they feel uncomfortable or lacking in their ability to provide care, they need to seek guidance from a supervisor or another healthcare professional and engage in further education or training. Nurses must also comply with all legal and ethical requirements, protect patient confidentiality, and provide compassionate care to every patient. Upholding ethical and professional standards in practice and taking accountability for their actions are essential for nurses. (CNA, 2017).

1.3 Quality Practice Environments of Canadian Nurses

Good quality practice environments place patients and their specific needs at the epicentre of decision-making (CNA, 2017; Canadian Nurses Association & Canadian Federation of Nurses Union [CNA & CNFU], 2014; Nova Scotia College of Nursing [NSCN], 2017). Nurses and their employers are obligated to contribute to quality practice environments by advocating on behalf of patients to their respective healthcare organizations to ensure the necessary safety, support, and resources. Optimal quality practice environments where nurses are actively involved in the decision-making process contain the following characteristics: communication and collaboration, responsibility and accountability, safe and realistic workload, leadership, support for information and knowledge management, professional development and

workplace culture (CNA, 2017; Canadian Association of Critical Care Nurses [CACCN], 2018; CNA & CFNU, 2014; NSCN, 2017).

1.3.1 Communication and Collaboration

Quality practice environments foster coherent communication and collaboration within the nursing field at an individual and institutional level (CACCN, 2018; NSCN, 2017). In nursing, effective communication and collaboration are essential to promote high-quality patient care and respect between healthcare professionals, patients, and their families, allowing for a better understanding of patients' needs, concerns, and expectations, and leading to improved patient outcomes. Communication and collaboration must occur between nurses, other healthcare professionals, and patients to obtain trust and respect. Effective communication certifies that all healthcare team members, including the patient and families, are valued (CACCN, 2018; NSCN, 2017).

A cross-sectional survey study composed of 1,646 RNs and 1,181 LPNs working in rural and remote work settings across the ten Canadian provinces looked at the availability of communication tools such as Internet access, within their workplaces (Kosteniuk et al., 2019). The results of the study indicated that both RNs and LPNs had access to high-speed Internet within their workplaces. On the other hand, the least attainable communication tool for both nursing classification were web-based tools such as Skype which made it difficult to reach events such as online educational conferences. Communication technology can help rural and remote nurses feel less isolated professionally and socially, address the difficulties of travelling to urban locations for in-person education, and enhance skill development through online learning, but these resources must first be available to nurses at their places of employment (Kosteniuk et al., 2019).

1.3.2 Responsibility and Accountability

A quality practice environment is essential for nurses to perform their duties effectively (CACCN, 2018; CNA, 2017; NSCN, 2017). More specifically, it should provide them with the necessary resources, support, and guidance to make informed decisions and deliver the highest quality care to patients. Recognizing the importance of nurses' autonomy, a quality practice environment also allows them to participate in decision-making processes and allocate resources to provide the best possible care (CACCN, 2018; CNA, 2017; NSCN, 2017).

A qualitative descriptive study of 51 nurses working in medical and surgical units in Montreal, Canada, explored nurses' experiences in passing on vital patient information during shift transitions through focus group interviews (Lavoie et al., 2021). Thematic analysis revealed a core theme of sharing accountability for knowing and safeguarding the patient. Results indicated that the departing nurse felt responsible for imparting their understanding of the patient by providing comprehensive, accurate, and current information to the incoming nurse. The incoming nurses felt responsible for understanding the patient by receiving relevant material from the outgoing nurses. Participants noted stress during shift transitions because the incoming and departing nurses have separate responsibilities for the patient's safety, and the success of the handoff may depend on how well the interaction goes. Nurses further noted the shared obligation to comprehend and safeguard the patients' rights and safety when providing care during shift transitions. All participants remarked on the work environment, stating the benefits of a created collegiality, teamwork, and communication culture. As a result, taking the time to talk, respond to inquiries, and comprehend patient problems more thoroughly was seen favourably (Lavoie et al., 2021). A quality practice environment allocates the necessary elements for nurses to provide care for which they are accountable (CACCN, 2018; CNA, 2017; NSCN, 2017).

1.3.3 Safe and Realistic Workloads

Providing nurses with a safe and manageable workload is essential in creating a quality practice environment (CACCN, 2018; Hallaran et al., 2022; NSCN, 2017; RNAO, 2017a). Unrealistic workloads have been identified as a critical factor in high nurse turnover. A scoping review of 127 peer-reviewed articles looked at factors to optimize homecare nurses' care in Canada, including RNs, RPNs, LPNs, advanced practice nurses, nurse practitioners and clinical nurse specialists (Ganann et al., 2019). One of the prominent components in improving homecare nurses' delivered care included the implementation of quality practice environments with malleable schedules and appropriate workload levels. Manageable workloads were associated with increased job retention and overall satisfaction (Ganann et al., 2019).

An integrative review of 45 articles concluded that work overload within a nursing work environment decreased patient care and overall patient safety (Pérez-Francisco et al., 2020). In addition, increased workloads among nurses resulted in elevated levels of burnout and negative mental health issues (Pérez-Francisco et al., 2020). Therefore, healthcare organizations need to ensure they have an adequate number of nurses to provide safe and patient-centred care and to minimize heavy workloads for individual nurses in order to promote better outcomes for both patients and nursing staff (CACCN, 2018; Hallaran et al., 2022; NSCN, 2017; RNAO, 2017a).

1.3.4 Leadership

Strong nurse leadership is required to create a high-quality practice environment that supports excellent patient care and sponsors the ongoing development of nursing professionals (CACCN, 2018; RNAO, 2017a). Effective nursing leadership involves many skills and attributes, including appropriate communication, problem-solving, critical thinking, decision-making, and team building. In leadership roles, nurses should inspire and foster a positive work

environment and promote a culture of continuous learning and improvement. In addition, nurse leaders should prioritize mentorship and collaboration, creating opportunities for other nurses to develop their leadership skills (CACCN, 2018; RNAO, 2017a). A cross-sectional study conducted among 378 Ontario nurses working in acute care explored how nurses' leadership affected overall job satisfaction and patient safety outcomes (Boamah et al., 2018). The results of this study indicate that transformational leadership, which is leadership that encourages followers to go above and beyond what is generally expected of them, enhanced the standard of patient care by fostering work settings where nurses feel empowered to deliver the best possible care (Boamah et al., 2018).

1.3.5 Professional Development

The rapidly changing healthcare environment demands that nurses remain up-to-date with the latest evidence-based practices, techniques, and technologies to provide excellent patient care (CACCN, 2018; RNAO, 2017a). Thus, it is vital to ensure that nurses' quality practice environments are appropriately funded to provide the necessary resources for professional development. A rapid evidence review by King et al. (2021) highlighted self-motivation, relevance to practice, desire for workplace learning, facultative leadership, and positive workplace cultures as specific factors for improving professional development in nursing. Among these factors, self-motivation plays a significant role, as nurses driven to learn are more likely to seek and capitalize on professional development opportunities actively (King et al., 2021).

The relevance of professional development to nurses' practice is vital, as they need to understand how their newly acquired knowledge and skills can be applied in their everyday work, as highlighted by King et al. (2021). Having an inclination for workplace learning also

assumes significance as it allows nurses to learn in a familiar environment and immediately apply their newly gained knowledge and skills. Furthermore, a positive workplace culture that encourages and supports professional development creates a supportive environment that motivates nurses to engage in learning and growth proactively (King et al., 2021).

In addition, a qualitative interview study of 10 non-radiology nurses caring for interventional radiology patients in a Canadian inpatient hospital explored the need for professional development opportunities for nurses to provide competent, ethical care (Carley et al., 2021). Thematic analysis showed that these nurses struggled to establish trusting relationships with their patients, felt that ineffective communication interfered with the continuity of care they provided, and needed the appropriate education as part of their nursing curriculum. They also learned their knowledge through self-teaching. The research demonstrates the need to address professional growth in relation to developing proper education and improving clinical teamwork (Carley et al., 2021). By addressing these factors, nurses' quality practice environments can provide them with the necessary resources to stay abreast of the latest advancements within the nursing field and provide high-quality patient care (CACCN, 2018; RNAO, 2017a).

1.3.6 Workplace Culture

Workplace culture is vital in promoting the well-being of nurses, patients, and other employees (CACCN, 2018; NSCN, 2017; Registered Nurses Association of Ontario [RNAO], 2017a). Within a healthcare institution, creating a supportive and positive workplace culture that values the contributions of nurses and other healthcare professionals is elemental in promoting job satisfaction, reducing burnout, and retaining experienced staff. Meaningful additions to workplace culture, such as regulations for anti-bullying, can maximize the delivery of care. A

12-month longitudinal study conducted among 279 French Canadian nurses who completed an online survey explored the exposure to negative workplace characteristics such as workload and workplace bullying (Trépanier et al., 2021). The study results indicated that nurses experienced bullying within their work environments when workplace recognition was decreased, and there were increased workloads. Fostering a workplace culture that notices nurses' efforts and accomplishments is critical in reducing negative work characteristics such as workplace bullying (Trépanier et al., 2021). Workplace culture should be continually revised and reassessed to ensure it elicits the respect of the nurses working in that environment and create meaningful changes as voiced by nurses (CACCN, 2018; NSCN, 2017; RNAO, 2017a).

In summary, the nursing Code of Ethics is a collection of standards that regulates nurses' conduct and provides a framework for moral judgments in nursing practice (CNA, 2017). Furthermore, it addresses nurses' duty to promote professional settings that enable competent, safe, and ethical care. This includes promoting proper workforce levels, appropriate resources and equipment, and a work environment that values safety and respect. Nurses can guarantee their patients the best care possible by adhering to the Nursing Code of Ethics and advocating for the imperative components of high-quality practice environments (CNA, 2017).

1.4 Burnout and Job Stress: Impacts from Poor Quality Nursing Practice Environments

Existing research on nurses' practice environments has outlined its effects on job stress and burnout. If nurses work in high quality practice environments, nurses will have greater job satisfaction and decreased levels of burnout (Dordunoo et al., 2021). A cross-sectional survey study conducted in Montreal, Canada, among 2,174 nurses part of the Quebec Registration Board of Nurses, looked at how empowerment and collegial support within the work environment affected burnout levels (Kilroy et al., 2022). The results demonstrated that having positive

elements of a quality practice environment, such as professional development opportunities, transparency in sharing necessary information and recognition of nurses' efforts, decreased burnout levels. In addition, having collegial support and empowerment within workplace settings created decreased burnout measurements among nurses (Kilroy et al., 2022).

Job stress is widely acknowledged as a problem that impacts both individuals and healthcare organizations (Bardhan et al., 2019). Employees under stress are more likely to experience physical and mental health issues, which can lead to more absenteeism, lower productivity, and other undesirable effects (Bardhan et al., 2019). An integrative review of 21 articles examined the job stress experienced by new nurses entering the workforce, including new graduate nurses in Canada (Labrague & McEnroe-Petitte, 2018). The results of the review found that new nurses felt low to moderate stress levels as they started their nursing careers. Heavy workloads within work environments were denoted as the primary contributor to stress among new nurses. In addition, nurses reported a lack of professional training and development opportunities, creating increased stress levels among new nursing graduates. As indicated by the review, creating a high quality work environment that encourages young nurses to express their worries and ask for feedback without fear of being judged is thought to help and support nurses during this crucial time in their careers (Labrague & McEnroe-Petitte, 2018).

1.5 Ethical Dilemmas of Nursing Practice Environments

Nurses are only able to follow and uphold the seven primary nursing values and ethical responsibilities if they work in an ethical environment that contains the core characteristics associated with a quality practice environment (CACCN, 2018; CNA & CFNU, 2014; NSCN, 2017; RNAO, 2017a). Healthcare professionals such as nurses may experience moral and ethical dissonance when faced with circumstances that prevent them from providing treatment in the

manner they have been taught (PACPMH, 2020). In the absence of quality practice environments, the combination of adverse working conditions and maintaining the proper code of ethics can result in moral distress and moral injury for nurses, who are ultimately responsible for patients and their health (CACCN, 2018; CNA & CFNU, 2014; NSCN, 2017; RNAO, 2017a).

1.5.1 Definitions of Ethical Dilemmas, Ethical Disengagement, and Ethical Distress and Moral Injury

An ethical dilemma may develop when a healthcare organization makes a choice that opposes its ethical principles or values (CNA, 2017). In such circumstances, there may not be a simple or obvious solution, and several solutions could have both advantageous and disadvantageous effects. Situations such as this may lead to a sense of moral ambiguity or conflict (CNA, 2017). For instance, given the well-known global shortages of personal protective equipment (PPE), the conflict between the necessity to treat seriously ill infectious patients and the desire to preserve one's own life may give rise to an ethical dilemma over whether or not to provide aid within a nursing environment (PACPMH, 2020).

Ethical disengagement transpires when nurses become insensitive to ethical transgressions or workplace wrongdoing (CNA, 2017). This may occur when nurses accept that their ethical obligations are being disregarded or when they believe they have no control over the unethical actions of their supervisors or coworkers. To illustrate, if a healthcare institution does not have appropriate measures for the safe disposal of biological waste, a nurse may resort to ethical disengagement by disposing of the waste unfittingly through a non-regulated method (Fida et al., 2016). Ethical distress occurs when nurses understand the correct action in a certain

situation however is prevented from undertaking this task by various circumstances, some which may be beyond their control (CNA, 2017)

Moral injury is the long-lasting distress that might arise from encountering situations that contradict a person's moral convictions or principles (Rabin et al., 2023). These situations, often called potentially morally injurious events, can happen on an individual, group, organizational, or systemic level, among other levels. Potential moral injurious events have been associated with low psychological well-being, increased burnout, and distress among healthcare workers (Rabin et al., 2023).

1.5.2 Consequences of Ethical Dilemmas, Ethical Disengagement and Moral Distress

Ethical dilemmas within the workplace can lead to ethical disengagement and moral distress (PACPMH, 2020). Nurses could feel a variety of emotions, including stigmatization, fear, wrath, anxiety, and uncertainty owing to these ethical dilemmas (Yildirim & Kocatepe, 2022). Workplace strain and burnout might also result from the situation's tension (Yildirim & Kocatepe, 2022). Nurses who are under a lot of pressure may participate in moral disengagement to cope with their emotional stress (Fida et al., 2016). Deleterious emotions like rage, irritation, and resentment can also cause moral disengagement by lowering nurses' barriers to immoral behaviour and raising their readiness to defend their behaviour (Fida et al., 2016).

Numerous challenges contribute to the development of moral injury within a healthcare setting (Rabin et al., 2023). Chronic understaffing and the pressure to care for a high volume of patients with limited resources are among the leading factors. These challenges can have significant impacts on both individuals and organizations. For instance, at the individual level, moral injury may result in increased staff absences, understaffing, and prolonged patient contact with limited decision-making authority. During the COVID-19 pandemic, the impacts and

consequences of moral injury have been exacerbated, creating additional stressors and challenges for healthcare workers. A lack of organizational support during increased patient mortality, uncertainty, and heightened pressure on the clinical frontline due to scarce resources and understaffing further compounded the effects of moral injury (Rabin et al., 2023).

1.6 Summary of Background for Research

In summary, this research study focuses on the mental health of RNs and RPNs in Northern Ontario working during the COVID-19 pandemic. The COVID-19 pandemic has and continues to impact countries worldwide (Jones et al., 2020). Canada has suffered economically and within the healthcare sectors, with increased mental health impacts affecting healthcare workers (CIHI, 2021). In Canada, there are seven ethical values that nurses must adhere to when delivering patient-centred care (CNA, 2017; College of Nurses of Ontario, 2018). Nurses require quality practice environments to deliver safe, competent, and ethical delivery of patient care (CNA, 2017; CACCN, 2018; CNA & CFNU, 2014; College of Registered Nurses of Newfoundland & Labrador, 2013; NSCN, 2017).

Without a high quality practice environment, nurses can potentially place the patient in harm's way and be liable for any adverse impacts (CACCN, 2018; CNA, 2017; NSCN, 2017). For instance, nurses without a high quality practice environment, nurses may dissipate vital patient information during transitions between work shifts (Lavoie et al., 2021). In addition, nurses may encounter ethical dilemmas that can lead to ethical disengagement, ethical (or moral) distress, and ultimately moral injury if they are working in a poor quality work environment (CNA, 2017; PACPMH, 2020). The consequences of these ethical situations may invoke various emotional outcomes such as anger, guilt, fear, and frustration. There is a responsibility on both organizations and individuals to utilize ethical situations within the work environment as

learning opportunities to develop strategies and manage similar situations should they arise in the future (CNA, 2017; PACPMH, 2020).

CHAPTER 2: REVIEW OF THE LITERATURE AND RATIONALE FOR RESEARCH

This study explored the mental health of RNs and RPNs working in Northern Ontario during the COVID-19 pandemic. Guided by Gough et al.'s methodology, the literature review used a combination of a traditional and narrative review (Gough et al., 2017; Pae, 2015). Results of the literature review, limitations, and the knowledge gap are discussed. In addition, the adapted theoretical framework and the research question guiding this research study are elucidated.

2.1 Literature Review Overview

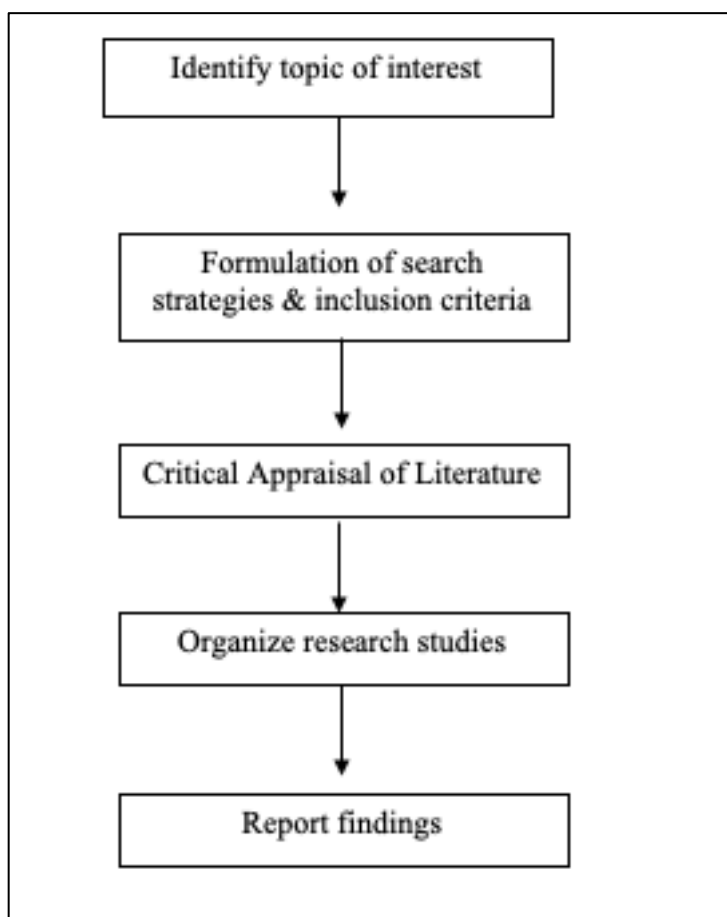
A traditional literature review presents research findings related to the specific topic of interest and discusses the literature from a contextual or theoretical point of view (Gough et al., 2017; Pae, 2015). On the other hand, narrative reviews describe a traditional non-systematic literature review without explicit methods that synthesize words rather than quantitative numbers or a specific approach to narrative explanation in research synthesis. Such reviews provide an understanding of the problem but not the state of the science related to the specific problem (Gough et al., 2017; Pae, 2015). The literature review conducted for this study contained additional steps to overcome its limitations, including the critical appraisal of literature and reporting of the findings to a respected research team consisting of my thesis supervisor and supervisory committee.

The mental health of nurses in North America during the COVID-19 pandemic is the topic explored in this review. Articles about global pandemics other than COVID-19 were excluded from this study because the primary focus was on the mental health of nurses during the COVID-19 pandemic. The following keywords used in combination with each other across the search databases to find relevant literature: “registered nurses, registered practical nurses,

RNs, RPNs, Mental health, Mental health impacts, COVID-19, COVID-19 pandemic, Nurses, Stress, Anxiety, Depression, Psychological distress, Psychological, Distress, Burnout, PTSD”. Boolean operators were used in combination with keywords to help narrow down the scope of the review. Additionally, the search for relevant literature was conducted using the following search databases: Google Scholar, PubMed, and Laurentian University Omni Library. The figure below outlines the steps taken in this review.

Figure 1.0

Literature Review Methodology



(Gough et al., 2017)

The 15 finalized articles were critically appraised using several appraisal tools. The qualitative studies were appraised using the Critical Appraisal Skills Program qualitative tools

(Critical Appraisal Skills Program, 2021). The qualitative Critical Appraisal Skills Program tool utilized ten questions concerning the validity of the study's focus, methodology, research design, recruitment strategy, ethical considerations, primary results, limitations, and importance. If articles could not provide information to answer questions where applicable, they were deemed of poor quality (Critical Appraisal Skills Program, 2021).

The Joanna Briggs Institute checklist (Joanna Briggs Institute Faculty of Health and Medical Science, 2017) was utilized to appraise quantitative studies critically. This checklist, consisting of eight questions, evaluated the clarity of inclusion criteria, description of participants and setting, use of validated outcome measurement tools, identification of external factors, reliability in result measurement, and appropriate statistical analysis. Quantitative studies meeting the criteria were considered good quality (Joanna Briggs Institute Faculty of Health and Medical Science, 2017).

Studies with mixed methods design were appraised using the Mixed Methods Appraisal Tool, which included separate checklists for qualitative, quantitative, and overall mixed-methods assessments (Hong et al., 2018). The checklists examined the relevance of the research design to the research question, the impact of researcher bias, and the representativeness of the sample (Hong et al., 2018).

Through the critical appraisal process, the 15 articles were categorized based on their study designs, and the corresponding critical appraisal tools were applied. All articles were deemed of good quality, as they met the criteria outlined by each appraisal tool, and were subsequently included in the literature review. Critical appraisal helps appraise literature evidence through a critical lens (Spratling & Hallas, 2022). An example of three different articles analyzed using the three appraisal tools can be seen in Appendix B.

Following the critical appraisal, information from each article was organized into a table, encompassing the authors, location, population, primary purpose, research methods, statistical analysis tools, and main results. The table allowed for easy comparisons between research studies based on study design, results, limitations, the study's settings, and the population of interest (Gough et al., 2017).

2.2 Nurses' Quality of Worklife and Mental Health Outcomes Prior to the Pandemic

The quality of worklife and mental health outcomes among Canadian nurses have been poor prior to the pandemic (Hall & Visekruna, 2020). A qualitative descriptive conducted among six RNs, four RPNs, eight personal support workers, and five informants in occupational health and nursing unions in Northeastern Ontario looked at the factors impacting their sickness absences (Gohar et al., 2020b). Thematic analysis of focus group interviews revealed four key themes: occupational/organizational challenges, physical health, emotional toll on mental well-being, and Northern-related challenges (Gohar et al., 2020b).

Within the occupational/organizational challenges theme, participants, particularly nurses and personal support workers, expressed heightened vulnerability to infections and viruses (Gohar et al., 2020b). Shiftwork and a perceived poor safety work climate were identified as contributing factors to sickness absences. The theme of physical health uncovered that insufficient staffing levels were linked to musculoskeletal disorders, leading to an increase in sickness absences. The theme addressing the emotional toll on mental well-being highlighted the potential for poor mental health to be a precursor to workplace sickness absence. Lastly, the Northern-specific challenges theme emphasized the lack of interconnectedness between healthcare settings in Northeastern Ontario compared to southern regions. The study underscored

the significance of addressing workplace factors, such as inadequate staffing, to mitigate the severity of sickness absences (Gohar et al., 2020b).

Over the past two decades, Canadian nursing research conducted by various nursing groups and unions, such as the Canadian Nursing Advisory Committee and the CFNU, has discovered similar evidence of nurses working in poor-quality work environments being affected by heavy workloads, lack of support from management, insufficient staffing, the prevalence of workplace violence, burnout, dissatisfaction with their profession, and experiencing an increase in mental health problems (Hall & Visekruna, 2020). Therefore, before examining nurses' experiences during the COVID-19 pandemic, it is essential to investigate the factors that have been affecting the mental health of nurses and their working conditions in Canada prior to the onset of the COVID-19 pandemic.

2.2.1 Nursing Quality of Worklife Prior to the Pandemic

2.2.1.1 Workplace Workload, Resources and Support

A cross-sectional survey study conducted in Ontario, Canada, examined factors associated with the intent to leave work among RNs (Nowrouzi-Kia & Fox, 2019). Data from 1,427 RNs were included in this study. The findings indicated that nurse participants had a low intention of leaving their current position. Nurses reported interference with the ability to provide care due to the lack of resources. They also noted a lack of flexibility and often had to work outside their roles to accomplish their responsibilities and tasks. On average, the nurse participants indicated being satisfied with their job. However, a decrease in resource availability and lower levels of job satisfaction equated to increased intent to leave scores. The study highlights how a lack of workplace resources may influence nurses' intent to leave the occupation (Nowrouzi-Kia & Fox, 2019).

A cross-sectional study in Northern Ontario looked at the retention factors among RPNs (Nowrouzi-Kia et al., 2015b). Data was collected from March 2011 to June 2011. Completed questionnaires were collected from a total of 506 nurse participants. Results indicated that approximately 70.5% of RPNs were planning to leave their nursing positions within the next 60 months. Additionally, nurses with more than 30 years of nursing experience were likely to leave their nursing position for various reasons, such as retirement and increasing workloads. Furthermore, nurses working less than one hour of overtime and having between 14-22 years of nursing experience had decreased intention to leave. This study provided an in-depth understanding of how the work environment and workload could aid in retaining nurses in Northern Ontario (Nowrouzi-Kia et al., 2015b).

A systematic review of research articles published from 1990 to 2015 looked at factors associated with nursing turnover (Halter et al., 2017). The synthesis looked at a total of nine studies. The results from the finalized articles regarding the contributors to nursing turnover were thematically analyzed and grouped into four distinct sections: “individual, job-related, interpersonal, and organizational determinants and consequences” (Halter et al., 2017, p. 11). Examining individual elements of nurse turnover, reviews indicated that older nurses were less likely to leave nursing. In contrast, nurses with less experience (less than five years) were more likely to leave their jobs. Three articles offered consistent evidence to support the adverse impact of stress, particularly work-related stress, on employees' intention to leave their job. Nurses with poor job satisfaction were shown to be more prone to leaving (Halter et al., 2017).

Work content, workload, job variety, position ambiguity, shift patterns, rota stability, and promotion opportunities were all factors that contributed to nurse turnover (Halter et al., 2017). Increased workload levels, higher work content and fluctuations in nurses' routine roles were

elements that led nurses to consider leaving. Having adequate assistance from higher-ups and supervisors was indicated by nurses as a reason to remain in their current jobs. Nurses' ability to participate in the decision-making process was viewed as an encouraging reason for them to remain within their jobs. Organizational structures where inadequate staffing existed resulted in greater intention for nurses to leave their jobs. A limitation was that this review depended on the article's authors to publish evidence-based work with reliable results. Additionally, the review did not offer any opportunity to conduct a meta-analysis that was specifically centred on the causes and consequences of turnover in the larger literature on human resource turnover. This is a limitation because consolidating research findings, evaluating overall impact sizes, and identifying relevant moderators or variances between studies can all be accomplished by doing a meta-analysis. Overall, this systematic review recognizes nursing issues that contributed to high turnover rates before the COVID-19 pandemic (Halter et al., 2017).

A cross-sectional study conducted among 891 nurses working in Quebec, Canada, explored the nurses' workplace experiences (Gagné et al., 2019). A self-administered questionnaire that inquired about the adequacy of workplace resources such as staffing, support, positive relationships with supervisors, and physiological and physical work demands was provided to participants. Three profiles of nurses' work experiences were generated: nurses in distress (n = 231), nurses in moderately positive situations (n = 446), and nurses in positive situations (n = 214). Nurses who were characterized as being in the distress profile indicated a perceived lack of access to workplace resources, along with high psychological demands and negative relationships with nursing supervisors. Of the three profiles, job demand was indicated as the highest within this group. The nurses-in-moderately-positive-situations profile revealed

having mild perceptions of access to workplace resources and moderate physical and psychological work demands (Gagné et al., 2019).

The nurses-in-a-positive-situation profile was the smallest, marked by high access to workplace resources and low job demands (Gagné et al., 2019). Participants indicated having high access to structural work resources, except for staffing adequacy. Nurses in this profile reported high job satisfaction and engagement, with low intention to quit. The study's conclusions depicted the necessity of improving nurses' workplace experience by allocating greater access to the structural resources of their workplace and alleviating the psychological demands imposed by their work (Gagné et al., 2019).

2.2.1.2 Workplace Safety and Job Satisfaction

Understanding the challenges faced by nursing work environments has been a considerable focus of nursing-related research even before the pandemic, as highlighted by Enns et al. (2015). A cross-sectional web-based survey study conducted by the CFNU examined nurses' working conditions in Canada before the onset of the COVID-19 pandemic (Hall & Visekruna, 2020). A total of 7,153 nurse participated in this study including RNs, RPNs, nurse practitioners, and LPNs. The study explored the following variables: workplace safety, job satisfaction, perception of management decisions, and turnover intent. Turnover intent examined nurses' opinions on whether they would like to leave their current workplace (Hall & Visekruna, 2020).

Almost a quarter of the nurse participants provided an overall patient safety rating as poor or failing (Hall & Visekruna, 2020). Participants also agreed that vital patient information was lost between shift transitions, thereby, increasing error rates. In addition, nurses indicated work-related injuries occurring daily at their occupation. By the end of the year, more than half of the

nurse participants wanted to leave their occupation. Similarly, over half the participants described their work as dissatisfying. The study results indicated growing safety concerns such as important patient information being lost during the changeover between shifts and occupational-related injuries within nursing work environments (Hall & Visekruna, 2020).

A cross-sectional study conducted in Canadian nursing homes, from September 9, 2019, to February 28, 2020, examined the work-related quality of life among Canadian nurses (Song et al., 2023). This study used data from the Translating Research in Elder Care research program and included a total of 91 nursing homes. A total of 369 RNs and 552 LPNs took part in the study. Approximately 16% of nurses reported working with inadequate staffing levels daily, and 37.16% of participants were short-staffed weekly, which surmounted increased workloads. Results showed that nurses were limited in their opportunity to participate in continuing education, such as networking with clinical educators. Nurses reported high levels of work engagement, job satisfaction, and professional efficacy across various indicators. To improve the work environment, addressing issues such as workload, personnel, and resources is integral. Taking steps to address these challenges can help mitigate undesirable outcomes and enhance resident care in long-term care settings (Song et al., 2023).

A cross-sectional study conducted across Canada examined the job satisfaction and turnover intention of newly graduated nurses over a one-year work period (Laschinger et al., 2016a). The final sample size contained 406 RNs who responded to the initial survey and the survey provided after one year of full-time work. The results over the one-year time period indicated that, in general, the newly graduated nurses were satisfied with working as professional nurses. However, over half of the nurses reported high levels of emotional exhaustion. Approximately 24-42% of nurses observed or experienced situations of incivility within their

work environments. Overall, the study results showed that newly graduated nurses within the Canadian workforce were satisfied with their commitment to nursing. The research concluded the need for further improvements in the working conditions of newly graduated nurses (Laschinger et al., 2016a).

A cross-sectional study conducted by Lee et al. (2020) examined the overall job satisfaction and intention to leave among 113 perioperative RNs in Canada (Lee et al., 2020). An electronic survey was distributed via the British Columbia Nurses Union. Job satisfaction was measured using a 4-point response scale with scores ranging from 1 (very dissatisfied) to 4 (very satisfied); higher scores indicated greater job satisfaction. The intention to leave was measured by a single-item scale, which inquired participants about their intention to leave their current job within the next year on a 4-point response scale ranging from 1 (very unlikely) to 4 (very likely). The results indicated increased workload was linked with decreased job satisfaction and elevated interest in leaving their current job. Positive collegial relationships within the work environments were associated with greater job satisfaction. In particular, the nurse-physician relationship was the most significant predictor of overall job satisfaction. The research highlighted the need for nursing work environments with appropriate support and meaningful collegial relationships in order to ensure job satisfaction and retention (Lee et al., 2020).

2.2.1.3 Workplace Environment and Culture

Within the nursing field, workplace autonomy has been revealed to be a good predictor of nursing job satisfaction and retention (Enns et al., 2015). A cross-sectional study conducted by Enns et al., (2015) examined how workplace autonomy and workplace characteristics contributed to depression and absenteeism in Canadian nurses. The results indicated that hospital nurses had less control over practice decisions and inflexible schedules. Nurses with more

accommodating and malleable schedules reported lower levels of workplace absenteeism. Concerning nursing classification, LPNs reported greater amounts of absenteeism due to illnesses in comparison to RNs and RPNs. Lower rates of autonomy indicated higher levels of depression among the nursing groups. Among all the workplace factors, job strain substantially influenced depression and absenteeism levels among nurses, with higher levels of job strain resulting in greater levels of depression and absenteeism. Additionally, nurses who reported having less control over their practice also experienced higher levels of absenteeism (Enns et al., 2015).

A qualitative study that was part of a larger mixed-methods one examined the work environment of obstetrical RNs in Northeastern Ontario (Nowrouzi-Kia et al., 2015a). Interviews with six nurses were completed between July and September 2012. The five key themes that emerged from the qualitative interviews were “workplace stress, relationship with colleagues, quality of life of obstetrical nurses, changes in care delivery, and limited resources in the workplace” (Nowrouzi-Kia et al., 2015a, p. 14).

Participants commented on the stressors of the work environment, such as busy work environments, staff shortages, physical stress, and emotional stress (Nowrouzi-Kia et al., 2015a). Interdisciplinary interactions with colleagues, physicians, and managers were essential in minimizing stress, according to the nurses. Some nurses voiced the need for greater financial resources to improve facility equipment. Nurses further posited that gaining recognition for work would help improve their quality of life. They also noted that cross-training to be competent in all aspects of obstetric care provided enjoyment and improved clinical competency. In addition, nurses expressed the need for educational opportunities to update their clinical skills and reported taking increased sick days to cope with the physical and mental health demands of their

workplace. The study emphasizes the importance of improving nurse work environments to enhance patient care, particularly in Northeastern Ontario (Nowrouzi-Kia et al., 2015a).

2.2.2 Nurses' Mental Health Factors Prior to the Pandemic

2.2.2.1 Nurses' Stress, Anxiety, Depression and PTSD Outcomes

The Manitoba Nurses Union (MNU) conducted six focus groups in December 2014 to gather information about the prevalence and impact of trauma and PTSD experienced by nurses in their work environments (MNU, 2015). The report does not specify the total number of participants, but the nurses who participated were from various departments including acute care, cancer treatment, surgery, palliative care, and mental health. The incidence of critical traumatic experiences, the symptoms participants experienced as a result of these experiences, the coping mechanisms used to deal with trauma and stress, and the opinions of employer reinforcements in terms of offering training and resources after a daunting event were the main topics of focus group questions (MNU, 2015).

Many individuals acknowledged that they had a tough time controlling their stress when dealing with adverse situations such as patient deaths (MNU, 2015). Nurses noted a lack of support from management when faced with a critical incident at work led to increased feelings of PTSD. According to the participants, there is a great deal of stress and PTSD at work due to bullying from management, patients, coworkers, and families. Female nurses expressed concerns that their stress or trauma complaints were not given the same level of importance as those made by male nurses during the focus groups conducted by the MNU. The primary recommendations from the focus groups included advocating for increased employer obligation to provide comprehensive debriefing supports, as well as finding ways to improve interpersonal interactions

between management and staff to better manage PTSD experienced by nurses following injurious events (MNU, 2015).

2.2.3.2 Nurses' General Mental Health Status

A cross-sectional study conducted in Canada examined the mental health among healthcare workers, which included 169 RNs and 139 licensed practical nurses who worked in 30 nursing care homes and 15 tertiary-level pediatric hospitals (Hoben et al., 2017). Participants completed an online version of the Short Form Health Survey, which examined individuals' mental and physical health. The results indicate that RNs and licensed practical nurses working in nursing homes had lower perceived physical and mental health levels than those working in pediatric hospitals. A comparison between the nursing classifications revealed that licensed practical nurses had better scores regarding perceptive physical and mental health status while working in a nursing care setting.

Compared with other allied healthcare professionals such as healthcare aides, educators and managers, RNs and licensed practical nurses had a decreased perception of their physical and mental health while working in nursing homes (Hoben et al., 2017). Similarly, RNs and licensed practical nurses had lower overall physical and mental health scores within a pediatric hospital setting when compared with other allied healthcare professionals. The study's conclusions highlighted the concern with regard to the mental and physical health of nurses, particularly RNs working in Canada before the COVID-19 pandemic (Hoben et al., 2017).

2.2.3.3 Summary of Nurses' Quality of Worklife and Mental Health Prior to the Pandemic

The quality of nurses' work life prior to the pandemic has identified increased lack of workplace resources, inflexible work schedules, lower amounts of work experience, increased workload, and decreased levels of support from management resulted in heightened intention to

leave nursing (Halter et al., 2017; Nowrouzi-Kia et al., 2015b; Nowrouzi-Kia & Fox, 2019). Growing concerns about workplace safety along with a decrease in overall job satisfaction were indicated by nurses (Hall & Visekruna, 2020; Song et al., 2023).

Examination of factors within a nurses' work environment discovered that workplace violence towards nurses, occupational-related pain, high job strain, and low control over the practice as strong contributors to workplace absenteeism (Enns et al., 2015). Additionally, increased workplace stress, undesirable relations with other healthcare professionals, and decreased opportunity to partake in relevant clinical training negatively impacted nurse's workplace environments (Nowrouzi-Kia et al., 2015a).

Canadian nurses reported experiencing increased levels of stress and PTSD prior to the pandemic, particularly after harmful work incidents (MNU, 2015). These studies highlight the pre-existing trend of problematic workplace conditions and mental health outcomes that have affected and continue to affect the Canadian nursing workforce.

2.3 Nurses' Quality of Worklife and Mental Health During the Pandemic

Nursing professionals have been in the frontline of the response to the COVID-19 epidemic, which has had an immense impact on the healthcare industry (Nagel & Nilsson, 2022). The rise in demand for healthcare services attributable to the epidemic has increased the workload for nurses. The COVID-19 pandemic has exposed nurses to a higher risk of viral exposure, resulting in concerns for their personal health and the health of their families (Nagel & Nilsson, 2022). Research indicates that the pandemic has had a detrimental impact on nurses' mental health, with many of them experiencing symptoms of anxiety, depression, and exhaustion. The pandemic has also brought attention to how important it is for nurses to have access to adequate workplace resources and to work in supportive surroundings. However, more

research is needed to monitor how the COVID-19 epidemic is affecting healthcare organizations and the staff that it employs, particularly nurses, and take action to assist their mental health and well-being (Nagel & Nilsson, 2022).

2.3.1 Nurses' Quality of Worklife During the Pandemic

2.3.1.1 Workplace Stress, Workload and Demand

A report by Statistics Canada revealed the results from the Survey on Health Care Workers' Experiences During the Pandemic conducted from September to November 2021 (Statistics Canada, 2022). Healthcare professionals who resided in the ten provinces were asked to participate in the survey. Four occupational groups of healthcare professionals that participated in the survey included: doctors, nurses, personal support workers, and other healthcare employees. A total of 12, 246 responses were obtained, implying a response rate of 54.9%. The cross-sectional survey was created in partnership with various Canadian healthcare organizations such as the Public Health Agency of Canada and Health Canada. The survey asked a question pertaining to job types and settings, PPE and infection control protocols, and the impact of the pandemic on personal and professional working life. Data was collected either by web-based questionnaire or computer assisted telephone interviewing (Statistics Canada, 2022).

According to the report, 86.5% of healthcare workers felt more stressed at work during the pandemic, more than three-quarters (74.6%) of healthcare workers reported having an increased workload, and over half (55.5%) took on tasks they did not know how to do (Statistics Canada, 2022). The report indicates, "Feeling more stressed at work is the most common impact felt by health care workers during the pandemic" (Statistics Canada, 2022, p. 1). A higher percentage of nurses intend to leave their current job or change their occupation (24.4%) compared to other healthcare workers. The differences in intention to leave or change jobs

between healthcare occupation groups may reflect the unique demands and stresses associated with each job and the various work settings within healthcare (Statistics Canada, 2022). The report highlighted the fact that COVID-19 has shed light on significant challenges such as increased workload and demand within the Canadian healthcare system and how healthcare workers' mental health has been dramatically affected. Therefore, it is essential to recognize the mental health challenges healthcare workers face during the pandemic and take steps to support them (Statistics Canada, 2022).

The conclusions of the Work and Wellness Survey, which was conducted from January to February 2021, were highlighted in a report by the RNO (RNO, 2021). A total of 2,102 nurses from Ontario, Canada, responded to the questionnaire. Demographic information indicated that RNs accounted for the most participants (91%). The survey aimed to learn more about how nurses perceived working during the pandemic. According to the findings, nearly all respondents (95.7%) claimed to have been affected by the pandemic. Nearly half of the respondents reported that the pandemic affected their work-life balance to a great extent. It was also shown that job stress was profound, with a third of nurses (31.6%) reporting very high-stress levels. High levels of work stress can result in burnout, lower job satisfaction, and poorer patient care (RNO, 2021).

A correlation was observed between stress levels and the number of recommended working hours, with nurses experiencing higher stress being more likely to work fewer hours (RNO, 2021). Additionally, 9.3% of nurses indicated a willingness to leave the nursing profession for a different occupation. Notably, the number of nurses considering leaving nursing increased in the post-pandemic period as stress levels rose. Recommendations included

increasing staffing levels to deal with increased workloads, providing access to educational nursing programs, and improving support for both new and experienced nurses (RNAO, 2021).

2.3.1.2 Workplace Safety, Resources and Support

A report by the Royal Society of Canada provided findings from a study that examined the impact of the COVID-19 pandemic on the Canadian nurse workforce (Murphy et al., 2022). This case study conducted in Nova Scotia and Saskatchewan examined the ongoing problem of nurses prematurely leaving their profession. The study involved a total of 31 nurses from Nova Scotia and 11 from Saskatchewan. Data were collected through open-ended interviews with the two nursing groups. The results indicated several key factors leading to nurses leaving the workforce early during the pandemic. Nurses expressed safety concerns within the workplace caused by heightened workload and staffing inadequacy. Participants further described the lack of a work-life balance due to the rigidity and inflexibility of their daily work schedules. Both nursing groups also revealed a lack of support from upper management. Lastly, nurses indicated how other public health occupations were less physically and emotionally demanding during the COVID-19 pandemic (Murphy et al., 2022).

The Royal Society of Canada additionally interviewed nursing leaders from across Canada (Murphy et al., 2022). The interviews aimed to gather insights on ongoing issues related to nursing shortages, turnover rates, and the intention to leave the nursing profession within the Canadian healthcare system, while also examining any differences pre- and post-pandemic. The findings revealed that valuing nursing expertise and involving nurses in decision-making processes could potentially improve retention in addressing nursing shortages. The participants also highlighted the limited availability of resources such as professional development opportunities for nurses and the lack of additional time allocated for continuing education

aspects. A common opinion divulged by nursing leaders indicated that nurses need to be viewed as more than just a simple cog in the system; instead, a purposeful acknowledgement of their unique skills and expertise is required. The interviews also highlighted the increased need for workplace support offered to nurses to improve their mental health and resilience (Murphy et al., 2022).

A cross-sectional study conducted in Quebec, Canada, explored the perceptions of personal and hospital resources and support during the pandemic among 119 healthcare providers, which included 64 nurses and 55 physicians (Lou et al., 2021). Data was collected from July 31 to August 15, 2020, through an online survey. Within the survey, participants were given lists of supports and resources that were either personal, hospital or healthcare system-oriented. The percentages of personal, hospital, and healthcare system resources that were thought to be accessible, used, and beneficial by nurses and doctors, respectively, were investigated using descriptive analyses. The results revealed that most participants felt that personal supports, such as family and friends were available to them. Most participants indicated that hospital resources such as PPE were available to them. However, many healthcare providers expressed the lack of skills and resilience training provided by the hospital. Regarding healthcare system resources, almost half of the nurse participants indicated the need for more job rewards and protection (Lou et al., 2021).

2.3.2 Nurses' Mental Health Outcomes During the Pandemic

Both international and domestic (North American) studies have found the mental health of nurses in particular to be at risk during the COVID-19 pandemic (De Kock et al., 2021; Galletta et al., 2021; Havaei et al., 2021a; Karimi et al., 2020; Maben & Bridges, 2020; Montoya et al., 2021; Ünver & Yeniğün, 2022; Zamanzadeh et al., 2021).

Research conducted internationally revealed the negative mental health experiences of healthcare workers such as nurses during the COVID-19 pandemic (Cohen & van der Meulen Rodgers, 2020; Halcomb et al., 2020). Several research studies have revealed an increased prevalence of anxiety among healthcare workers during the COVID-19 pandemic (Badahdah et al., 2020; Cai et al., 2020; Di Tella et al., 2020; Fu et al., 2020; Mrklas et al., 2020; Shechter et al., 2020; Ying et al., 2020; Zhang et al., 2020). Elevated levels of depression have been identified among healthcare workers during the COVID-19 pandemic (Cai et al., 2020; Fu et al., 2020; Mrklas et al., 2020; Shechter et al.; Tan et al., 2020; Ying et al., 2020; Zhang et al., 2020). Increased PTSD levels were found among healthcare workers during the COVID-19 pandemic (Di Tella et al., 2020; Tan et al., 2020; Young et al., 2020). In addition, inflated stress levels were discovered among healthcare professionals working during the COVID-19 pandemic (Badahdah et al., 2020; Mrklas et al., 2020; Shechter et al., 2020; Tan et al., 2020).

2.3.2.1 Nurses' General Mental Health Status

A report by the Health Professional Worker Partnership initiative conducted seven case studies of professional workers, which included nurses, midwifery, medicine, dentistry, accounting, academia, and teaching (Bourgeault et al., 2021). A systematic review of the literature was conducted for each case study. As part of this mixed methodological approach, worker surveys, and interviews were conducted as well. A total of 1,013 nurses from across Canada answered the worker survey and 54 nurses took part in the professional worker interviews (Bourgeault et al., 2021).

Results regarding mental health status were found to be decreased in the nursing and midwifery professions (Bourgeault et al., 2021). The results indicated that 67% of nurses admitted having suffered mental health issues during the pandemic, 65% had to make workplace

changes due to their mental health outcomes. In addition, 59% considered taking a leave of absence, 38% of nurses took a leave of absence due to their poor mental health status, and 74% of nurses returned to work after a leave of absence. No specific reason on why most nurses returned to work was revealed, however, nurses had similar rates of returning to work after a leave of absence compared to other professional workers (Bourgeault et al., 2021).

Nurses made changes to their work patterns during the pandemic, which included seeking mental health supports from medical professionals like psychologists and taking sick days or vacations (Bourgeault et al., 2021). However, the nurse participants faced barriers when taking absences due to mental health issues, such as encountering unsupportive colleagues or supervisors. The results from the interviews revealed participants struggles with declining mental health during the pandemic. Nurses described the stigma associated with expressing mental health issues when taking a leave of absence. As with other professionals examined in this study, nurses felt pushed to return to work when they were not ready and returning to the same detrimental workplace settings, which initially led to taking a leave of absence (Bourgeault et al., 2021).

2.3.2.2 Nurses' Depression, Anxiety and Stress Outcomes

Between June 1, 2022, and July 27, 2020, 140 oncology nurses in the United States participated in a cross-sectional web-based survey study to investigate the effects of the COVID-19 pandemic on psychological distress and work-related quality of life (Eche et al., 2022). The Depression, Anxiety, and Stress Scale (DASS-21) was used to measure stress, levels of anxiety, and depression, and levels of PTSD were assessed using the Impact of Events Scale-Revised. The 23-Likert Quality of Life at Work Scale was used to assess the quality of life at work.

Participants reported mild levels of stress, anxiety, and depression, as well as low levels of depressive symptoms (Eche et al., 2022).

Increasing levels of PTSD, stress, anxiety, and depression were associated with decreasing work-related quality of life levels. In addition, nurses' perceived levels of "anxiety, depression, and stress were strongly correlated to PTSD" (Eche et al., 2022, p. 270). Nurses with more work experience indicated higher levels of work-related quality of life. Increased years of nursing experience were associated with increased levels of anxiety, depression, and stress. The study emphasizes the importance of implementing psychosocial interventions to enhance the overall quality of work-related life. The study's limitations included the reliance on self-reported data, which may impact the reliability of the results. Additionally, the sample was drawn from a single healthcare setting, which could potentially limit the generalizability of the findings, as noted by Eche et al. (2022).

A systematic literature review with a supplementary meta-analysis of nine studies analyzed the work performance and mental health of healthcare professionals such as nurses and doctors during the COVID-19 pandemic (Nowrouzi-Kia et al., 2022). The review articles were searched across seven scientific databases from January 2020 to September 2020. The International Classification of Functioning, Disability, and Health framework was used to help interpret the study results. The results of the literature review analysis revealed: "nine factors related to work performance during the pandemic (inadequate support, workplace preparedness, financial concerns associated with income) and specific mental health factors (depression, anxiety, inadequacy, occupational stress, productivity at work, workplace, preparedness, fear of transmission and burnout/fatigue" (Nowrouzi-Kia et al., 2022, p. 734).

The study underscores the harmful impact of the COVID-19 pandemic on healthcare workers' mental health but suggests that accessible mental health services and a supportive work environment can mitigate these effects, as discussed by Nowrouzi-Kia et al. (2022). Enhancing work performance and providing mental health support is critical for supporting healthcare workers. Organizations can implement measures such as open communication channels and opportunities for career advancement that align with employees' performance at work. However, it should be noted that the study's limitations include its design, which prevents establishing a cause-and-effect relationship from the results. Nevertheless, this study emphasizes the significance of acknowledging and addressing the challenges faced by healthcare workers during the pandemic (Nowrouzi-Kia et al., 2022).

2.4 Mental Health Outcomes

All 15 articles included in the literature review focused on the mental health of nurses and the various factors that have influenced their mental prosperity during the COVID-19 pandemic. Several of these articles examined specific variables, such as anxiety, depression, stress, and PTSD, which were found to have worsened among nurses during the pandemic (Ali et al., 2020; Arnetz et al., 2020a; Arnetz et al., 2020b; Cho et al., 2021; Crowe et al., 2020; Havaei et al., 2021a; Iheduru-Anderson, 2020; Kim et al., 2020; Lapum et al., 2021; LoGiudice & Bartos, 2021; Sagherian et al., 2020; Shaffer et al., 2020; Tokac & Razon, 2021; White, 2021).

2.4.1 Anxiety, Depression, Stress, PTSD

A convergent parallel mixed-methods study conducted in Western Canada by Crowe et al. (2020) explored the mental health of Critical Care Registered Nurses (CCRN) who administered direct patient care during the COVID-19 pandemic. Semi-structured interviews were conducted for the qualitative portion, whereas a self-reported questionnaire was completed

for the quantitative aspect. In total, 109 participants responded to the survey yielding a 45% response rate; 15 participants took part in the semi-structured interviews. These participants were CCRNs working in either intensive care units (ICU) or high acuity units. The DASS-21 was used to measure mental health changes in depression, stress, and anxiety symptoms. The Impact of Event Scale-Revised measured PTSD symptoms. Depression levels in the study were categorized as normal (0–9), mild (10–13), moderate (14–20), severe (21–27), and extremely severe (over 28). Anxiety levels were defined as normal (0–7), mild (8–9), moderate (10–14), severe (15–19), and extremely severe (over 20). Stress levels were categorized as normal (0–14), mild (15–18), moderate (19–25), severe (26–33), and extremely severe (over 34). For PTSD concerns, scores below 24 indicated no clinical concerns, scores between 24 and 32 suggested the presence of some symptoms, scores of 33–36 indicated a probable diagnosis, and scores above 37 indicated significant symptoms (Crowe et al., 2020).

The results indicated that more than 37.6% of participants experienced significant PTSD symptoms (Crowe et al., 2020). Approximately 42% of the participants had a normal score on the depression scale, while 15% had scores reflective of severe to extremely severe depression symptoms. Moreover, 32% of the participants had a normal score on the anxiety scale, with 26% having scores reflective of severe to extremely severe anxiety symptoms. Lastly, regarding perceived stress levels, 45% of the participants had a normal score on the stress scale, and 22% of the participants had a score reflective of severe to extremely severe stress symptoms. The study's findings reveal the levels of anxiety, stress, PTSD, and depression experienced by nurses during the COVID-19 pandemic. Limitations of the study, as noted by the researchers, included results coming from one location and at a specific point in time, which can lower the

generalizability of the findings. The study recommended increased support for nurses, such as stress management sessions and regular psychological check-ups (Crowe et al., 2020).

2.4.2 Anxiety, Depression, Stress

A web-based cross-sectional study conducted from April 20th to May 10th, 2020, in the United States looked at predictors of poor mental health among nurses during the COVID-19 pandemic (Kim et al., 2020). The final sample comprised 320 nurse participants who were alumni of the Southern California University of Nursing. The Perceived Stress Scale was used to assess the participants' perceived psychological stress. The Perceived Stress Scale used a five-point Likert response option with the summation of scores ranging from 0-40. The General Anxiety Disorder-7 (GAD-7) and Patient Health Questionnaire-9 (PHQ-9) assessed the symptom severity of anxiety and depression, respectively. Participants were asked to recall their symptoms of stress, anxiety, and depression levels both before and during the COVID-19 pandemic (Kim et al., 2020).

The median scores from the Perceived Stress Scale, GAD-7, and PHQ-9 were 14%, 4%, and 2%, respectively as perceived before the pandemic (Kim et al., 2020). The median scores on the Perceived Stress Scale, GAD-7, and PHQ-9 during the pandemic increased to 18%, 8%, and 6%. Furthermore, most nurses reported moderate/high levels of perceived stress (80%) during the pandemic, while 43% and 26% reported moderate/severe levels of anxiety and depression, respectively. The results of this study indicate the levels of anxiety, stress, and depression experienced by nurses during the COVID-19 pandemic were escalated. The self-reporting of mental health status by the nurse participants could introduce subjective bias leading to the inaccurate estimation of symptoms. Additionally, this study's sampling was done from only one nursing school, which may decrease the generalizability of the findings. Recommendations

included the necessity of strengthening the psychological well-being of nurses during the pandemic to ensure positive mental health status (Kim et al., 2020).

2.4.3 Anxiety

A cross-sectional study conducted in Michigan, United States, looked at the association of factors affecting the mental health of nurses during the COVID-19 pandemic (Arnetz et al., 2020b). A total of 695 nurses participated in this cross-sectional study from May 7 to May 29, 2020. A total of 392 nurse participants worked in in-patient settings, and the 271 remaining participants worked in outpatient settings. Data were collected from an online survey distributed to nursing organizations. The GAD-7 scale was used to measure nurse participants' anxiety levels over two weeks (Arnetz et al., 2020b).

The results showed that 14.3% of nurses experienced moderate anxiety levels, and 8.3% experienced severe anxiety levels (Arnetz et al., 2020b). A correlation was also noted between having direct contact with COVID-19 patients and levels of anxiety. The study's results show the anxiety levels experienced by nurses caused by the COVID-19 pandemic. A limitation of the study is its lack of generalizability to other settings, as it was conducted in a single state within the United States. Additionally, the low response rate of 4% for the survey is a concern, as optimal response rates for studies using surveys are typically around 50%. A low response rate can introduce nonresponse bias and may limit the generalizability of the study results to the entire population of interest. These results highlight the need for a planned strategy to assess nurses' mental health and proactively identify those who are at risk and in need of assistance. Giving them proper and sufficient PPE is a practical step that can help them operate safely and prevent or at least lessen mental health concerns. (Arnetz et al., 2020b).

A network analysis study conducted by Tokac et al., (2021) looked at the mental well-being of a sample of nurse professionals in the United States during the COVID-19 pandemic. The sample size consisted of 83 employed nurses, of which 54 worked in hospitals, 11 worked in clinics, and the remaining 18 worked in schools or institutions. An online web-based 117-item survey was used for data collection. The 7-item GAD-7 scale measured anxiety among the participants over the previous two weeks. In terms of statistical analysis, a partial correlation network was conducted to determine the potential connections between years of experience working as a nurse and mental health (Tokac et al., 2021).

The results indicated a positive relationship between work impairment and anxiety, meaning that as anxiety levels increased, so did work impairment (Tokac et al., 2021). Furthermore, there was a decrease in work productivity of approximately 30%-60% in nurses who had experienced moderate or severe anxiety levels. Limitations of the study included the small sample size, which reduced the opportunities to generalize the findings of this study. The study results do not compare pre-pandemic and during-pandemic scenarios, so it is difficult to predict how the COVID-19 pandemic affected the variables explored. Recommendations acknowledged that nursing colleges could utilize this information to create courses for nursing students to manage anxiety levels through the pandemic (Tokac et al., 2021).

2.4.4 Stress

A cross-sectional survey study by Arnetz et al. (2020a) examined sources of stress among nurses in the United States during the COVID-19 pandemic. A total of 455 nurse participants' answers were considered for this study. Most participants were RNs (n=394). Nurses' responses to stressful involvements were grouped into themes. Results indicated six themes in terms of primary sources of stress. In the theme of Exposure/ Infection, nurses described the stress from

being potentially exposed to COVID-19. Within the theme of Illness/ Death, nurses stated the stress of patients, coworkers, and family members who passed away due to the pandemic. Nurses described increased stress from workplace factors, such as unsteady relationships with coworkers (Arnetz et al., 2020a).

In the theme of PPE/ Supplies, nurses stated the stress from unclear PPE guidelines. Nurses described stress from the unknown association of the pandemic, such as the comprehension of viral symptoms (Arnetz et al., 2020a). In the final theme of Opinions/ Politics, nurses described stress from failed political administrations regarding support for nurses during the pandemic. As with all qualitative studies, the limitations of this study included potential researcher bias, which could have occurred during the data analysis process. Furthermore, the small sample size of the study limited the generalizability of the results to other regions in the United States (Arnetz et al., 2020a).

2.4.5 Post-traumatic stress disorder (PTSD)

PTSD levels were measured in a cross-sectional study by Sagherian et al., (2020), which looked at the psychological well-being of hospital nurses during the COVID-19 pandemic in the United States. Of the 420 participants in this study, 384 were RNs and 36 were nursing assistants. The survey consisted of instruments that measured fatigue (Occupational Fatigue and Exhaustion Recovery scale), insomnia (Insomnia Severity Index), burnout (Maslach Burnout Inventory-Human Services Survey), post-traumatic stress (Short Post-Traumatic Stress Disorder Rating Interview), psychological distress (PHQ-9), and questions regarding workplace demographic specificities. A total of 502 participants experienced PTSD symptoms during the pandemic. Additionally, PTSD levels were more elevated in participants who cared for COVID-19 patients (16.11%) than in those who did not directly care for COVID-19 patients (13.67%).

The results of the study show the levels of PTSD experienced by nurses during the pandemic, especially in nursing care for COVID-19 patients. Limitations noted by the authors included the study's cross-sectional design, which restricted the ability to see changes in participant PTSD levels through the various phases of the pandemic. Recommendations included the need for further research to explore the long-term psychological impacts of COVID-19 on front-line nurses (Sagherian et al., 2020).

2.5 Workplace Factors Affecting Nurses

Nine studies looked at workplace factors affecting the mental health of nurses during the COVID-19 pandemic (Ali et al., 2020; Arnetz et al., 2020a; Cho et al., 2021; Havaei et al., 2021b; Iheduru-Anderson, 2020; LoGiudice & Bartos, 2021; Schroeder et al., 2020; Shaffer et al., 2020; White, 2021). The workplace factors analyzed included staffing inadequacy, resources and support, and workplace safety.

2.5.1 Staffing Inadequacy

Havaei et al. (2021b) conducted a study to investigate how workplace conditions influenced the mental health of Canadian nurses during the COVID-19 pandemic. This research utilized a cross-sectional survey approach and was carried out in an undisclosed province in Canada between June and July 2020. A total of 3,676 participants completed the survey, resulting in a response rate of 10%. Among the participants, approximately 80% were RNs and registered psychiatric nurses, while the remaining 19% were LPNs. Descriptive statistics were employed for the analysis of participant characteristics. Nursing workplace conditions were explored using 23 questions regarding five key domains of a nurse's work environment: workplace safety, access to resources and supplies, organizational preparedness, organizational support, and workplace relations (Havaei et al., 2021b).

More than half of the nurse participants (52%) indicated inadequate levels of nurse staffing (Havaei et al., 2021b). Regarding workplace safety, 80% of the participants feared COVID-19 exposure in their work environments. Regarding organizational preparedness, 41% of participants expressed their organization's transparency with decisions related to COVID-19 as being poor. In terms of organizational support, the study found that 24% of participants were required to continue working despite confirmed exposure to COVID-19, and 18% expressed dissatisfaction with the level of support from their organization. These findings highlight the challenging workplace conditions, including inadequate staffing, faced by nurses during the pandemic. It should be noted that the study had limitations, including a low response rate, which may introduce sampling bias and reduce the generalizability of the findings. The recommendations from the study emphasized the need for improved policies and support for nurses' workplace conditions during the COVID-19 pandemic (Havaei et al., 2021b).

2.5.2 Resource Adequacy

Furthermore, a cross-sectional study conducted by Ali et al. (2020) explored perceived stressors and mechanisms to reduce stress levels among a sample of nurses in the United States. A total of 109 participants were included in this study; 33 of the nurses were general nurses, 31 were ICU nurses, 19 were Operating Room nurses, 12 were Emergency Room nurses, and 14 worked in other departments. In terms of statistical analysis, descriptive statistics such as the mean, frequency, and standard deviations were conducted to describe the study's participant characteristics. The results highlighted that 65% of nurses were concerned about the lack of psychological support from their healthcare organization. Additionally, 79% were worried about PPE shortages, 69% were worried about ventilator shortages, and 79% were concerned about face mask shortages within their work environments. The results highlight the lack of resources

and support provided to nurses during the pandemic such as PPE. Limitations included the lack of sampling diversity because most sampled nurses came from two non-profit hospitals in the same state. Recommendations indicated the need for increased resources and relief to better assist nurses (Ali et al., 2020).

A cross-sectional study conducted by Cho et al., (2020) looked at how hospital nurses perceived the resources provided by their organizations during the COVID-19 pandemic. A total of 360 participants participated in this study; most were RNs (n=332), and the rest were certified nursing assistants (n=28). Participants were invited to complete an online questionnaire by media posts and email from May to June 2020. Regarding data collection, responses to the survey question “During the COVID-19 pandemic, did your hospital provide you with any extra resources?” were analyzed. Summative content analysis, as explicated by Hsieh and Shannon (2005), was employed for data analysis, involving the identification of specific words in participant comments to understand particular situations. The findings of the study revealed that the hospital provided five types of resources, including basic needs (such as food and childcare), personal health and safety practice, financial support, managerial support, and communication. However, participants reported a decrease in available resources for nurses since the onset of the pandemic, without adequate compensatory support. Moreover, some resources were suspended as the pandemic persisted, as noted by nurses. Importantly, the study had limitations, including limited generalizability of results due to its small-scale focus on a specific region in the South and Midwest of the United States (Cho et al., 2021).

2.5.3 Workplace Safety

A cross-sectional web-based study conducted by Shaffer et al., (2020) explored the impact of the COVID-19 pandemic on immigrant nurses working in the United States. This

study had 1,574 nurse participants working in various settings that included 953 nurses in hospital settings, 348 nurses in nursing homes/rehabilitation centres, 97 nurses in ambulatory care centres, 78 nurses in home health care, 30 nurses in educational settings, and 68 nurses in other care settings. The online questionnaire included COVID-19 questions such as hours spent working, whether nurses had access to adequate PPE, overall workplace safety, and pay compensation. This questionnaire was designed by the Commission of Graduates of Foreign Nursing Schools (CGFNS). With regard to workplace safety, 21% of respondents disagreed that overall safety for nurses had improved, and 8% strongly disagreed that workplace safety had improved since the pandemic's start. The results show nurses' perspectives on the lack of workplace safety during the pandemic. Limitations included the sample size consisting only of immigrant nurses working in the United States, which may not reflect the mental health of all nurses working in the United States during the pandemic. Furthermore, specific statistical analysis methods for the study were not explained, which can decrease the internal validity of the study (Shaffer et al., 2020).

2.6 Support Availability

Three studies examined nurses' lack of specific support, such as mental health assistance (Iheduru-Anderson, 2020; Lapum et al., 2021; White, 2021). These studies also highlighted the need for further support methods provided to nurses during the pandemic. Access to mental health professionals such as psychiatrists and psychologists was provided as a form of support for mental health. Nurses reported inadequate support for coping with their overall health outcomes in their workplace and personal lives (Iheduru-Anderson, 2020; Lapum et al., 2021; White, 2021).

2.6.1 Lack of Support

In 2021, Lapum et al. conducted a narrative qualitative study in Toronto, Canada, to investigate the emotional support that nurses working in acute hospital care settings received during the COVID-19 pandemic. The study consisted of 20 RNs who worked with COVID-19 patients and were recruited from six different hospital institutions. Semi-structured interviews were conducted using Zoom technology, and the researchers employed a narrative inquiry approach based on Lieblich et al.'s (1998) methodology to analyze the data. By using components from participant interviews, this approach helped to enhance the understanding of the specific phenomenon under investigation (Lapum et al., 2021).

The interviews yielded three themes, “the organic emergence of support, intentional forms of support, and the social justice nature of support” (Lapum et al., 2021, p. 3). The theme of organic emergence of support, looked at the camaraderie formed by groups of nurses working through the pandemic together. The theme of intentional forms of support revealed formalized support systems available to nurses, such as mental health supports, informational supports, and resource supports. The theme of the social justice nature of support explored the emotional experiences of nurses, as well as the recognition and compensation of nurses during the pandemic. Within the theme of intentional forms of support, the nurse participants expressed a lack of mental health assistance, such as a psychiatrist, and difficulty accessing these services during the pandemic. The study’s limitations included the inability to guarantee anonymity among participants (Lapum et al., 2021).

A phenomenological study conducted in the United States between October and November 2020 looked at the experiences of nurse managers during the COVID-19 pandemic (White, 2021). This study consisted of 13 nurses: seven nurse managers and six nurse manager

assistants. Data collection was completed with semi-structured interviews conducted via teleconference and comprised ten open-ended questions central to the participants' experiences. This study used Smith's interpretative phenomenological analysis approach for data analysis, which was conducted by two major processes: iterative and data reduction approaches. The iterative approach consisted of going through the data set within and across each set of transcripts. The data reduction approach included creating codes, patterns, and themes. The study found four significant themes (White, 2021).

The theme of Being There for Everyone looked at nurse managers' roles and interactions with nurses (White, 2021). The theme of Leadership Challenges explored the challenges of being a nurse manager. The theme of Struggles, Support, and Coping looked at participants' experiences seeking support regarding emotional issues. The participants in the study utilized various coping supports, such as seeking relief from family and engaging in exercise, to manage the heightened levels of anxiety, depression, and stress during the pandemic. However, the nurses highlighted challenges in accessing the mentioned supports within their work environments. The theme of Strengthening My Role looked at how nurses were able to evaluate their roles within the workplace and changes made to their roles during the pandemic.

Limitations included selection bias, as all participants were recruited from one geographic area that contained various healthcare institutions (White, 2021).

A phenomenological study explored the working experiences of a sample of 28 acute care nurses in the United States (Iheduru-Anderson, 2020). All participants were RNs and were invited through direct emails or social media advertisements. Unstructured interviews were conducted over the telephone from May to June 2020. Open coding was performed after creating transcripts of the audio files from all the nurse participants. There were five themes created from

this qualitative analysis. The theme of *Emotional roller coaster* described the numerous emotions felt by nurses during various phases of the pandemic. Certain emotions included anger, scared and denial. In the theme of *Self-care habits*, nurses described having a lack of self-care habits and support available to them to manage mental health outcomes such as anxiety and stress (Iheduru-Anderson, 2020).

The theme of *Hoping for the Best explains nurses'* lack of control over workplace factors such as having enough PPE (Iheduru-Anderson, 2020). The theme of *I feel Lucky* described nurses feeling fortunate they were not sick and could provide financial compensation for their families. The final theme of *Nurses are Not Invincible* denoted how nurses felt they were disposable by their workplace organizations in terms of how they had to continue working regardless of their health status and lack of support and resources. Overall, this study highlighted the experiences of nurses working during the pandemic without the appropriate resources and support. The limitation of this study includes the qualitative nature, which reduces the generalizability. Furthermore, all interviews were conducted via telephone, which did not allow the researcher to observe the participant's body language (Iheduru-Anderson, 2020).

2.7 Summary of Literature prior to and during the pandemic

In summary, the quality of nurses' worklife prior to the pandemic identified increased lack of workplace resources, increased workload, and decreased levels of support from management resulted in heightened intention to leave nursing (Halter et al., 2017; Nowrouzi-Kia et al., 2015b; Nowrouzi-Kia & Fox, 2019). There were growing concerns about workplace safety and a decrease in overall job satisfaction (Hall & Visekruna, 2020; Song et al., 2023). Within the nurses' work environment, high job strain and low control strongly contributed to workplace absenteeism (Enns et al., 2015). Additionally, increased workplace stress, undesirable relations

with other healthcare professionals, and decreased opportunities for professional development negatively impacted nurses' workplace environments (Nowrouzi-Kia et al., 2015a).

Prior to the pandemic, Canadian nurses reported experiencing increased levels of stress and PTSD, particularly after harmful work incidents (MNU, 2015). These studies highlight the pre-existing trend of problematic workplace conditions and mental health outcomes that have affected and continue to affect the Canadian nursing workforce. The COVID-19 pandemic has significantly impacted nurses, including increased workload and workplace stress, resulting in a higher intention to leave the nursing profession (RNAO, 2021; Statistics Canada, 2022).

Decreased workplace safety was associated with increased intention to leave nursing jobs (Murphy et al., 2022). Nurses' general mental health has deteriorated during the pandemic, with increased levels of depression, anxiety, and stress as specific mental health outcomes (Murphy et al., 2022).

2.8 Synthesis of Literature

All 15 articles examined nurse populations in North America working in hospital settings during the COVID-19 pandemic (Ali et al., 2020; Arnetz et al., 2020a; Arnetz et al., 2020b; Crowe et al., 2020; Iheduru-Anderson, 2020; Cho et al., 2021; Havaei et al., 2021b; Kim et al., 2020; Lapum et al., 2021; LoGiudice & Bartos, 2021; Sagherian et al., 2020; Schroeder et al., 2020; Shaffer et al., 2020; Tokac & Razon, 2021; White, 2021). The literature review consisted of nine cross-sectional web-based study designs (Ali et al., 2020; Arnetz et al., 2020a; Arnetz et al., 2020b; Cho et al., 2021; Havaei et al., 2021b; Kim et al., 2020; Sagherian et al., 2020; Shaffer et al., 2020; Tokac & Razon, 2021), two of the studies were convergent parallel mixed method designs (Crowe et al., 2020; LoGiudice & Bartos, 2021); two of the articles were qualitative phenomenological studies (Iheduru-Anderson, 2020; White, 2021), one study was a

qualitative narrative study (Lapum et al., 2021) and the remaining study was a qualitative descriptive study (Schroeder et al., 2020).

As per the review of literature articles, the mental health of nurses during the COVID-19 pandemic had worsened (Ali et al., 2020; Arnetz et al., 2020a; Arnetz et al., 2020b; Crowe et al., 2020; Iheduru-Anderson, 2020; Cho et al., 2021; Havaei et al., 2021b; Kim et al., 2020; Lapum et al., 2021; LoGiudice & Bartos, 2021; Sagherian et al., 2020; Schroeder et al., 2020; Shaffer et al., 2020; Tokac & Razon, 2021; White, 2021).

In terms of mental health outcomes, elevated rates of anxiety (Arnetz et al., 2020b; Crowe et al., 2020; Havaei et al., 2021b; Kim et al., 2020; Tokac & Razon, 2021), depression (Arnetz et al., 2020b; Crowe et al., 2020; Havaei et al., 2021b; Kim et al., 2020; Tokac & Razon, 2021), stress (Ali et al., 2020; Arnetz et al., 2020a; Crowe et al., 2020; Kim et al., 2020; LoGiudice & Bartos, 2021) and PTSD (Arnetz et al., 2020b; Crowe et al., 2020; Havaei et al., 2021b; Sagherian et al., 2020) were found amongst nurses working during the COVID-19 pandemic.

Specific workplace factors that contributed to the negative quality of nurses' worklife and adverse mental health outcomes included staffing inadequacy (Havaei et al., 2021b; Schroeder et al., 2020), lack of resources and support (Ali et al., 2020; Arnetz et al., 2020a; Arnetz et al., 2020b; Cho et al., 2021; Havaei et al., 2021; Iheduru-Anderson, 2020; LoGiudice & Bartos, 2021; Schroeder et al., 2020; Shaffer et al., 2020; White, 2021), and heightened concern for workplace safety (Havaei et al., 2021b; Shaffer et al., 2020). In wake of the negative impact of workplace conditions on the overall mental health of nurses, further research is required to improve the workplace conditions of nurses in the future.

The literature review indicated that nurses needed increased mental health and coping supports (Iheduru-Anderson, 2020; Lapum et al., 2021; White, 2021). Mental health supports included having access to a psychiatrist or a psychologist. Nurses indicated a lack of coping resources to manage overall health outcomes in workplace settings and their personal lives. Coping supports had no definite meaning but referred to anything that could help mitigate mental health outcomes (Iheduru-Anderson, 2020; Lapum et al., 2021; White, 2021).

2.9 Literature Review Limitations

Limitations were noted in each of the 15 articles. One of the common limitations of literature review articles was the need for more research to draw more definitive conclusions (Crowe et al., 2020; Iheduru-Anderson, 2020; Schroeder et al., 2020; White, 2021). Additionally, the authors indicated the limitation of the cross-sectional study design, which disallowed the recording of observations of the mental health state of nurses during the different phases of the pandemic (Ali et al., 2020; Cho et al., 2021; Crowe et al., p. 5, 2020; Havaei et al., 2021b; Kim et al., 2020; Shaffer et al., 2020; Tokac & Razon, 2021). Researcher bias refers to the influence of preconceived ideas by the researcher on the study; this can result in inaccurate results (Thorne et al., 2004). This is a common limitation within qualitative research studies due to their interpretive nature (Thorne et al., 2004). Several research studies recognized researcher bias as a potential limitation due to the qualitative study design (Iheduru-Anderson, 2020; Schroeder et al., 2020; White, 2021). Lastly, the small sample sizes within certain research studies decreased the generalizability of the findings in larger settings (Crowe et al., 2020; Iheduru-Anderson, 2020; Lapum et al., 2021; Schroeder et al., 2020; Shaffer et al., 2020; Tokac & Razon, 2021; White, 2021).

2.10 Rationale for Study

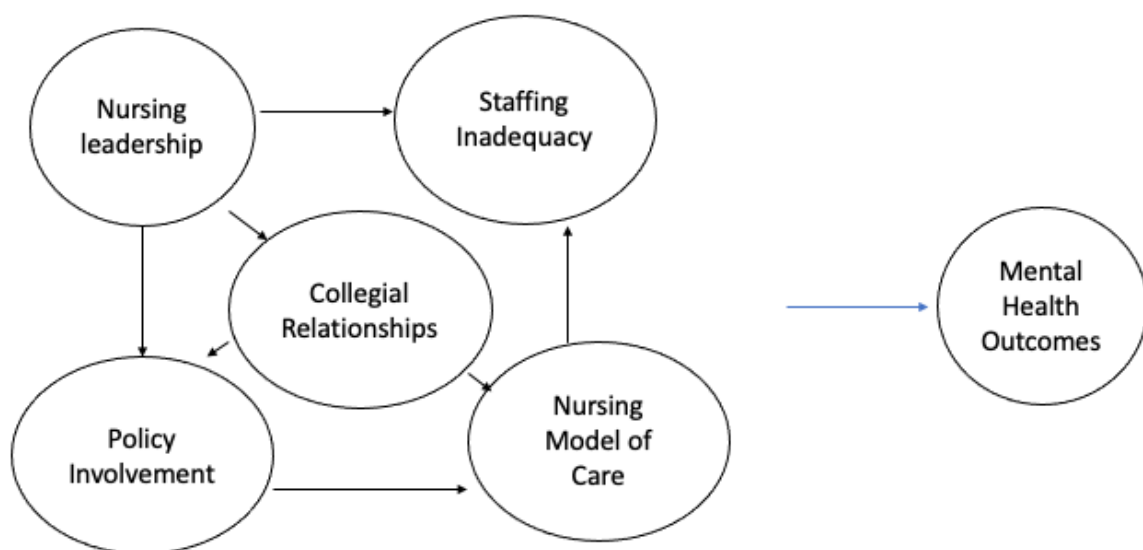
In summary, the literature review identified negative mental health factors impacting nurses in Northern America during the COVID-19 pandemic (Ali et al., 2020; Arnetz et al., 2020a; Arnetz, Goetz 2020b; Crowe et al., 2020; Iheduru-Anderson, 2020; Cho et al., 2021; Havaei et al., 2021b; Kim et al., 2020; Lapum et al., 2021; LoGiudice & Bartos, 2021; Sagherian et al., 2020; Schroeder et al., 2020; Shaffer et al., 2020; Tokac & Razon, 2021; White, 2021).

The researchers identified a gap in knowledge in the existing literature, specifically the lack of research focusing on the mental health of RNs and RPNs working during the COVID-19 pandemic in Northern Ontario, Canada. As a result, the objective of the current study was to investigate the perceptions of nurses in Northern Ontario regarding the impact of the COVID-19 pandemic on their mental health.

2.11 Adapted Theoretical Framework

A theoretical framework helps identify and inform problems by using existing information about the subject of study (Heale & Noble, 2019). It establishes a groundwork for research inquiries, the literature review, and the methodology and analysis employed. It is logically presented, and the relationships between the variables and provides a basis for interpreting the findings within the context of existing knowledge (Heale & Noble, 2019). The adapted Nursing Worklife Model was used to explore how the five central domains of a nurses' work environment impacted nurses' mental health during the COVID-19 pandemic (Ballard et al., 2016; Leiter & Laschinger, 2006; Manojlovich & Laschinger, 2007; Roche et al., 2015). The outcome variable within this adapted framework is the mental health of nurses (Ballard et al., 2016; Leiter & Laschinger, 2006; Manojlovich & Laschinger, 2007; Roche et al., 2015). The diagram below illustrates the adapted theoretical framework for this study.

Figure 2:0

Adapted Nursing Worklife Model

(Leiter & Laschinger, 2006, p. 139)

Several researchers have used the Nursing Worklife model to assess outcomes related to nurses' quality of worklife (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022; Roche et al., 2015). An integrative review compared the Nursing Worklife model with other theoretical frameworks to examine nurses' organizational well-being (Bella et al., 2022). A national survey study adopted the Nursing Worklife Model to explore nurses' perceived professional practice behaviours, turnover intent and perceived quality of care (Laschinger et al., 2016b). A web-based survey study examined how leadership affected burnout among nurses using the Nursing Worklife model (Lewis & Cunningham, 2016). A cross-sectional study used the Nursing Worklife Model to examine how spiritual leadership impacted work performance (Pio, 2022). A cross-sectional study between a sample of Canadian and

Australian nurses' groups used an adapted version of the Nursing Worklife model to examine the turnover intention of nurses (Roche et al., 2015).

The Nursing Worklife model highlights five critical factors that affect the quality of a nurse's worklife: effective leadership, relationships among coworkers, involvement in policy, staffing, and the nursing model of care (Ballard et al., 2016, p. 184; Leiter & Laschinger, 2006; Manojlovich & Laschinger, 2007; Roche et al., 2015). The model suggests that developing a supportive work environment for nurses is predicated on effective leadership. The leadership domain is directly linked with physician and nurse interactions, involvement in policy implementation and the percussion of staffing adequacy. Collegial relationships play a role in shaping nurses' involvement in policy development and the overall nursing model of care. Additionally, policy involvement can influence the nursing model of care. The nursing model of care emphasizes the importance of adequate staffing levels and personal accomplishment. Staffing adequacy, in turn, can impact nurses' levels of emotional exhaustion, depersonalization, and personal accomplishment (Ballard et al., 2016; Leiter & Laschinger, 2006; Manojlovich & Laschinger, 2007; Roche et al., 2015).

Obtaining and managing resources is a deciding part of nursing leadership because it enables nurses to give their patients high-quality care (Ballard et al., 2016; Leiter & Laschinger, 2006; Manojlovich & Laschinger, 2007; Roche et al., 2015). In this regard, collegial ties are particularly essential because nurses frequently work in interdisciplinary teams where they must be proficient communicators and collaborators. Another pivotal component of nursing leadership is participation in policy decision-making, which gives nurses a voice in establishing healthcare legislation and enhancing the standard of patient care. The nursing model of care is particularly significant because it highlights nurses' distinctive contributions to patient care. Staffing levels

must be suitable to give nurses the tools they need to treat patients safely and effectively. Nurses may struggle to accomplish their own goals at work when staffing levels are insufficient (Ballard et al., 2016; Leiter & Laschinger, 2006; Manojlovich & Laschinger, 2007; Roche et al., 2015).

2.12 Summary

A combination of a traditional and narrative literature review was employed for this thesis (Gough et al., 2017; Pae, 2015). The finalized literature review articles were critically appraised using three different tools for qualitative, quantitative, and mixed-method study designs (Critical Skills Appraisal Tool, 2021; Hong et al., 2018; Joanna Briggs Institute Faculty of Health and Medical Science, 2017). Previous research has documented the poor quality of worklife among nurses and the adverse mental health outcomes prior to the pandemic, as reported by Enns et al. (2015), Franche et al. (2011), Hall & Visekruna (2020), Halter et al. (2017), Nowrouzi-Kia et al. (2015a; 2015b), MNU (2015), and Song et al. (2023).

Similarly, research conducted during the pandemic has identified poor quality of nurses' worklife and similar mental health outcomes, which in some cases were aggravated by the pandemic (Eche et al., 2022; Nowrouzi-Kia et al., 2022; RNAO, 2021; Statistics Canada, 2022). The review of literature discovered elevated rates of anxiety (Arnetz et al., 2020b; Crowe et al., 2020; Havaei et al., 2021b; Kim et al., 2020; Tokac & Razon, 2021), depression (Arnetz et al., 2020b; Crowe et al., 2020; Havaei et al., 2021b; Kim et al., 2020; Tokac & Razon, 2021), stress (Ali et al., 2020; Arnetz et al., 2020a; Crowe et al., 2020; Kim et al., 2020; LoGiudice & Bartos, 2021) and PTSD (Arnetz et al., 2020b; Crowe et al., 2020; Havaei et al., 2021b; Sagherian et al., 2020). In addition, specific workplace factors that contributed to the negative quality of nurses' worklife and adverse mental health outcomes included staffing inadequacy (Havaei et al., 2021b; Schroeder et al., 2020), lack of resources and support (Ali et al., 2020; Arnetz et al., 2020a;

Arnetz et al., 2020b; Cho et al., 2021; Havaei et al., 2021; Iheduru-Anderson, 2020; LoGiudice & Bartos, 2021; Schroeder et al., 2020; Shaffer et al., 2020; White, 2021), as well as heightened concern for workplace safety (Havaei et al., 2021b; Shaffer et al., 2020). The literature review indicated that nurses needed specific coping resources such as mental health training (Kim et al., 2020; Iheduru-Anderson, 2020; Lapum et al., 2021; White, 2021).

The Nursing Worklife Model was adapted to guide interpretations on how the five central domains of a nurses' work environment impacted nurses' mental health during the COVID-19 pandemic (Ballard et al., 2016; Manojlovich & Laschinger, 2007; Roche et al., 2015). In summary, this Chapter provides a detailed look at how the literature review was conducted, information regarding the quality of nurses' worklife before and during the pandemic, the results of the literature review, and the adapted theoretical framework that will help guide the study's results.

CHAPTER 3: METHODOLOGY AND METHODS

3.1 Purpose

This research study aimed to explore Northern Ontario nurses' perceptions regarding the effects of the COVID-19 pandemic on their mental health. This research may potentially help shed insight into the factors negatively impacting nurses' mental health in Northern Ontario. Furthermore, the study's findings may inform healthcare organizations of what may be required to support nurses during the current COVID-19 pandemic and future worldwide public health crises. The research question guiding this study was: What are the perceived mental health impacts of COVID-19 on Northern Ontario registered nurses and registered practical nurses working during the pandemic? This chapter will discuss operational study definitions, research design, data collection, data analysis, methodological rigour, and reflexivity utilized within the thesis.

3.2 Operational Study Definitions

Mental health can be defined in various ways, including prevalent conditions such as anxiety, depression, stress, PTSD and burnout. For the purposes of this study, each of the above conditions has been defined according to the Canadian Mental Health Association (CMHA). These health constructs are not exclusive to psychiatric diagnosis.

3.2.1 Mental Health

The CMHA defines mental health as a state of well-being that includes our psychological, emotional, and social well-being (CMHA, 2020). It ultimately determines how we handle stress and relate to other people. Psychological well-being is the condition of our minds and cognitive functions. An individual with good psychological well-being may exhibit traits such as optimism, emotional stability, and the ability to regulate their thoughts and emotions effectively. The capacity to identify, comprehend, and manage our emotions in a healthy and balanced manner is referred

to as emotional well-being. Emotional well-being allows us to experience positive emotions, such as happiness and joy, and navigate and recover from negative emotions, such as sadness or anger. Social well-being encompasses our interactions and relationships with others. A robust social support network helps protect against stress and hardship and improves overall mental health. Mental health ultimately determines how we handle stress and relate to others (CMHA, 2020).

3.2.2 Anxiety

According to the CMHA, anxiety is characterized by ongoing excessive and unnecessary worry or concern about activities or events in an individual's surroundings (CMHA, 2016a). Anxiety symptoms can become more pronounced and persistent, significantly affecting a person's ability to engage in their daily activities and interact with others healthily and productively. Although the effects of anxiety can differ from person to person, they frequently affect concentration, judgment, and general cognitive functioning. When one's mind is consumed with concern and the fear of potential negative outcomes, it might be difficult for them to concentrate on their responsibilities. (CMHA, 2016a).

3.2.3 Depression

Depression is a mental illness that dramatically affects an individual's mood (CMHA, 2015). A persistent sense of worthlessness and an ongoing feeling of dread, hopelessness, or guilt are two of the identifying indications of depression. People who have depression have a persistently depressed mood that lasts for weeks or even months at a time. They could experience a barrage of unfavourable feelings and fail to find enjoyment or interest in pursuits they once found pleasurable. These persistent emotions make it challenging for individuals to feel joy or carry out regular activities. (CMHA, 2015).

3.2.4 Stress

According to the CMHA (2016c), stress is the physiological reaction to a potential or actual threat (CMHA, 2016c). While brief periods of stress might be advantageous, continuous, or chronic stress can be harmful to one's physical and mental health. It can cause various health problems when the body is constantly exposed to stresses without enough time for healing or rest (CMHA, 2016c). According to the National Institute of Mental Health, chronic stress may have several adverse effects, including a higher chance of acquiring diseases like diabetes, hypertension, and heart disease (National Institute of Mental Health Health, 2021).

3.2.5 Post-traumatic Stress Disorder (PTSD)

PTSD is a mental health illness involving an individual who has undergone an adverse traumatic experience (CMHA, 2016b). The core characteristic of PTSD is the development of repetitive symptoms that revolve around the traumatic event. Reminders of the traumatic event or unplanned occurrences of flashbacks might cause intrusive thoughts, intense dreams, or reliving of the event. Repetitive PTSD symptoms and triggers can cause a person a great deal of distress and impairment in many different facets of their lives. (CMHA, 2016b).

3.2.6 Burnout

Burnout is defined as chronic physical and emotional weariness (CMHA, 2023). It can be brought on by extended stress periods and heavy workloads. Burnout can physically appear in many ways, such as chronic weariness, frequent headaches, tense muscles, and sleep difficulties. These physical symptoms can be crippling, making it challenging for people to carry out their regular activities and fulfill their duties. Emotionally, burnout can lead to feelings of cynicism, detachment, and a loss of enthusiasm. Individuals could feel emotionally numb, disengaged from

their jobs, and less proud of their accomplishments. In order to avoid additional damaging effects on both mental and physical health, burnout must be addressed (CMHA, 2023).

3.2.7 Moral Distress

Moral distress is defined as painful feelings and/or psychological disequilibrium that occurs when a nurse is conscious of the morally appropriate action a situation requires but cannot carry out that action because of institutionalized obstacles (Jameton, 1993). These obstacles can include a lack of time, supervisory reluctance, an inhibiting medical power structure, institution policy, or legal constraints. Painful feelings can consist of frustration, anger, and anxiety when faced with institutional obstacles and interpersonal conflict about values (Jameton, 1993). Moral distress brought on by ethical disengagement can have far-reaching effects (CNA, 2017; PACPMH, 2020). In situations where they are unable to align their actions with their moral beliefs, feelings of frustration, anger, or guilt can arise (CNA, 2017; PACPMH, 2020).

3.2.8 Moral Injury

Moral injury is the psychological and emotional distress experienced by individuals, particularly healthcare workers when facing situations that challenge their moral beliefs and values (PACPMH, 2020). These distressing events often involve difficult decisions due to resource constraints or other circumstances beyond their control, such as the COVID-19 pandemic. Instances of moral injury can evoke strong emotions such as anger and guilt in the healthcare worker, which, if not addressed, can lead to long-lasting psychological harm. Since moral injury can have a significant adverse effect on a person's mental health and well-being, it is considered to be at the extremity of the range of harms that can result from such events (PACPMH, 2020).

3.3 Definition of Nurses

For this study, nurses were defined as RNs and RPNs working in Northern Ontario during the COVID-19 pandemic since the onset of the pandemic on March 11, 2020.

3.4 Setting

This study was conducted in Northern Ontario. Northern Ontario encompasses 90% of Ontario's land area, comprising 144 municipalities, 106 First Nations Reserves, 10 territorial districts, and over 150 unincorporated communities (Government of Ontario, 2018). The Ontario provincial government's current definition of Northern Ontario includes the regions of Nipissing, Parry Sound, Manitoulin, Timiskaming, Sudbury, Algoma, Cochrane, Thunder Bay, Rainy River, and Kenora (Government of Ontario, 2018). Appendix A provides a map illustrating Northern Ontario and its surrounding land areas.

3.5 Research Design

This thesis was an inductive qualitative study design which analyzed participants comments using content analysis.

3.6 Inductive Content Analysis Research Method

The inductive content analysis by Kyngäs et al. (2020) was the method used to guide the data analysis. Inductive content analysis can be applied to diverse data sets such as interviews, transcripts, comments, and speeches. It involves examining and interpreting various forms of communication or data to identify patterns and themes. Instead, it seeks to provide comprehensive, in-depth, and insightful insights into people's views and narratives. Inductive content analysis involves a flexible and open-ended data collection process where the researcher does not pre-define categories or coding schemes. This approach can be valuable when exploring a new phenomenon in depth, generating new theories, or understanding individuals' perspectives

and experiences. The COVID-19 pandemic is a new and unique incident suitable for analyzing participant comments using inductive content analysis (Kyngäs, 2020).

3.7 Ethical Considerations

Ethical approval for this research study was obtained from the Laurentian University Research and Ethics Board in Sudbury, Ontario, Canada, on February 28th, 2021. The Research Ethics Board file number is 6020902. Appendix C provides a copy of the ethics approval certificate.

3.8 Sample Size

The target sample consisted of nurses working in Northern Ontario during the COVID-19 pandemic. In 2022, there were 6,321 RNs and 3,631 RPNs (College of Nurses of Ontario, 2022). For this qualitative study, the inclusion criteria consisted of RNs and RPNs who had been employed in Northern Ontario since the onset of the pandemic on March 11, 2020, and were English-speaking, who completed the online survey and provided responses to the qualitative questions. In Phase I of the study, 142 participants completed the survey, with 78 being RNs, 59 being RPNs and five nurses that did not include their nursing classification. In addition, 127 nurses (67 RNs, 52 RPNs and eight participants that did not indicate their nursing classification) responded to the qualitative survey questions and were included in the content analysis conducted for this thesis.

3.9 Recruitment

Researchers worked collaboratively with provincial nursing associations to recruit nurses for this study. Once the survey was available on REDCap, the study was advertised on the Centre for Research in Occupational Safety and Health website and in the Registered Practical Nurses Association of Ontario (WeRPN) newsletters (Appendix D). REDCap is a software tool for

creating, distributing, and managing online surveys and databases (Harris et al., 2009; Harris et al., 2019). Recruitment materials, including a study summary, participant eligibility criteria, a survey link, and contact information for the principal investigator, were sent via email to RNAO and WeRPN to promote the study. In addition, social media platforms were utilized for recruitment and advertisement, with the Centre for Research in Occupational Safety and Health at Laurentian University, WeRPN, and RNAO sharing information about the study on their respective Twitter accounts.

3.10 Data Collection

Data collected from the survey was used for this study. Data was collected from March 2021 till the end of June 2021. A reminder email was sent to the Ontario Nurses Association on June 22, 2021, to obtain more participants to complete the survey. Once participants accessed the survey link, they were provided with information about the purpose of the study, potential risks and benefits, confidentiality, and investigators' contact information for further questions prior to the demographic (Appendix E) and the Copenhagen Psychological Questionnaire (Appendix F). The survey was voluntary, and no monetary incentive was provided to participants to complete the questionnaire. Informed consent to participate was implied when participants concluded the survey. The basic demographic information collected included participants' nursing classification, area of practice, position in nursing, gender, age, marital status, ethnicity, number of dependent children and the highest level of education achieved. The Registered Practical Nurses Association of Ontario (WeRPN) asked that two questions be added to the questionnaire, that was included at the end of the survey. The survey question "What changed most dramatically in your life with the pandemic?" was used to collect data to answer the research question for this study.

3.11 Data Analysis

3.11.1 Inductive Content Analysis

The data stored on the REDCap server was accessible to the principal investigators of the study as well as to the research assistant (DW). Participant comments were extracted from the REDCap server and downloaded onto a secured, password-protected computer in a Microsoft Word document. The comments were organized into separate tables for each nursing classification. To protect participant privacy, alphanumeric codes were assigned to each participant, such as RN01 for Registered Nurses and RPN01 for Registered Practical Nurses, to maintain confidentiality. Nurses who provided comments but did not indicate if they were RNs or RPNs were assigned N01 for nurses. Transcription conventions were used to denote meanings or emphasis from the participant's comments (Bailey & Tilley, 2002, p. 577; Rubin & Rubin, 2005, p. 9). The table below provides examples of the transcription convention used. Appendix G lists transcription conventions used to analyze participant comments.

Table 1.0: Examples of Transcription Conventions

Symbol	Meaning
CAPITAL LETTERS	Marks an increase in the voice tone relative to previous talk
Ellipses (...)	Use to indicate when the participant is trailing off or has a longer pause (3+ seconds) at the beginning of a sentence
Quotes (“ “)	Used to demonstrate what someone said. Do not use when the person was only thinking of something, but didn't say anything
Dash (-)	Use to indicate when the participant is trailing off or has a longer pause (3+ seconds) at the beginning of a sentence.

(Adapted from Bailey & Tilley, 2002, p. 577; Rubin & Rubin, 2005, p. 9)

The inductive content analysis was conducted according to the following steps: data reduction, data grouping, and formation of themes (Kynge, 2020). A table was designed to

analyze the RNs and RPNs' participant comments in the first step of data reduction. First, I read the entire participant comment set to immerse myself in the data. Next, I went through the entire data set and colour-highlighted data that signified or had meaning related to my research question. The process of reading the data set and marking instances of open codes is an example of data reduction. The codes produced during open coding can be conveyed either by using words that are exactly the same as the raw data or by being significantly modified to better express the substance of the underlying notation of the theme (Kyngäs, 2020).

A codebook was created containing all open codes and their definitions (Kyngäs, 2020). A codebook is essentially a reference manual that provides a list of codes, their descriptions, and it enables researchers to keep track of and record their analytical choices (Roberts et al., 2019). For this study, the codes developed were data-driven (DeCuir-Gunby et al., 2011). For each open code, a definition has been provided with examples from the nurse participant comments that demonstrate the use of the open code (DeCuir-Gunby et al., 2011).

Examples of the development of open codes from raw data are demonstrated from the participant excerpts below. The open code developed from participant excerpt RN03 was negative mental health outcomes. This open code refers to the rise of adverse mental health outcomes since the pandemic's start and has resulted in a decline in mental health status.

RN03 "New mental health diagnosis just prior to the pandemic, was doing better, then the pandemic hit and all went downhill again..."

The open code developed from participant excerpt RN47 was 1) Isolation. This open code refers to how nurses expressed being physically and socially isolated from friends, family and coworkers. The code also refers to how nurses have not been able to travel as often as before the pandemic and the inability to partake in normal pre-pandemic activities such as going to restaurants.

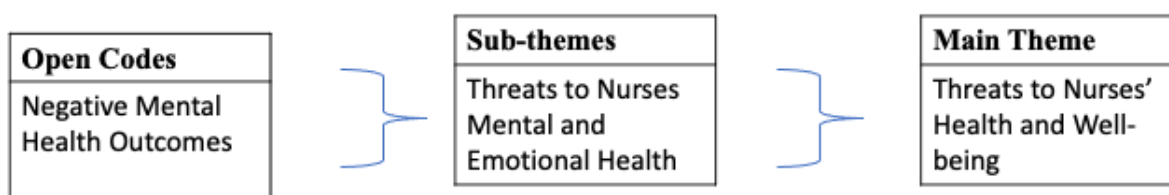
RN47 “Social isolation,, I’m a very social woman, like community involvement such festivals and shows, eating out with my kids has been a huge loss to us with all the restaurants closed...”

It is essential to maintain clear and consistent language throughout the inductive content analysis process to ensure that findings are communicated clearly and effectively (Kyngäs et al., 2020). For example, “Some researchers will use the terms sub-themes/sub-concepts, themes/concepts, and main themes/main concepts in place of sub-categories, categories, and main categories” (Kyngäs., 2020, pp. 15). For this thesis, the terms *sub-themes* and *main themes* were chosen and applied consistently (Kyngäs, 2020).

Next, similarities and differences between the open codes were determined to assess which open codes could be grouped to create sub-themes (Kyngäs, 2020). Open codes that did not fit into sub-themes or lacked data saturation were excluded from the data reduction process (Kyngäs, 2020). The process of grouping open codes to create sub-themes and main themes can be seen in the figure below.

Figure 3.0

Formation of Main Themes from Open Codes



The sub-themes were double-checked through research meetings with my thesis supervisor and committee members. They were then grouped into main themes describing the nurses’ experiences during the pandemic.

3.11.2 Demographic Analysis of Participants

For this study, descriptive statistics were conducted on nurse participants who answered the qualitative survey question. The data was collected using the REDCap survey and analyzed using the International Business Machine Statistical Package for Social Sciences version 24, (International Business Machine, 2022). The variables explored in the descriptive statistics included Job Classification, Job Type, Age, Gender, Ethnicity, Marital Status, Education Attainment, Number of Children, and Mean Age in years.

3.12 Methodological Rigour

Methodological rigour is a set of guidelines and procedures followed in a research study to reduce bias, error, and uncertainty and ensure the results' validity and reliability (Harley & Cornelissen, 2022). The main criterion for rigour, as outlined by Kyngäs et al.'s methodology (2020), is trustworthiness. Trustworthiness was achieved by addressing the following criteria: credibility, confirmability, dependability, authenticity, and transferability.

Credibility refers to how closely and accurately the research findings reflect the original data and the phenomenon that is the subject of the study (Elo et al., 2020). This study's credibility was improved by examining relevant literature describing nurses' mental health during the COVID-19 pandemic (Elo et al., 2020). Furthermore, the Nursing Worklife Model was an applicable theoretical framework for this study because it indicates how the five essential domains in a nurse's work environment impact a variable outcome, such as mental health (Elo et al., 2020).

Additionally, confirming having an appropriate sample size can further improve credibility (Elo et al., 2020). For this study, all participants who answered the qualitative survey question (N=127) were included in the analysis. Nursing classifications included 67 RNs, 52

RPNs and eight nurses who did not provide their nursing classification. This was an appropriate sample size because a repetition of open codes and main themes emerged within RNs and RPNs during the open coding data analysis process (Elo et al., 2020).

Dependability is the trustworthiness of research procedures and was enhanced by describing and documenting each step in the data analysis, collection, and decision-making process, with accurate dates recorded and maintained as records (Elo et al., 2020). For instance, the decision to develop a codebook provided a mechanism to define an open code and categorize all relevant participant excerpts belonging to that specific code. The use of visual diagrams demonstrated specific decision-making routes; for example, a diagram was used to indicate how open codes were developed into sub-themes and main themes (Elo et al., 2020).

Dependability was further enhanced through peer review and dialogue among researchers (Elo et al., 2020). The peer review of open codes and main themes was conducted with my thesis supervisor, an RN with an extensive educational background in the nursing field. During discussions with my thesis supervisor, I identified sub-themes and main themes through inductive content analysis that provided better insight into nurses' perceptions during the COVID-19 pandemic (Elo et al., 2020).

Confirmability is the extent to which the findings of a study can be independently verified, and the conclusions are based on the collected data rather than preconceived ideas (Elo et al., 2020). In this study, the open codes and main themes were reviewed with my thesis supervisor to ensure that the results accurately reflect the content of the comments. Audit trails record the procedures carried out during a project's lifetime and can be used to improve confirmability (Carcary, 2009). A specific example of a decision process made that was part of the audit trail includes how the definitions for the open codes were developed as I analyzed the

participant excerpts. The rationale is that this is more representative of what is being explained in the participant excerpts (Elo et al., 2020).

Authenticity is the degree to which researchers accurately depict a variety of realities or perspectives in research (Elo et al., 2020). Authenticity was demonstrated when presenting the qualitative results from the participant comments, where experts were carefully chosen to describe nurses' perspectives during the pandemic. Including excerpts from different participants reduced the possibility of personal biases or exclamations. Participant excerpts that had the most profound impact on describing a particular theme were chosen (Elo et al., 2020).

Transferability, which refers to the extent to which research findings can be generalized to other contexts or populations, bears significance in a research study (Elo et al., 2020). To improve transferability, observations, questions, and personal reflections were recorded in my research journal. The findings of this study may apply to RNs and RPNs working in the province of Ontario during the COVID-19 pandemic in the sense that the implications of the study could be used to explain the mental health of nurses while working during unprecedented situations within their respective work environments (Elo et al., 2020).

3.13 Reflexivity

As part of qualitative research, reflexivity is commonly used to enhance the credibility of findings and to increase the researcher's understanding of their own work (Dodgson, 2019). A primary goal of reflexivity is to monitor personal biases and opinions to enhance the accuracy of research. In order to actively practice reflexivity, I posed questions stemming from my political, educational, cultural, social, gender, and family origins (Berger, 2015). Some of the questions I asked repeatedly included: "How do I know what I know?" and "What factors could have influenced my decision?" (Dodgson, 2019).

As a graduate student researcher, I understand that this study's research process could be influenced by my own underlying beliefs and ideology, which may have impacted the overall rigour, interpretation, and accuracy of the data analysis. I acknowledge that I had certain biases during the research process, including the pervasive fear of COVID-19 and personal experiences of family members who were affected by the virus. Furthermore, conflicting thoughts about workplace conditions for healthcare workers, such as nurses, during the COVID-19 pandemic arose from information obtained from media and public health guidelines.

Learning about the experiences of certain family and friends who were front-line healthcare workers introduced preconceived notions regarding the experiences of all healthcare workers employed during the COVID-19 pandemic. Throughout the data analysis steps, I employed active questioning by asking myself if I had interjected personal opinions into the results. The findings of this study were reported in a concise manner, in detail, and accurately, reflecting the nurse participants' comments. Reflexivity was also improved with the employment of a research journal that stored and recorded all research-based meetings regarding the data process, collection, and analysis with the research team (Dodgson, 2019). This step ensured that my personal experiences within healthcare settings through my employment, education, and volunteer career did not conflict with the data analysis and was essential in verifying that external factors did not influence the results.

3.14 Summary

In summary, the main objective of my research was to explore how RNs and RPNs working in Northern Ontario perceived the impact of the COVID-19 pandemic on their mental health. The research question that guided this study was: What are the perceived mental health impacts of COVID-19 on Northern Ontario registered nurses and registered practical nurses

working during the pandemic?" The qualitative inductive content analysis approach used to analyze participant comments were guided by the methodology outlined by Kyngäs et al. (2020). Trustworthiness for the qualitative aspects of this study was achieved by ensuring the following criterion confirmability, dependability, credibility, authenticity, transferability, and reflexivity criteria, as outlined by Kyngäs et al. (2020) was met. The decisions made in data collection, data analysis, methodological rigour and interpretation of findings were in line with the qualitative methodology utilized in this research.

CHAPTER 4: RESULTS

4.1 Introduction

This chapter presents findings of RNs' and RPNs' perceptions of working in Northern Ontario during the COVID-19 pandemic. The qualitative content analysis of participants' comments was used to answer the research question: The research question guiding this study was: What are the perceived mental health impacts of COVID-19 on Northern Ontario registered nurses and registered practical nurses working during the pandemic? Furthermore, this chapter includes results from the descriptive statistics of the demographic information of nurse participants.

4.2 Demographic Results of Nurses

A total of 127 nurses provided a qualitative comment; this included 67 RNs, 52 RPNs and eight nurses who did not provide their nursing classification. Specific descriptive statistical categories with fewer than 10 participants were not presented to protect the participant's identity (Wasserman & Ossiander, 2018). For example, demographic for people over 65 were not presented as there were fewer than 10 participants (Wasserman & Ossiander, 2018).

A third of the participants (32%) were in the age range of (25-34). Many of the participants identified as female (75%). Three quarters of the participants identified as White/Caucasian. Over half (55%) indicated they were in a married/common-law/committed relationship. The most common level of education was a community college diploma, reported by 41.7% of the nurses. Not all 127 participants completed the demographic information section and are indicated by the N for each category. A complete background can be seen in Table 2.0.

Table 2.0: Demographic Information of Nurse Participants

Variable	Frequency	Percentage	Total
Job Classification			N=127
Registered Nurses	67	52.7%	
Registered Practical Nurses	52	46%	
Unknown nursing classification	8	6.2%	
Age (in years)			N=96*
25-34	41	32%	
35-44	18	14%	
45-54	19	15%	
55-64	18	14%	
Gender			N=105*
Female	95	75%	
Male	10	7.8%	
Ethnicity (N=95)			N=95*
Caucasian/ White	95	75%	
Marital Status			N=103*
Single	22	17.3%	
Married/ Common Law/ Committed Relationship	70	55%	
Separated/ Divorced/ Widowed	11	8.6%	
Educational Attainment			N=94*
Community College Graduate	53	41.7%	
University Bachelor's Degree	41	32.2%	
Number of Children			N=103*
0-1	85	70%	
2 Children or more	18	14%	

* Indicates demographic categories in which not all 127 participants provided answers

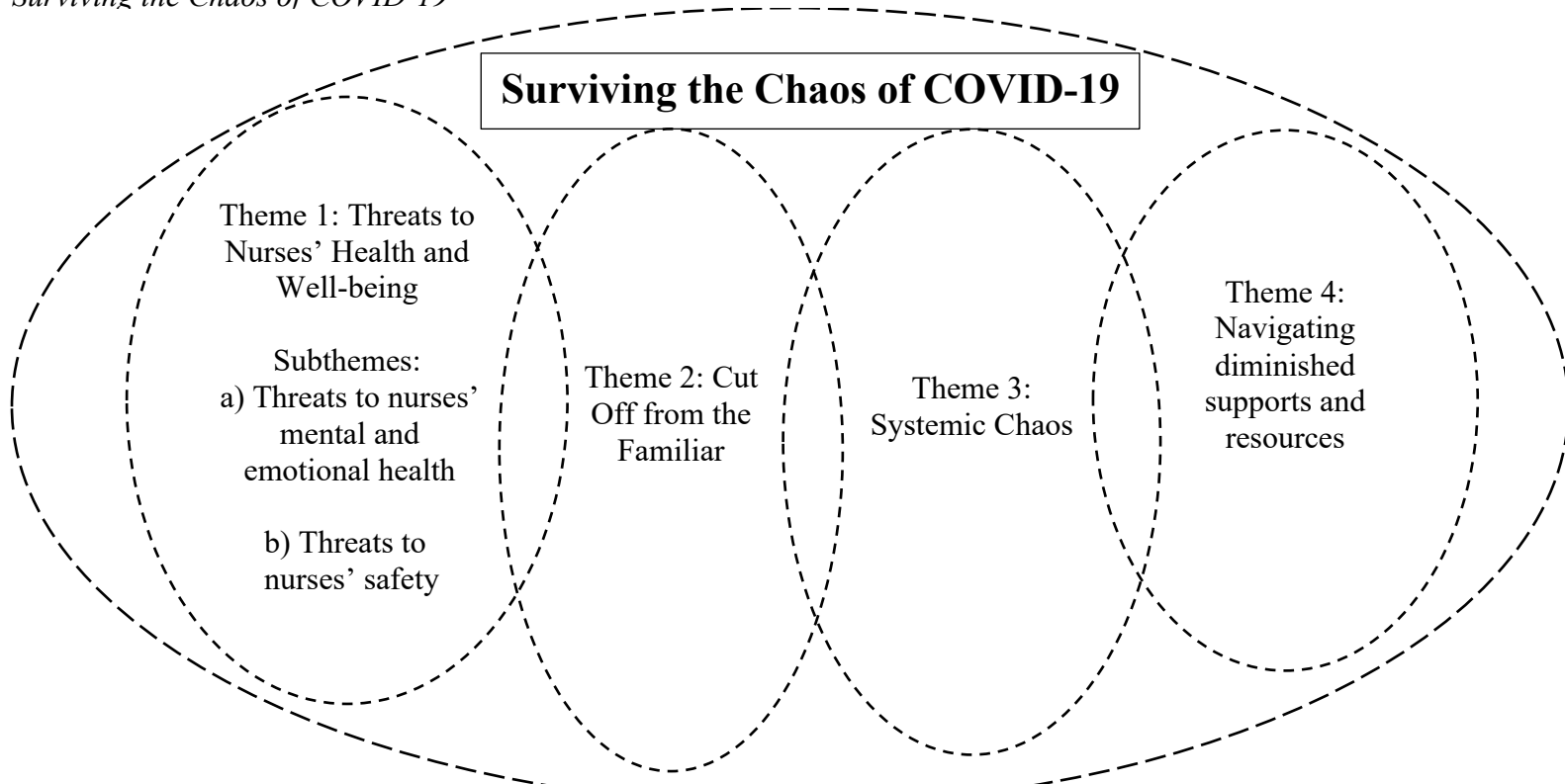
4.3 Qualitative Findings: Surviving the Chaos of COVID-19

The key theme of the qualitative content analysis was *Surviving the Chaos of COVID-19*. Four themes supported the key theme: 1) *Threats to Nurses' Health and Well-being* with two subthemes: a) Threats to nurses' mental and emotional health, b) Threats to nurses' safety, 2) *Cut Off from the Familiar*, 3) *Systemic Chaos*, and 4) *Navigating Diminished Supports and Resources*.

The four themes depicted in Figure 4.0 represent Northern Ontario nurses' perceptions that they have shared about the overall chaos and disorder while working during the pandemic. The dashed lines represent the interconnectedness of the themes. Theme 1, *Threats to Nurses' Health and Well-being*, describes nurses' perceptions of the mental, emotional, and burnout health changes they experienced during the COVID-19 pandemic. Prevalent mental health changes encompassed fluctuations in general mental health, anxiety, and stress. The threat to nurses' safety from newfound fears of COVID-19 exposure and transmittance to family and loved ones was shared. Theme 2: *Cut Off from the Familiar* describes how nurses were

Figure 4.0

Surviving the Chaos of COVID-19



isolated from the rest of the world. The theme of *Systemic Chaos* describes nurses' perceptions of how the pandemic was mismanaged and the uncertainty created by rapidly changing workplace policies and protocols. The theme of *Navigating Diminished Supports and Resources* described the inadequate staffing nursing staffing levels and the perceived absence of support for nurses from upper management and administration.

4.3.1 Theme 1: Threats to Nurses' Health and Well-being

The theme, *Threats to Nurses' Health and Well-being*, is supported by two subthemes: a) threats to nurses' mental and emotional health and b) threats to nurses' safety.

4.3.1.1 Threats to Nurses' Mental and Emotional Health

The perceived mental health outcomes nurses described included heightened stress, anxiety, and depression, and a couple of participants mentioned perceptions of PTSD. One participant described suicidal ideation due to aggravation of PTSD: "...I became suicidal and had to take medical leave from my job as it created an exacerbation of my preciously resolved complex ptsd..." [RPN16]. One participant's comment outlined the increase in mental health problems: "...Where I live, there have been few actual covid cases, but an exponential increase in mental health and social problems..." [RN25]. Similarly, several nurses stated being absent from work and "On sick leave now for severe anxiety." [RPN06]. Many nurses stated that since the onset of the pandemic, their mental health has declined. For example:

"New mental health diagnosis just prior to the pandemic, was doing better, then the pandemic hit and all went downhill again..." [RN03].

Multiple nurses highlighted the complex effects on mental health, including anxiety and stress arising from both personal and professional work lives. One participant conveyed this: "Increased anxiety, both work and social. Often times feel unable to get things done because of overwhelming feeling of stress." [RN50].

Some nurses elucidated perceived threats to their emotional health, which included feeling burnout. A few nurses expressed perceptions of “Emotional and physical exhaustion” [RPN46]. One participant described the impacts on their “MOTIVATIONAL DRIVE, JOB SATISFACTION, INCREASED FEELINGS OF BURNOUT...” [RN34]. A few participants expressed perceptions that burnout impacted their physical health. For instance, “...My emotional burnout is at an all-time high and is causing physical symptoms as well...” [RN54].

4.3.1.2 Threats to Nurses’ Safety

Participants disclosed that threats to nurses' safety also affected their overall health and well-being during the pandemic. Several nurses described the safety issues created within the workplace. One nurse commented, “...Near constant fear for my personal safety at work due to inadequate PPE and poor surveillance by the hospital...” [RPN18]. One participant stated that personal safety concerns had been disregarded even when relayed with appropriate channels, “...Safety concerns with physical violence have been ignored on a daily despite following proper avenues or reporting...” [RPN42].

The newly emerged fear of being exposed to and transmitting COVID-19 compelled nurses to maintain distance from their family and friends. One participant conveyed that they needed to be more vigilant, “...Constantly worried about bring home illnesses to family. Have become more of a germaphobe...” [RN27]. Many nurses shared their concern with family members contracting COVID-19 and having a negative reaction, “...Increased anxiety that family will contact Covid and have a poor outcome.” [RN42]. Some nurses also expressed being fearful of their own safety about contracting the virus. For instance, “safety of myself and ability to not bring home any health issues to my spouse/family...” [RPN50].

As noted by some nurses, the newfound fears of the pandemic had caused behavioural changes, such as a decreased desire to interact in crowded areas and increased awareness of one's safety. For example,

“Do not like to go into crowded places. do not like to mingle with people after work.” [RN08].

Several nurses highlighted the sacrifices they made by avoiding activities they enjoyed before the pandemic to safeguard the safety of patients and family members. One participant recognized this: “Sacrificing the things I love doing- socializing, exercising, etc. For the pure reason of being fearful of catching Covid and having to keep my residents safe during this pandemic.” [RPN04]. One nurse pointed out how the lack of recreational activities has impacted their family members. For instance:

“Also watching my teens be deprived of their social activities and lack of activities to look forward too..” [N04].

4.3.2 Cut Off from the Familiar

The theme, *Cut Off from the Familiar*, conveys the difficulties described by nurses as they dealt with isolation brought on by the pandemic. The isolation experienced by nurses was multifaceted, affecting both the physical and social aspects of their lives. Nurses expressed frustration and grief over their inability to see loved ones, family, and friends due to travel restrictions implemented at the onset of the pandemic. One nurse stated, “Not being able to be surrounded by my extended family and visit family afar. Some of my closest relatives live in [province in Canada] and have not even had the chance to meet my almost 2-year-old daughter. This has been heartbreaking for months.” [RPN54].

The perception from one nurse living alone in a city highlighted the stark reality faced by many: “No ability to see loved ones, family. Single man, living by himself, in a city with no family” [RPN33]. Participants conveyed how isolation, compounded by travel restrictions and

limitations on recreational activities, had left them with nothing to look forward to. As one nurse described, “Being restricted from travelling or other activities that used to give me something to look forward to.” [N04]. Some nurses noted that they were unable to unwind and relax after being restricted from visiting family and loved ones. For instance, “Feeling socially isolated and not being able to meet up with family/friends to relax and recharge...” [RN07].

The incapacity to partake in extracurricular activities beyond work emerged as a prominent worry among the participants. Nurses, accustomed to socializing and participating in leisure activities, grappled with the absence of opportunities for these interactions. Numerous nurses recognized a feeling of detachment from their communities. An excerpt from one nurse encapsulates this sentiment:

“Social isolation, I’m a very social woman, like community involvement such festivals and shows, eating out with my kids has been a huge loss to us with all the restaurants closed...” [RN47].

The inability to participate in recreational activities also negatively impacted the well-being of some participants, as indicated by one participant’s excerpt: “...Being unable to engage in normal activities that would improve relaxation and self care negatively impacts individuals ability to deal with stressors that would normally not have had that much influence.” [RN39]. In addition, one participant shared feeling depleted due to the inability to partake in recreational activities on the days they were not working. For example:

“Going from shift work to isolating on days off made those days off feel emotionally draining and not as restful as they were prior to the pandemic when you could socialize and participate in regular daily activities.” [RN21].

The impact of social isolation within the work environment was characterized by reduced contact with colleagues. The need for socialization with coworkers is highlighted in one participant's comment:

“NO SOCIALIZATION WITH ANYONE INCLUDING CO WORKERS WHO ARE VERY IMPORTANT TO ME” [RN38].

4.3.3 Systemic Chaos

The theme, *Systemic Chaos*, describes nurses’ perceptions of chaos created by the pandemic mismanagement and the ever-changing workplace protocols and policies. Most participants have shared their confusion and frustrations over how administration and management handled the pandemic in general and through specific instances such as work schedules. As one nurse’s excerpt demonstrated: “... I’ve never seen such poorly managed schedules by untrained people. Former RN hospital coworkers are baffled by what we are experiencing...” [RN11].

Some nurses communicated that managers and healthcare organizations held substantial authority over them and exercised control without facing any consequences. As a case in point, one nurse stated, “The emergency orders issued by the government has given managers at my work the ability to do whatever they want with staff with zero repercussions or accountability...” [RPN42]. Many nurses described perceptions of how management often micromanaged nursing staff, “At the start of the pandemic there were more struggles with my work due to lack of management understanding on how the pandemic has impacted staff. Management micromanage staff, which was against the recommendations of best practices made by multiple experts during trainings that I attended during the start of the pandemic...” [RPN13]. Some nurses elaborated upon how management moved them to different units without the appropriate training. For example:

“...When the managers feel that we don't have a large enough patient load we get floated to another unit that you were not trained in. I find this highly unsafe. I am a postpartum/peds RPN and was sent to go work in emerge where I had no training and no idea what I was doing. When I informed my manager that this was unsafe her response was "This is a pandemic. I can send you wherever I want whenever I want" I was also floated to a medical unit a few weeks later...” [RPN02].

One participant stated that their mental health was used as an excuse to determine their overall working status. For example: "... Management used mental health as a deficit for my job. Deciding what they thought I couldn't do it shouldn't do due to new diagnoses of mental health diagnosis." [RN54]. Several participants perceived that management and administrations were not truthful regarding how they handled workplace-related matters. One participant elucidated this: "Managers no longer cared and did everything their way without trans Parma you. Lying to our faces and telling us the complete opposite in a work meeting 10 mins later..." [RN59].

Numerous participants expressed concerns regarding the rapid and inconsistent workplace policy and protocol changes. A few nurses voiced how the rapid policy adjustments contributed to the uncertainty and chaos of working during the pandemic. As one participant commented, "...Also the uncertainty of what to expect at work....what new covid-19 policy will I have to deal with or implement while I work." [RN07]. Similarly, several participants have noted how the accelerated policy changes affected them since the start of the pandemic. For instance:

"Since COVID policies have taken place life has changed for me and my coworkers drastically. Everyday we find out some new protocol that will most likely change in the next day..." [RPN02].

Nurses conveyed that "Rules keep changing on a daily." [RPN30]. The inability to keep up with the daily rapidly changing policy was compared to experiencing whiplash by one participant: "...The overly imposed change in policy and the rapidly and often unreasonable switching from one rule to any other. One could get whiplash from other inconsistencies." [RPN35]. A few nurses highlighted how the inability to keep up with the expedited workplace policies contributed to workplace safety issues. For example, "...Uncertainty. Changes in protocols create confusion and lead to error ie missed assessments of COVID risks and follow through..." [RN40].

4.3.4 Navigating Diminished Supports and Resources

The theme, Navigating Diminished Supports and Resources, explained the perceived lack of support and insufficient staffing levels within their work environments. Some participants mentioned a perceived lack of and no general support from upper management and supervisors. One nurse wrote, "...Having zero support from management..." [RPN31]. Some nurses shared being tasked with an increased workload without receiving any support. In this context, one nurse commented, "Barely any inter-team and inter-agency support to manage the increasing workload of my portfolio..." [RN36]. One participant expressed the decreased support for nurses with dependants during the pandemic,

"...single parent with school age child - childcares cannot do schooling with child and hours do not cover entire shifts therefore having to juggle multiple cares and then trying to help with school work and be rested for work. Supports are not there for staff that have children." [RN43].

A few participants eluded a perceived discrepancy in how support for healthcare staff was provided within their workplaces. According to one participant, "...the attention is very much on front-line workers, but there is a lot of damage happening to the rest of us because we don't have any support." [RN01].

A few nurses described the need for more specific support within the work environment. For example, one participant conveyed the need for adequate PPE and increased pay: "Lack of support from employer, lack of pandemic pay or PPE has caused so much stress" [RN02]. One nurse stated the perceived unfairness in pay for RPNs, in particular,

"...hospitals are constantly asking for more and more from RPNs and we still get paid terribly. I used to love nursing, but the last 5 years has been a slow decline as there just isn't any respect for nurses from management and administration; the pandemic just pushed it over the edge and showed me that hospitals truly don't care about their staff..." [RPN48].

Similarly, one nurse further expressed how the pay rate has decreased. For example: “Work hours and rate of pay decreased” [RPN20].

Most nurses consistently emphasized the frustrations and challenges caused by insufficient staffing during the pandemic. One participant described this as the inability to take days off due to the perceived staffing shortage, “lack of staff for replacement for me to take days off.” [RN04]. Nurses conveyed that the poor staffing situation had led to them taking on multiple roles within their work environment to manage workloads. This sentiment was captured by one nurse who stated, “...Expectation that we as nurses need to fill multiple hospital roles (dietary aids, housekeeping, pharmacy, etc.). This has always been present in the north, in our small hospital, but it has worsened through the pandemic...” [RN05]. One participant explained how staffing problems have been a persistent issue in the Northern Ontario region and have been particularly felt with even greater impact since the onset of the pandemic. For example:

“...Working in Northern Ontario, I find that there is usually a shortage of nurses (RN, RPNs) and this is felt even more acutely during the pandemic where nurses must be off work due to experiencing potential covid-19 symptoms which results in the other nurses having to pick up shifts to fill the void...” [RN07].

One participant’s excerpt described the overall toll of inadequate staffing on nurses, “...Staffing issues has taken a toll on me as well, with there not being enough staff to cover the shifts and always working short.” [RPN34].

4.4 Summary

In summary, Northern Ontario nurses who worked during the pandemic from March 2021 to June 2021 described *Surviving the Chaos of COVID-19* as the key theme supported by four main themes. The theme, *Threats to Nurses’ Health and Well-being*, was supported by two subthemes: a) *Threat to Nurses’ Mental and Emotional Health*, and b) *Threat to Nurses’ Safety*. The first subtheme detailed how the combination of mental, physical, and emotional dimensions

impacted the overall well-being of nurses. The second subtheme elucidated the dangers to nurses' safety resulting from working conditions, including insufficient PPE. Nurses expressed fear and vulnerability stemming from the risk of exposure to the virus. Nurses perceived the isolation they experienced as being '*Cut off from the Familiar,*' characterized by restrictions on travelling to visit friends and family and limited opportunities to engage in typical recreational activities outside of their work commitments.

The theme of Systemic Chaos described nurses' perception of how upper management and supervisors handled the pandemic. In addition, the rapid changes in policies and protocols left nurses feeling uncertain and struggling to adapt to the new variations. The final theme, *Navigating Diminished Resources and Support*, highlighted nurses' perceptions of the lack of resources and support networks and insufficient staffing levels during the pandemic.

CHAPTER 5: DISCUSSION

The main objective of this qualitative content analysis research was to answer the following research question: What are the perceived mental health impacts of COVID-19 on Northern Ontario registered nurses and registered practical nurses working during the pandemic? The findings elucidated Surviving the Chaos of COVID-19 as the key theme supported by four themes. Theme 1 was Threat to Nurses' Health and Well-being, which had two sub-themes: a) Threats to Nurses' Mental and Emotional Health, and b) Threats to Nurses' Safety. Theme 2 was Cut Off from the Familiar, Theme 3 was Systemic Chaos, and Theme 4 was Navigating Diminished Resources and Supports. The Nursing Worklife Model was used to guide the interpretations of the findings concerning the mental health of nurses within the context of certain framework domains. The model explains the relationship between the five major domains of a nurse's work environment: nursing leadership, collegial relationships, policy involvement, staffing adequacy, nursing model of care, and their influence on specific outcome variables. This model has been adapted and utilized in previous research studies (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022).

5.1 Key Theme: Surviving the Chaos of COVID-19

The key theme revealed that nurses were surviving the chaos of COVID-19. The nurses revealed their perceptions of threats to their mental health and well-being. Nurses shared feelings of threats to their general health and decreased mental health status. The findings of decreased general mental health status were supported by the results of several researchers (Bourgeault et al., 2021; Eche et al., 2022; Nowrouzi-Kia et al., 2022). Additionally, the key theme encapsulated nurses' newfound sense of isolation attributed to the pandemic. Nurses had expressed their frustration regarding the perceived mismanagement of the pandemic. The

constantly shifting workplace policies and protocols left nurses unsure which guidelines to follow on a daily basis. Nurses needed coherent communication, more support and resources, such as adequate staffing to navigate the systemic chaos from upper management and supervisors. Nurses require quality practice environments to uphold ethical responsibilities and provide the best patient care possible (CNA, 2017; CNA & CFNU, 2014; NSCN, 2017). Moral distress is often caused by stressors within their work environment that prevent nurses from providing quality patient care (CACCN, 2018; CNA & CFNU, 2014; NSCN, 2017; PACPMH, 2020; RNAO, 2017a). The culmination of these factors added to the perception of nurses surviving the chaos of COVID-19.

5.2 Theme 1: Threat to Nurses' Health and Well-being

5.2.1 Subtheme a): Threats to Nurses' Mental and Emotional Health

The study results revealed the challenges faced by nurses, particularly in terms of the impact on their mental and emotional well-being. Several adverse mental health outcomes were described by nurses, including anxiety, stress, depression, PTSD, and emotional health outcomes. Research conducted prior to COVID-19 found threats to nurses' mental health even before the pandemic, such as increased levels of stress, anxiety and depression (MNU, 2015).

Research conducted across North America showed similar results, with adverse mental health outcomes like increased depression levels observed among nurses working during the COVID-19 pandemic (Ali et al., 2020; Arnetz et al., 2020a; Arnetz et al., 2020b; Côté et al., 2022; Crowe et al., 2020; Havaei et al., 2021b; Kim et al., 2020; Sagherian et al., 2020; Tokac & Razon, 2021). International research conducted in Portugal also showed similar results, with heightened levels of depression among nurses during the pandemic. The study also found elevated levels of anxiety and stress among nurses (Sampaio et al., 2020).

The findings specified threats to the emotional health of nurses, such as the increased levels of burnout. Results found in domestic (Guttormson et al., 2022) and international research studies (Khattak et al., 2021; Rivas et al., 2021), indicated similar results of elevated levels of adverse emotional health outcomes and burnout among nurses working during the pandemic.

5.2.2 Subtheme b): Threats to Nurses' Safety

The concern over inadequate PPE and COVID-19 exposure posed risks to the safety of nurses. Nurses described how the fear of the pandemic had compelled nurses to distance themselves from their families and friends. This newfound fear impacted their personal lives and behaviours, leading them to avoid crowded areas and limit their participation in typical daily activities. Similar findings of fear of the COVID-19 pandemic were explored in a cross-sectional study conducted in Quebec among 1,708 nurses (Gélinas et al., 2021). The results indicated increased fear among nurses who felt they were not appropriately prepared to treat patients during the pandemic. Nurses who cared for COVID-19 patients who passed away revealed elevated levels of pandemic fear (Gélinas et al., 2021). Interestingly, domestically conducted research indicated that nurses felt they were provided with adequate levels of hospital resources such as PPE (Lou et al., 2021). However, other domestically conducted studies by various researchers indicated a heightened concern for nurses' workplace safety during the pandemic (Ali et al., 2020; Havaei et al., 2021b; Shaffer et al., 2020).

Similarly, international research supported the findings, revealing that insufficient PPE was associated with increased stress, anxiety, and overall fears for nurses' safety in the workplace (Stayt et al., 2023). Congruently, the fear of COVID-19 exposure and transmission was reinforced by another international study, which found that increased work hours for nurses in healthcare settings were linked to concerns about transmitting the virus to family members and

friends (Labrague & de los Santos, 2021). The findings indicated the threats to nurses safety due to the newfound fear associated with the pandemic and the inadequacy of PPE, aligning with results found in studies by several researchers (Havaei et al., 2021b; Shaffer et al., 2020; Stayt et al., 2023; Labrague & de los Santos, 2021).

5.3 Theme 2: Cut Off from the Familiar

The theme, Cut Off from the Familiar, described the difficulties faced by nurses as they dealt with the repercussions of isolation stemming from the pandemic. The imposed travel restrictions, which prevented them from connecting with loved ones, family, and friends, led to frustration and sadness among nurses. Moreover, within their work environments, nurses experienced reduced interactions with their colleagues, who had traditionally been a source of support. This situation further intensified the feelings of isolation perceived by nurses. The findings were congruent with a case study conducted in the United States among healthcare workers, including nurses in long-term care settings during the pandemic, which indicated that limited social interactions with coworkers contributed to their sense of social isolation (Freidus et al., 2022).

The importance of having strong collegial relationships is critical since it is the foundation for making meaningful connections and allowing nurses to deliver optimal patient care (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022). The findings may align with the collegial relationships domain within the Nursing Worklife model, which underscores the significance of collegial relationships in shaping nurses' engagement in policy development and the overarching nursing model of care (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022).

Similar results were observed in international studies, which described how nurses felt disconnected from friends and family due to their contact with COVID-19 patients (Wood et al., 2023; Zamanzadeh et al., 2021). However, nurses also emphasized the positive impact of peer social support, highlighting potential mitigating factors that can help nurses cope with the isolation they were experiencing (Wood et al., 2023; Zamanzadeh et al., 2021). The findings illustrated the toll that isolation took on nurses during the pandemic, aligning with results found in the existing literature (Freidus et al., 2022; Wood et al., 2023; Zamanzadeh et al., 2021).

5.4 Theme 3: Systemic Chaos

The findings have outlined the uncertainty created by the ever-changing workplace protocols and policies, which had made it difficult for nurses to adapt. The challenges of constantly changing policies and protocols without sufficient time for nurses to familiarize themselves with the new guidelines were by several researchers (Ali et al., 2020; Crowe et al., 2020; Lasater et al., 2020; LoGiudice & Bartos, 2021; Schroeder et al., 2020).

The importance of nurses' involvement in policy development is underscored as a crucial factor in fostering a positive work environment (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022). The policy involvement domain in the Nursing Worklife model supports nurses' being active participants in policy creation, which can have an overall beneficial outcome variable. Recognizing and facilitating nurses' participation in shaping policies can significantly enhance their overall work experience and the quality of patient care delivery (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022).

The perceived mismanagement of the pandemic by upper management and administration was noted. Nurses expressed frustration and confusion over ambiguous and complex work schedules. The findings of pandemic mismanagement within nurses' work

environments were supported by the results of researchers (Faramawy & Kader, 2021; Fernández-Castillo et al., 2021).

These findings are similar to a qualitative study conducted in the United States among 43 nurses (Kelley et al., 2022). Participants noted their struggle to keep up with the continuous changes and the increased workloads resulting from shifting workplace policies without adequate adjustment time. In some cases, nurses expressed frustration over the lack of communication regarding changes in the work environment, including policy updates (Kelley et al., 2022). Congruently, a qualitative research study conducted in Israel among 231 nurses highlighted how changing workplace protocols created impediments to nurses providing care during the pandemic (Sperling, 2021). The Nursing Worklife model elucidates the importance of effective nursing leadership in several key areas (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022). Effective nursing leadership plays a pivotal role in nurses being actively engaged in the implementation of policies that uphold patient care standards and ensure the well-being of healthcare professionals (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022).

The constantly changing and uncertain circumstances brought about by the pandemic, including rapidly evolving workplace policies and protocols, may have exacerbated moral distress among nurses. Several research studies have shown increased moral distress among nurses during the pandemic, with adverse effects on patient care (Donkers et al., 2021; Ness et al., 2021). The threats to nurses' personal and professional lives could have compounded the impact of moral distress. The exacerbation and increased moral injury have also been well-noted among nurses during the pandemic (Ritchie et al., 2023; Zahiriharsini et al., 2022). Increased

organizational support perceived by healthcare workers, including nurses, has been linked to reduced moral injury events (D'Alessandro-Lowe et al., 2023).

5.5 Theme 4: Navigating Diminished Supports and Resources

The findings elucidated the perceived lack of support received by nurses from upper management and administration during the pandemic. Historically, researchers have found a lack of support for nurses within healthcare institutions (Hall & Visekruna., 2020; Lavoie-Tremblay et al., 2021). Several research studies reported similar results with inadequate access to psychological support, lack of resources, and support by management and decision-makers (Ali et al., 2020; Arnetz et al., 2020a; Arnetz et al., 2020b; Cho et al., 2021; Havaei et al., 2021a; Iheduru-Anderson, 2020; Lasater et al., 2020; LoGiudice & Bartos, 2021; Shaffer et al., 2021; White, 2021). The perceived lack of organizational support highlighted the necessity of having adequate nursing leadership within work environments. The significance of effective nursing leadership within professional environments is emphasized within the framework of the Nursing Worklife model (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022). This model underscores the role of effective nursing leadership in facilitating positive interactions between physicians and nurses, actively engaging in the enactment of policies, and ensuring optimal staffing levels (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022).

The findings further outlined the difficulties faced by nurses due to the deficit of resources, such as inadequate staffing. Insufficient staffing frequently necessitated nurses to undertake tasks beyond their nursing duties, including cleaning and housekeeping responsibilities. This staff shortage resulted in increased workloads for nurses. The difficulties of nursing staff shortages had been a pre-existing issue within the nursing workforce before the

pandemic (Halter et al., 2017). Similar findings were identified in a cross-sectional survey study conducted in New Jersey, United States, involving 3,027 RNs during the pandemic (Pogorzelska-Maziarz et al., 2023). Nurses expressed frustration with being required to assume the roles of other hospital personnel, such as performing housekeeping tasks (Pogorzelska-Maziarz et al., 2023).

A qualitative interview study conducted in the Republic of Vanuatu among 25 RNs during the pandemic further revealed the impacts of adequate staffing levels (Tamata et al., 2021). The interviews revealed increased workload levels for nurses due to inadequate hospital staffing. Nurses also reported increased working hours with limited opportunities for sick leave and time off. Participants also noted a perceived lack of support from nursing leaders (Tamata et al., 2021). As identified by the Nursing Worklife model, in the nursing environment, maintaining proper staffing levels is crucial as staffing adequacy can have a considerable impact on nurses' perceptions of patient care and their overall mental health (Bella et al., 2022; Laschinger et al., 2016b; Lewis & Cunningham, 2016; Pio, 2022). Overall, the findings outlined the toll that perceived lack of support and inadequate staffing took on nurses during the pandemic, aligning with results found in the literature.

5.6 Summary

Overall, the results presented in this thesis are similar to the relationships described within specific domains of the Nursing Worklife model, such as nursing leadership, staffing adequacy, policy involvement and collegial relationships. It should be noted that the results differed with one domain of the model: the nursing model of care. Healthcare institutions and organizations applying a nursing model of care would mean an appropriate nursing staffing level based on the acuity of patients (Leiter & Laschinger, 2006; Manojlovich & Laschinger, 2007).

Healthcare facilities can better match staffing levels to patient acuity by following a nursing model of care, thereby promoting safer environments, improving patient satisfaction, and potentially reducing adverse events (Leiter & Laschinger, 2006; Manojlovich & Laschinger, 2007). The interpretation of the study results highlights the importance of addressing these factors to improve the work-life of nurses, especially during future challenging times like a pandemic.

When looking at the pre-existing domains of the Nursing Worklife model, it is based on essential domains of a nurse's work environment prior to the COVID-19 pandemic. Therefore, the model can be adapted to include new domains impacted by the pandemic and examine how it affects the outcome variable. In the study by Havaei et al. (2021b) used an adapted the Nursing Worklife model by including three of its original nursing domains (staffing and resource adequacy, workplace relations, and leadership/organizational support) and adding two new domains (workplace safety and organizational preparedness) in order to observe the overall safety within the workplace and management of the pandemic (Havaei et al., 2021b). Therefore, the Nursing Worklife Model could be further adapted by including workplace safety and organizational preparedness domains to look at nurses' mental health perceptions. Given the impacts of the pandemic on the personal and professional lives of nurses, it would be interesting to look at individual and family contributors as well (Bourgeault et al., 2021).

5.7 COVID-19 Implications on Nurses

The COVID-19 pandemic has significantly impacted the nursing workforce in Canada, presenting a range of implications that have challenged healthcare systems nationwide. Firstly, the pandemic exacerbated issues such as nursing shortages and mental health outcomes (Riedel et al., 2021). As patient volumes increased in healthcare facilities, nurses were forced to work

longer hours and with insufficient staffing, increasing stress and pressure. Nurses were given increased workload and demand, exacerbating the impacts of inadequate resources such as PPE and staff. With the increased job strain placed on nurses during the pandemic, patient care was also negatively impacted (Riedel et al., 2021).

The aggravating effects of nursing shortages can lead to similar outcomes in future pandemic-like scenarios (Mirzaei et al., 2021). Nurses were more intent to leave the workforce due to factors such as the inability to maintain proper physical and mental health during the pandemic (Mirzaei et al., 2021). Nursing retention is vital for healthcare organizations as the perceived lack of support from healthcare institutions has led to greater intent to leave the workforce (Kantorski et al., 2022). The impacts of being disconnected from family and friends during the COVID-19 pandemic were linked to the increased intention of nurses to leave during the COVID-19 pandemic (Cornish et al., 2021). The cumulation of these factors may have led to decreased retention of nurses during and after the pandemic (Falatah, 2021).

When considering the implications on nurses' recruitment and retention, initiatives such as the Life Support Mental Health tool developed through partnerships with the Canadian Nursing Association deserve recognition and enhancement (CNA, 2023). The Life Support Mental Health tool was designed to assist nurses in detecting mental health concerns before they progress. This initiative is accessible through web access. It enables self-assessment of various psychological measures for prevalent mental health outcomes like anxiety, depression, stress, burnout, trauma, and PTSD. Step one of the toolkit procedures provides a confidential and complete evidence-based assessment of an individual's mental and emotional health status at a given period. Following that, individuals will be allowed to have a clinical review with a

regulated mental health professional, such as a social worker, psychologist or psychotherapist, to provide the necessary support for nurses (CNA, 2023).

As an innovative effort to retain nurses and manage the staffing inadequacy crisis, the Government of Canada has developed the Nursing Retention Toolkit, which has been shared nationally (Health Canada, 2024). The toolkit was crafted in collaboration with nurses and nursing leaders and is centred around eight core themes, which include 1) inspired leadership, 2) flexible and balance ways of working, 3) organizational mental health and wellness supports, 4) professional development and mentorship, 5) reduced administrative burden, 6) strong management and communication, 7) clinical governance and infrastructure, and 8) safe staffing practice (Health Canada, 2024).

Each theme is accompanied by initiatives that nursing employers can adopt to foster retention (Health Canada, 2024). For example, when looking at the theme of organizational mental health and wellness support, initiatives included having zero tolerance for violence, bullying and racism. A secondary initiative was ensuring best practices for vacation and time off. Drawing upon evidence-based methodologies and insights from frontline nurses, including nursing students who have experienced the challenges of the pandemic firsthand, the toolkit offers a comprehensive platform for collaboration between employers and health authorities to establish standardized retention programs across healthcare institutions nationwide (Health Canada, 2024). Moving forward, it is imperative that policymakers, healthcare organizations, and stakeholders collaborate to implement sustainable solutions to support and strengthen the nursing workforce in Canada.

5.8 Limitations

As with any research study, certain challenges and limitations were identified. Qualitative content analysis involves the interpretation of data, which can be influenced by the researcher's subjectivity and bias (Berger, 2015; Dodgson, 2019). Reflexivity was actively employed to minimize personal biases during the data analysis process (Berger, 2015; Dodgson, 2019). A suggested limitation of qualitative content analysis is the lack of standardized procedures and guidelines, leading to variations in how researchers approach the analysis (Kyngäs, 2020, pp. 4-11). To minimize this limitation, I followed a uniform methodology used in collecting, sorting and analyzing data (Kyngäs, 2020, pp. 13-21). First, the participant comments were read in their entirety. Next, I went through the entire data set and colour-highlighted data that had meaning related to my research question to produce open codes. A codebook was created containing all open codes and their definitions. Similarities and differences between the open codes were determined to assess which open codes could be grouped to create sub-themes and main themes (Kyngäs, 2020, pp. 13-21). It is crucial to recognize that while these limitations are acknowledged, they do not diminish the significance of the invaluable insights garnered through this study (Smith & Sparkes, 2020). Instead, they serve as a foundation for future research endeavours, encouraging further exploration of nurses' perceptions during the pandemic.

5.9 Recommendations for Health Service Policy Decision-Makers

Collaboration among the government, managers, healthcare policy decision-makers, healthcare administrations, RNs, and RPNs in Northern Ontario is vital for improving working conditions in preparation for future healthcare crises. This collective effort holds the potential to positively influence nurses by improving workplace conditions and addressing health factors, including mental health and overall well-being.

Recognizing the toll on nurses' mental health and well-being is necessary for implementing comprehensive mental health support services (Côté et al., 2022; Muller et al., 2020). This could encompass access to therapy, counselling, and tools for managing stress, anxiety, and burnout (Côté et al., 2022). Establishing specialized mental health programs explicitly tailored for nurses can address the adverse effects of the pandemic on their well-being (Muller et al., 2020). To reinforce positive mental health among nurses and alleviate the fear created by the pandemic, healthcare organizations need to implement psychological and mental health supports such as counselling and social groups (Lavoie-Tremblay et al., 2022). Previous research has urged nursing leaders and upper management to advocate for increased employee funding within operational budgets to facilitate such resources (Kester & Wei, 2018). Services like check-ins with a hospital-based psychiatrist have been shown to positively impact nurses' mental health (Crowe et al., 2020).

The safety of nurses has also been questioned during the pandemic (Gélinas et al., 2021). The development of safety measures and support interventions within nurses' professional and personal lives at home must be prioritized. Prioritizing the development of safety measures and support interventions within both professional and personal aspects of nurses' lives is crucial (Gélinas et al., 2021). Initiatives that are focused on improving infection control and patient safety should be considered by healthcare organizations (Bernard et al., 2021). This approach can contribute to fostering a healthier and more resilient healthcare workforce, ultimately enhancing the quality of patient care and the sustainability of the healthcare system.

To enhance workplace safety for nurses going forward, specific measures and standards must be upheld (Berry et al., 2020; Lake et al., 2020). Conducting safety orientations and training routinely can enhance nurses' preparedness and adaptability during similar pandemic

scenarios. When issues are identified, retraining should be offered to nurses in a swift manner. Further initiatives, such as safety meetings and employee-led safety committees, have demonstrated benefits in upholding workplace safety in healthcare settings (Berry et al., 2020; Lake et al., 2020).

To alleviate the sense of isolation among nurses, it is imperative to implement strategies that promote community and support networks. This can be achieved through initiatives like encouraging peer support groups, mentorship programs, and organizing online social activities (Labrague & De Los Santos, 2020). A study in the Philippines demonstrated the benefits of social support groups, indicating that increased social support decreased nurses' anxiety and stress levels (Labrague & De Los Santos, 2020). Similarly, a meta-analysis study concluded that social support programs could serve as a pathway to mitigate the impacts of social isolation among nurses moving forward (Waqas et al., 2021). The implementation of such programs has yielded beneficial effects in reducing mental health outcomes stemming from isolation, such as anxiety and stress. Healthcare workers, including nurses, have described improved workplace relationships with coworkers and an increased ability to openly share their feelings to alleviate the burden they carry. Overall, the evidence suggests the potential benefits of managing the isolation experienced by healthcare workers like nurses, which can be implemented in the future (Waqas et al., 2021).

Fostering a supportive leadership climate within healthcare organizations is essential, with managers and supervisors actively engaging with nurses, addressing their concerns, and providing appropriate support (Wei et al., 2019). Leadership development training for managers equips them with the necessary skills to effectively support their teams. Promoting a positive outlook and continuous gratitude serve as influential leadership strategies. Recognizing nurses'

strengths and weaknesses helps nurse managers create a cohesive work process (Wei et al., 2019). From an organizational perspective, open communication between management and nurses should be fostered to mitigate individual burdens (PACPMH, 2020). In situations involving moral dilemmas, managers and team leaders can acknowledge these situations and take responsibility for the actions performed, removing the burden from individual nurses (PACPMH, 2020).

As highlighted in a report by the CFNU, continuous planning for funding the educational development of the Canadian nursing workforce is essential to ensure nurses are adequately qualified for the evolving healthcare requirements of all patients in Canada (Hall & Visekruna, 2020). Implementing these recommendations can potentially address challenges faced by nurses during the COVID-19 pandemic, promoting their well-being and contributing to the resilience and sustainability of the nursing profession in the face of future healthcare crises.

5.10 Future Research

The pandemic has exacerbated the pre-existing issue of adverse mental health outcomes within the nursing workforce. For this reason, future research should focus on examining individual and organizational factors to effectively manage and mitigate the impacts on nurses' mental health and overall well-being. In particular, there is a need for continued investigation into the impact of hospital resources on assisting nurses in coping with mental health outcomes, as emphasized by Lou et al. (2021).

To comprehensively address issues in nurses' work environments, continuous qualitative and quantitative research involving various nursing organizations in the province of Ontario is essential. This research should explore factors such as nursing leadership, workplace protocols, and resource adequacy. Additionally, future investigations should explore the workplace

dynamics contributing to increased sickness absences among healthcare workers, aiming to develop preventive measures for future pandemic-like scenarios, as noted by Gohar et al. (2020a). Similarly, identifying stress sources and support from family, work, and the organization that influence nurses' mental health and leaves of absence is imperative (Bourgeault et al., 2021).

The safety of nurses, which was compromised during the chaotic period of the pandemic, necessitates immediate attention; it is unacceptable for this situation to continue. The workplace safety protocols, procedures and safety PPE must be addressed now and improved for future global health epidemics and pandemics. Future research on the potentially different links between each type of understaffing and other safety-related outcomes, such as supervisor reports of safety performance and recorded accidents and injuries, is also needed (Andel et al., 2022). The implementation and efficacy of infection control programs can also be explored in nursing work environments, as previous research as indicated the benefits of such programs (Bernard et al., 2021). The factors contributing to the turnover intentions among nurses would be valuable for nursing managers and healthcare organizations to explore to better support and retain nurses during future high-straining health scenarios (Lavoie-Tremblay et al., 2021). Due to the impacts of the pandemic on both the professional and personal lives of nurses, future research should look at how nurses can be supported outside of their work environments to help nurses manage the threats impacting them during future similar healthcare scenarios.

5.11 Conclusion

This study looked at nurses' perceptions of the impact of COVID-19 on their mental health of while working in Northern Ontario during the COVID-19 pandemic. The threats to nurses' health and well-being during COVID-19 were multifaceted, leading them to the

perception of surviving the overall chaos of the pandemic. Nurses provided insights into the continued challenges with regard to their mental health and well-being, a newfound sense of isolation, the perceived systemic mismanagement of the pandemic and the lack of support and resources.

The need for enhanced support systems and more effective management strategies has become apparent, highlighting the critical importance of addressing these issues to ensure the well-being and safety of nurses during future crises. Nurses require work environments that allow them to thrive through appropriate support and resources. The insights gained from this research can serve as a basis for policymakers and decision-makers in Northern Ontario to improve the quality of nurses' practice environments as opposed to surviving the chaotic situation of the COVID-19 pandemic. Special attention needs to be placed on pre-existing poor quality practice environments threats to nurses' mental health and well-being.

References

- Ali, H., Cole, A., Ahmed, A., Hamasha, S., & Panos, G. (2020). Major Stressors and Coping Strategies of Frontline Nursing Staff During the Outbreak of Coronavirus Disease 2020 (COVID-19) in Alabama. *Journal of Multidisciplinary Healthcare, 13*, 2057–2068. <https://doi.org/10.2147/JMDH.S285933>
- Advisory Committee on Health Human Resources. (2000). *The Nursing Strategy for Canada*. https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/hcs-sss/alt_formats/hpb-dgps/pdf/pubs/2000-nurs-infir-strateg/2000-nurs-infir-strateg-eng.pdf
- Almeida, F. (2018). STRATEGIES TO PERFORM A MIXED METHODS STUDY. *European Journal of Education Studies, 5*(1). <https://doi.org/10.5281/zenodo.1406214>
- Andel, S. A., Tedone, A. M., Shen, W., & Arvan, M. L. (2022). Safety implications of different forms of understaffing among nurses during the COVID-19 pandemic. *Journal of Advanced Nursing, 78*(1), 121–130. <https://doi.org/10.1111/jan.14952>
- Arnetz, J. E., Goetz, C. M., Arnetz, B. B., & Arble, E. (2020a). Nurse Reports of Stressful Situations during the COVID-19 Pandemic: Qualitative Analysis of Survey Responses. *International Journal of Environmental Research and Public Health, 17*(21), Article 21. <https://doi.org/10.3390/ijerph17218126>
- Arnetz, J. E., Goetz, C. M., Sudan, S., Arble, E., Janisse, J., & Arnetz, B. B. (2020b). Personal Protective Equipment and Mental Health Symptoms Among Nurses During the COVID-19 Pandemic. *Journal of Occupational and Environmental Medicine, 62*(11), 892. <https://doi.org/10.1097/JOM.0000000000001999>

- Artino, A. R., Durning, S. J., & Sklar, D. P. (2018). Guidelines for Reporting Survey-Based Research Submitted to Academic Medicine. *Academic Medicine*, *93*(3), 337–340. <https://doi.org/10.1097/acm.0000000000002094>
- Badahdah, A. M., Khamis, F., & Mahyijari, N. A. (2020). The psychological well-being of physicians during COVID-19 outbreak in Oman. *Psychiatry Research*, *289*, 113053. <https://doi.org/10.1016/j.psychres.2020.113053>
- Bailey, P. H., & Tilley, S. (2002). Storytelling and the interpretation of meaning in qualitative research. *Journal of Advanced Nursing*, *38*(6), 574–583. <https://doi.org/10.1046/j.1365-2648.2000.02224.x>
- Ballard, N., Boyle, D. K., & Bott, M. J. (2016). Evaluation of Elements of the Nursing Worklife Model Using Unit-Level Data. *Western Journal of Nursing Research*, *38*(2), 183–199. <https://doi.org/10.1177/0193945915581628>
- Bardhan, R., Heaton, K., Davis, M., Chen, P., Dickinson, D. A., & Lungu, C. T. (2019). A Cross Sectional Study Evaluating Psychosocial Job Stress and Health Risk in Emergency Department Nurses. *International Journal of Environmental Research and Public Health*, *16*(18), Article 18. <https://doi.org/10.3390/ijerph16183243>
- Bella, V., Fiorini, J., Gioiello, G., Zaghini, F., & Sili, A. (2022). Towards a new conceptual model for nurses' organizational well-being: An integrative review. *Journal of Nursing Management*, *30*(7), 2833–2844. <https://doi.org/10.1111/jonm.13750>
- Bernard, L., Biron, A., Briand, A., Taha, S., & Lavoie-Tremblay, M. (2021). Evaluation of a quality improvement program to prevent healthcare acquired infections in an acute care hospital. *Journal of Nursing Education and Practice*, *11*(5), Article 5. <https://doi.org/10.5430/jnep.v11n5p24>

- Berger, R. (2015). Now I see it, now I don't: Researcher's position and reflexivity in qualitative research. *Qualitative Research, 15*(2), 219–234.
<https://doi.org/10.1177/1468794112468475>
- Bergman, L., Falk, A.-C., Wolf, A., & Larsson, I.-M. (2021). Registered nurses' experiences of working in the intensive care unit during the COVID-19 pandemic. *Nursing in Critical Care, 26*(6), 467–475. <https://doi.org/10.1111/nicc.12649>
- Berry, J. C., Davis, J. T., Bartman, T., Hafer, C. C., Lieb, L. M., Khan, N., & Brill, R. J. (2020). Improved Safety Culture and Teamwork Climate Are Associated With Decreases in Patient Harm and Hospital Mortality Across a Hospital System. *Journal of Patient Safety, 16*(2), 130. <https://doi.org/10.1097/PTS.0000000000000251>
- Boamah, S. A., Callen, M., & Cruz, E. (2021). Nursing faculty shortage in Canada: A scoping review of contributing factors. *Nursing Outlook, 69*(4), 574–588.
<https://doi.org/10.1016/j.outlook.2021.01.018>
- Boamah, S. A., Spence Laschinger, H. K., Wong, C., & Clarke, S. (2018). Effect of transformational leadership on job satisfaction and patient safety outcomes. *Nursing Outlook, 66*(2), 180–189. <https://doi.org/10.1016/j.outlook.2017.10.004>
- Bourgeault, I., Power, N., Bujaki, M., Brondani, M., Simkin, S., Thiessen, K., Price, S., & Arnold, K. (2021). *Healthy Professional Worker Partnership: Preliminary Comparative Findings*. <https://www.healthyprofwork.com/comparative-findings>
- Burr, H., Berthelsen, H., Moncada, S., Nübling, M., Dupret, E., & Demiral, Y. (2019). *The Third Version of the Copenhagen Psychosocial Questionnaire*. Safety and Health at Work; OSHRI. <https://www.copsoq-network.org/assets/Uploads/The-Third-Version-of-the-Copenhagen-Psychosocial-Questionnaire.pdf>

- Cai, H., Tu, B., Ma, J., Chen, L., Fu, L., Jiang, Y., & Zhuang, Q. (2020). Psychological impacts and coping strategies of front-line medical staff during COVID-19 outbreak in Hunan, China. *Medical Science Monitor*, 26. <https://doi.org/10.12659/msm.924171>
- Canadian Association of Critical Care Nurses. (2018). *Healthy Work Environments*. <https://caccn.ca/wp-content/uploads/2019/10/PS032018PSHWEEnviron.pdf>
- Canadian Institute for Health Information. (2021). *COVID-19's impact on hospital services* | *CIHI*. [www.cihi.ca. https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/hospital-services](https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/hospital-services)
- Canadian Institute for Health Information. (2020). *Overview: COVID-19's impact on health care systems* | *CIHI*. [www.cihi.ca. https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/the-big-picture](https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/the-big-picture)
- Canadian Mental Health Association. (2016a). *Anxiety Disorders*. CMHA National. <https://cmha.ca/brochure/anxiety-disorders/>
- Canadian Mental Health Association. (2015). *Depression and Bipolar Disorder*. CMHA National. <https://cmha.ca/brochure/depression-and-bipolar-disorder/>
- Canadian Mental Health Association. (2016b). *Post-Traumatic Stress Disorder (PTSD)*. CMHA National. <https://cmha.ca/brochure/post-traumatic-stress-disorder-ptsd/>
- Canadian Mental Health Association. (2020, January 13). *Mental health: What is it, really?* CMHA National. <https://cmha.ca/news/mental-health-what-is-it-really/>
- Canadian Mental Health Association. (2016c). *Stress*. CMHA National. <https://cmha.ca/brochure/stress/>
- Canadian Mental Health Association. (2023). *Take 15 minutes just for you*. <https://ontario.cmha.ca/take-15-minutes-just-for-you/>

- Canadian Nurses Association & Canadian Federation of Nurses Unions. (2014). *Joint Position Statement Practice Environments: Maximizing Outcomes for Clients, Nurses and Organizations*. https://nursesunions.ca/wp-content/uploads/2019/10/practice-environments-maximizing-outcomes-for-clients-nurses-and-organizations_joint-position-statement.pdf
- Canadian Nurses Association. (2017). *Code of Ethics for Registered Nurses (2017)*. <https://www.cna-aiic.ca/en/nursing/regulated-nursing-in-canada/nursing-ethics>
- Canadian Nurses Association. (2023, January 23). *Life Support Mental Health and CNA announce mental health tool to support Canada's nursing workforce*. <https://www.cna-aiic.ca/en/blogs/cn-content/2023/01/23/life-support-mental-health-and-cna-announce-mental>
- Carcary, M. (2009). The Research Audit Trial—Enhancing Trustworthiness in Qualitative Inquiry. *Electronic Journal of Business Research Methods*, 7(1), Article 1. <https://academic-publishing.org/index.php/ejbrm/article/view/1239>
- Carley, A., Melrose, S., Rempel, G., Diehl-Jones, W., & Schwarz, B. A. (2021). Professional Development Needs of Non-Radiology Nurses: An Exploration of Nurses' Experiences Caring for Interventional Radiology Patients. *Journal of Radiology Nursing*, 40(2), 146–151. <https://doi.org/10.1016/j.jradnu.2020.12.011>
- Choobineh, A., Jalilian, H., Shouroki, F., Azmoon, H., & Rostamabadi, A. (2019). Relationship between job stress and fatigue based on job demand-control-support model in hospital nurses. *International Journal of Preventive Medicine*, 10(1), 56. https://doi.org/10.4103/ijpvm.ijpvm_178_17

- Cho, H., Sagherian, K., & Steege, L. M. (2021). Hospital Nursing Staff Perceptions of Resources Provided by Their Organizations During the COVID-19 Pandemic. *Workplace Health & Safety*, 69(4), 174–181. <https://doi.org/10.1177/2165079920987543>
- Cohen, J., & van der Meulen Rodgers, Y. (2020). Contributing factors to personal protective equipment shortages during the COVID-19 pandemic. *Preventive Medicine*, 141(141), 106263. <https://doi.org/10.1016/j.ypmed.2020.106263>
- Colin-Chevalier, R., Pereira, B., Benson, A. C., Dewavrin, S., Cornet, T., & Dutheil, F. (2022). The Protective Role of Job Control/Autonomy on Mental Strain of Managers: A Cross-Sectional Study among Wittyfit’s Users. *International Journal of Environmental Research and Public Health*, 19(4). <https://doi.org/10.3390/ijerph19042153>
- College of Nurses of Ontario. (2022). *Registration Statistics Report 2022*. https://www.cno.org/globalassets/2-howweprotectthepublic/statistical-reports/registration-statistics-report-2022.html#Overall_Renewals
- College of Nurses of Ontario. (2018). *RN and RPN Practice: The Client, the Nurse and the Environment*. <https://www.cno.org/globalassets/docs/prac/41062.pdf>
- College of Registered Nurses of Newfoundland & Labrador. (2013). *Quality Professional Practice Environment Standards*. <https://crnnl.ca/site/uploads/2021/09/quality-professional-practice-environment.pdf>
- Cornish, S., Klim, S., & Kelly, A.-M. (2021). Is COVID-19 the straw that broke the back of the emergency nursing workforce? *Emergency Medicine Australasia*, 33(6), 1095–1099. <https://doi.org/10.1111/1742-6723.13843>
- Côté, J., Aita, M., Chouinard, M.-C., Houle, J., Lavoie-Tremblay, M., Lessard, L., Rouleau, G., & Gélinas, C. (2022). Psychological distress, depression symptoms and fatigue among

Quebec nursing staff during the COVID-19 pandemic: A cross-sectional study. *Nursing Open*. <https://doi.org/10.1002/nop2.1199>

Critical Skills Appraisal Programme. (2021). *CASP Checklist: 10 questions to help you make sense of a Qualitative research*.

<https://www.unisa.edu.au/contentassets/72bf75606a2b4abcaf7f17404af374ad/7a-casp-qualitative-cat.pdf>

Crowe, S., Howard, A. F., Vanderspank-Wright, B., Gillis, P., McLeod, F., Penner, C., & Haljan, G. (2020). The effect of COVID-19 pandemic on the mental health of Canadian critical care nurses providing patient care during the early phase pandemic: A mixed method study. *Intensive and Critical Care Nursing*, *63*, 102999.

<https://doi.org/10.1016/j.iccn.2020.102999>

D'Alessandro-Lowe, A. M., Karram, M., Ritchie, K., Brown, A., Millman, H., Sullo, E., Xue, Y., Pichtikova, M., Schielke, H., Malain, A., O'Connor, C., Lanius, R., McCabe, R. E., & McKinnon, M. C. (2023). Coping, Supports and Moral Injury: Spiritual Well-Being and Organizational Support Are Associated with Reduced Moral Injury in Canadian Healthcare Providers during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, *20*(19), Article 19.

<https://doi.org/10.3390/ijerph20196812>

DeCuir-Gunby, J., Marshall, P., & McCulloch, A. (2011). Developing and Using a Codebook for the Analysis of Interview Data: An Example from a Professional Development Research Project. *Field Methods - FIELD METHOD*, *23*, 136–155.

<https://doi.org/10.1177/1525822X10388468>

- De Kock, J. H., Latham, H. A., Leslie, S. J., Grindle, M., Munoz, S.-A., Ellis, L., Polson, R., & O'Malley, C. M. (2021). A rapid review of the impact of COVID-19 on the mental health of healthcare workers: implications for supporting psychological well-being. *BMC Public Health*, *21*(1). <https://doi.org/10.1186/s12889-020-10070-3>
- Di Tella, M., Romeo, A., Benfante, A., & Castelli, L. (2020). Mental health of healthcare workers during the COVID-19 pandemic in Italy. *Journal of Evaluation in Clinical Practice*, *26*(6), 1583–1587. <https://doi.org/10.1111/jep.13444>
- Dodgson, J. E. (2019). Reflexivity in Qualitative Research. *Journal of Human Lactation*, *35*(2), 220–222. <https://doi.org/10.1177/0890334419830990>
- Donkers, M. A., Gilissen, V. J. H. S., Candel, M. J. J. M., van Dijk, N. M., Kling, H., Heijnen-Panis, R., Pragt, E., van der Horst, I., Pronk, S. A., & van Mook, W. N. K. A. (2021). Moral distress and ethical climate in intensive care medicine during COVID-19: A nationwide study. *BMC Medical Ethics*, *22*(1), 73. <https://doi.org/10.1186/s12910-021-00641-3>
- Dordunoo, D., An, M., Chu, M. S., Yeun, E. J., Hwang, Y. Y., Kim, M., & Lee, Y. (2021). The Impact of Practice Environment and Resilience on Burnout among Clinical Nurses in a Tertiary Hospital Setting. *International Journal of Environmental Research and Public Health*, *18*(5), Article 5. <https://doi.org/10.3390/ijerph18052500>
- Doré, Christina, Duffett-Leger, L., McKenna, M., Breau, M., & Dorais, M. (2018). *CAS - Central Authentication Service*. TheFreeLibrary. <https://www.thefreelibrary.com/Burnout+and+empowerment+in+hemodialysis+nurses+working+in+Quebec%3A+A...-a0535156301>

- Eche, I., Eche, I., & Aronowitz, T. (2022). Psychological Distress and Work-Related Quality of Life Among Oncology Nurses During the COVID-19 Pandemic: A Cross-Sectional Study. *Clinical Journal of Oncology Nursing*, 26(3), 268–274.
<https://doi.org/10.1188/22.CJON.268-274>
- Elo, S., Kääriäinen, M., Kyngäs, H.(2020). The Trustworthiness of Content Analysis. (Eds.), *The application of content analysis in nursing science research*. (pp. 41-48). Springer.
https://doi.org/10.1007/978-3-030-30199-6_1
- Enns, V., Currie, S., & Wang, J. (2015). *Professional autonomy and work setting as contributing factors to depression and absenteeism in Canadian nurses*. Nursing Outlook.
https://journals-scholarsportal-info.librweb.laurentian.ca/details/00296554/v63i0003/269_paawsadaaicn.xml#TBL2
- Faramawy, M. A. E. A., & Kader, A. I. A. E. (2021). COVID-19 anxiety and organizational commitment among front-line nurses: Perceived role of nurse managers' caring behavior. *Nursing Practice Today*. <https://doi.org/10.18502/npt.v9i1.7328>
- Falatah, R. (2021). The Impact of the Coronavirus Disease (COVID-19) Pandemic on Nurses' Turnover Intention: An Integrative Review. *Nursing Reports*, 11(4), Article 4.
<https://doi.org/10.3390/nursrep11040075>
- Fernández-Castillo, R.-J., González-Caro, M.-D., Fernández-García, E., Porcel-Gálvez, A.-M., & Garnacho-Montero, J. (2021). Intensive care nurses' experiences during the COVID-19 pandemic: A qualitative study. *Nursing*

- Fida, R., Tramontano, C., Paciello, M., Kangasniemi, M., Sili, A., Bobbio, A., & Barbaranelli, C. (2016). Nurse moral disengagement. *Nursing Ethics*, *23*(5), 547–564.
<https://doi.org/10.1177/0969733015574924>
- Franche, R.-L., Murray, E., Ibrahim, S., Smith, P., Carnide, N., Côté, P., Gibson, J., & Koehoorn, M. (2011). Examining the Impact of Worker and Workplace Factors on Prolonged Work Absences Among Canadian Nurses. *Journal of Occupational & Environmental Medicine*, *53*(8), 919–927. <https://doi.org/10.1097/jom.0b013e3182255dea>
- Freidus, A., Shenk, D., Davies, M., Wolf, C., & Staudacher, S. (2022). Long-Term Care Staff Perceptions of Providing Care During the COVID-19 Pandemic in the United States and Switzerland: Balancing Protection and Social Isolation. In C. Vindrola-Padros & G. A. Johnson (Eds.), *Caring on the Frontline during COVID-19: Contributions from Rapid Qualitative Research* (pp. 159–178). Springer. https://doi.org/10.1007/978-981-16-6486-1_8
- Frosh, S., & Emerson, P. (2005). Interpretation and over-interpretation: Disputing the meaning of texts. *SAGE Publications*, *5*(3), 267–392. <https://doi.org/10.1177/1468794105054457>
- Fu, W., Wang, C., Zou, L., Guo, Y., Lu, Z., Yan, S., & Mao, J. (2020). Psychological health, sleep quality, and coping styles to stress facing the COVID-19 in Wuhan, China. *Translational Psychiatry*, *10*(1), Article 1. <https://doi.org/10.1038/s41398-020-00913-3>
- Gagné, M.-A., Dubois, C.-A., Prud'Homme, A., & Borgès Da Silva, R. (2019). A cross-sectional study on workplace experience: A survey of nurses in Quebec, Canada. *Human Resources for Health*, *17*(1), 20. <https://doi.org/10.1186/s12960-019-0358-4>
- Galletta, M., Piras, I., Finco, G., Meloni, F., D'Aloja, E., Contu, P., Campagna, M., & Portoghese, I. (2021). Worries, Preparedness, and Perceived Impact of Covid-19

- Pandemic on Nurses' Mental Health. *Frontiers in Public Health*, 9.
<https://doi.org/10.3389/fpubh.2021.566700>
- Ganann, R., Weeres, A., Lam, A., Chung, H., & Valaitis, R. (2019). Optimization of home care nurses in Canada: A scoping review. *Health & Social Care in the Community*, 27(5), e604–e621. <https://doi.org/10.1111/hsc.12797>
- Gélinas, C., Maheu, C., Lavoie-Tremblay, M., Richard-Lalonde, M., Gallani, M. C., Gosselin, É., Hébert, M., Tchouaket Nguemeleu, E., & Côté, J. (2021). Translation of the Fear of COVID-19 Scale into French-Canadian and English-Canadian and Validation in the Nursing Staff of Quebec. *Science of Nursing and Health Practices*, 4(1), 1–23.
<https://doi.org/10.7202/1077985ar>
- Gohar, B., Larivière, M., & Nowrouzi-Kia, B. (2020a). Sickness absence in healthcare workers during the COVID-19 pandemic. *Occupational Medicine*, 70(5), 338–342.
<https://doi.org/10.1093/occmed/kqaa093>
- Gohar, B., Larivière, M., Lightfoot, N., Wenghofer, E., Larivière, C., & Nowrouzi-Kia, B. (2020b). Understanding sickness absence in nurses and personal support workers: Insights from frontline staff and key informants in Northeastern Ontario. *Work (Reading, Mass.)*, 66(4), 755–766. <https://doi.org/10.3233/WOR-203222>
- Gough, D., Oliver, S., & Thomas, J. (2017). *An introduction to systematic reviews*. Sage Publications Ltd.
- Government of Ontario. (2018). *Archived—Regions and offices | Occupational health and safety enforcement April 2016 – March 2017*. Ontario.Ca.
<http://www.ontario.ca/document/occupational-health-and-safety-enforcement-april-2016-march-2017/regions-and-offices>

- Guttormson, J. L., Calkins, K., McAndrew, N., Fitzgerald, J., Losurdo, H., & Loonsfoot, D. (2022). Critical Care Nurse Burnout, Moral Distress, and Mental Health During the COVID-19 Pandemic: A United States Survey. *Heart & Lung, 55*, 127–133. <https://doi.org/10.1016/j.hrtlng.2022.04.015>
- Halcomb, E., McInnes, S., Williams, A., & Ashley, C. (2020). *The Experiences of Primary Healthcare Nurses During the COVID-19 Pandemic in Australia*. *Journal of Nursing Scholarship*. https://sigmapubs.onlinelibrary.wiley.com/doi/full/10.1111/jnu.12589?casa_token=I0I2PfaMecoAAAAA%3AuWd-PfQDbqC5vz8-1HsjrALPDad1HU0WnS3fwnCbUpqXl2rcL1ZBJ7pdZkSyHAF5gYVDhrmbAUtw7w
- Hallaran, A. J., Edge, D. S., Almost, J., & Tregunno, D. (2022). New Nurses' Perceptions on Transition to Practice: A Thematic Analysis. *Canadian Journal of Nursing Research, 08445621221074872*. <https://doi.org/10.1177/08445621221074872>
- Hall, L., & Visekruna, S. (2020). *OUTLOOK ON NURSING A snapshot from Canadian nurses on work environments pre-COVID-19*. https://nursesunions.ca/wp-content/uploads/2020/12/CFNU_outlook_ENfinal_web.pdf
- Halter, M., Boiko, O., Pelone, F., Beighton, C., Harris, R., Gale, J., Gourlay, S., & Drennan, V. (2017). The determinants and consequences of adult nursing staff turnover: A systematic review of systematic reviews. *BMC Health Services Research, 17*(1), 824. <https://doi.org/10.1186/s12913-017-2707-0>
- Harley, B., & Cornelissen, J. (2022). Rigor With or Without Templates? The Pursuit of Methodological Rigor in Qualitative Research. *Organizational Research Methods, 25*(2), 239–261. <https://doi.org/10.1177/1094428120937786>

- Harris, P. A., Taylor, R., Minor, B. L., Elliott, V., Fernandez, M., O'Neal, L., McLeod, L., Delacqua, G., Delacqua, F., Kirby, J., & Duda, S. N. (2019). The REDCap consortium: Building an international community of software platform partners. *Journal of Biomedical Informatics*, *95*, 103208. <https://doi.org/10.1016/j.jbi.2019.103208>
- Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap)—A metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics*, *42*(2), 377–381. <https://doi.org/10.1016/j.jbi.2008.08.010>
- Harrison, R. L., Reilly, T. M., & Creswell, J. W. (2020). Methodological Rigor in Mixed Methods: An Application in Management Studies. *Journal of Mixed Methods Research*, *14*(4), 473–495. <https://doi.org/10.1177/1558689819900585>
- Havaei, F., Oudyk, J., Smith, P., & Potter, G. (2021a). The impact of the COVID-19 pandemic on mental health of nurses in British Columbia, Canada using trends analysis across three time points. *Www.Iwh.on.Ca*, *62*. <https://doi.org/10.1016/j.annepidem.2021.05.004>
- Havaei, F., Ma, A., Staempfli, S., & MacPhee, M. (2021b). Nurses' Workplace Conditions Impacting Their Mental Health during COVID-19: A Cross-Sectional Survey Study. *Healthcare*, *9*(1), Article 1. <https://doi.org/10.3390/healthcare9010084>
- Heale, R., & Noble, H. (2019). Integration of a theoretical framework into your research study. *Evidence Based Nursing*, *22*(2), 36–37. <https://doi.org/10.1136/ebnurs-2019-103077>
- Health Canada. (2024, March 4). *Improving the working lives of nurses across Canada* [News releases]. <https://www.canada.ca/en/health-canada/news/2024/03/improving-the-working-lives-of-nurses-across-canada.html>

- Hoben, M., Knopp-Sihota, J. A., Nesari, M., Chamberlain, S. A., Squires, J. E., Norton, P. G., Cummings, G. G., Stevens, B. J., & Estabrooks, C. A. (2017). Health of health care workers in Canadian nursing homes and pediatric hospitals: A cross-sectional study. *CMAJ Open*, 5(4), E791–E799. <https://doi.org/10.9778/cmajo.20170080>
- Hong, Q., Pluye, P., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Fàbregues, S., Griffiths, F., & Nicolau, B. (2018). *MIXED METHODS APPRAISAL TOOL (MMAT) VERSION 2018*. Canadian Intellectual Property Office, Industry Canada. http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/fetch/127916259/MMAT_2018_criteria-manual_2018-08-01_ENG.pdf
- Hsieh, H. F., & Shannon, S. E. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research*, 15(9), 1277–1288. <http://dx.doi.org/10.1177/1049732305276687>
- International Business Machine. (2022, October 27). *SPSS Software*. <https://www.ibm.com/spss>
- Iheduru-Anderson, K. (2020). Reflections on the lived experience of working with limited personal protective equipment during the COVID-19 crisis. *Nursing Inquiry*, 28(1). <https://doi.org/10.1111/nin.12382>
- Jalilian, H., Shouroki, F., Azmoon, H., Rostamabadi, A., & Choobineh, A. (2019). *Relationship between job stress and fatigue based on job demand-control-support model in hospital nurses*. <https://www.ijpvmjournal.net/article.asp?issn=2008-7802;year=2019;volume=10;issue=1;spage=56;epage=56;aulast=Jalilian>
- Jameton, A. (1993). Dilemmas of moral distress: Moral responsibility and nursing practice. *AWHONN's Clinical Issues in Perinatal and Women's Health Nursing*, 4, 542–551.
- Joanna Briggs Institute Faculty of Health and Medical Science. (2017). *The Joanna Briggs*

Institute Critical Appraisal tools for use in JBI Systematic Reviews: Checklist for Analytical Cross Sectional Studies. Joanna Briggs Institute.

https://jbi.global/sites/default/files/2019-05/JBI_Critical_Appraisal-Checklist_for_Analytical_Cross_Sectional_Studies2017_0.pdf

Jones, P., & Comfort, D. (2020). *The COVID-19 crisis and sustainability in the hospitality industry*. Emerald Insight. <https://www.emerald.com/insight/content/doi/10.1108/IJCHM-04-2020-0357/full/html>

Kantorski, L. P., Oliveira, M. M. de, Alves, P. F., Treichel, C. A. dos S., Wünsch, C. G., Santos, L. H. dos, & Pinheiro, G. E. W. (2022). Intention to leave Nursing during the COVID-19 pandemic. *Revista Latino-Americana de Enfermagem*, 30, e3613. <https://doi.org/10.1590/1518-8345.5815.3549>

Karasek, R. A. (1979). Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative Science Quarterly*, 24(2), 285–308. <https://doi.org/10.2307/2392498>

Karimi, Z., Fereidouni, Z., Behnammoghadam, M., Alimohammadi, N., Mousavizadeh, A., Salehi, T., Mirzaee, M. S., & Mirzaee, S. (2020). The Lived Experience of Nurses Caring for Patients with COVID-19 in Iran: A Phenomenological Study. *Risk Management and Healthcare Policy*, Volume 13(13), 1271–1278. <https://doi.org/10.2147/rmhp.s258785>

Kelley, M. M., Zadvinskis, I. M., Miller, P. S., Monturo, C., Norful, A. A., O’Mathúna, D., Roberts, H., Smith, J., Tucker, S., Zellefrow, C., & Chipps, E. (2022). United States nurses’ experiences during the COVID-19 pandemic: A grounded theory. *Journal of Clinical Nursing*, 31(15–16), 2167–2180. <https://doi.org/10.1111/jocn.16032>

- Kester, K., & Wei, H. (2018). Building nurse resilience. *Nursing Management*, 49(6), 42.
<https://doi.org/10.1097/01.NUMA.0000533768.28005.36>
- Khattak, S. R., Saeed, I., Rehman, S. U., & Fayaz, M. (2021). Impact of Fear of COVID-19 Pandemic on the Mental Health of Nurses in Pakistan. *Journal of Loss and Trauma*, 26(5), 421–435. <https://doi.org/10.1080/15325024.2020.1814580>
- Kilroy, S., Bosak, J., Chênevert, D., Flood, P. C., & Hill, K. (2022). Reducing burnout among nurses: The role of high-involvement work practices and colleague support. *Health Care Management Review*, 47(2), 115. <https://doi.org/10.1097/HMR.0000000000000304>
- Kim, S. C., Quiban, C., Sloan, C., & Montejano, A. (2020). Predictors of poor mental health among nurses during COVID-19 pandemic. *Nursing Open*, 8(2).
<https://doi.org/10.1002/nop2.697>
- King, R., Taylor, B., Talpur, A., Jackson, C., Manley, K., Ashby, N., Tod, A., Ryan, T., Wood, E., Senek, M., & Robertson, S. (2021). Factors that optimise the impact of continuing professional development in nursing: A rapid evidence review. *Nurse Education Today*, 98(Complete). <https://doi.org/10.1016/j.nedt.2020.104652>
- Kosteniuk, J., Stewart, N. J., Wilson, E. C., Penz, K. L., Martin-Misener, R., Morgan, D. G., Karunanayake, C., & MacLeod, M. L. P. (2019). Communication tools and sources of education and information: A national survey of rural and remote nurses. *Journal of the Medical Library Association*, 107(4), 538–556. <https://doi.org/10.5195/jmla.2019.632>
- Kyngäs, H., Mikkonen, K., & Kääriäinen, M. (2020). *The application of content analysis in nursing science research*. Springer.
- Kyngäs, H. (2020). Inductive Content Analysis. (Eds.), *The application of content analysis in*

nursing science research. (pp. 13-21). Springer.

https://doi.org/10.1007/978-3-030-30199-6_1

Kyngäs, H. (2020). Qualitative Research and Content Analysis. (Eds.), *The application of content analysis in nursing science research*. (pp. 4-11). Springer.

https://doi.org/10.1007/978-3-030-30199-6_1

Labrague, L. j., & McEnroe-Petitte, D. m. (2018). Job stress in new nurses during the transition period: An integrative review. *International Nursing Review*, 65(4), 491–504.

<https://doi.org/10.1111/inr.12425>

Labrague, L. J., & De los Santos, J. A. A. (2020). COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support. *Journal of Nursing Management*, 28(7), 1653–1661. <https://doi.org/10.1111/jonm.13121>

Labrague, L. J., & de los Santos, J. A. A. (2021). Fear of COVID-19, psychological distress, work satisfaction and turnover intention among frontline nurses. *Journal of Nursing Management*, 29(3), 395–403. <https://doi.org/10.1111/jonm.13168>

Lake, E. T., Riman, K. A., & Sloane, D. M. (2020). Improved work environments and staffing lead to less missed nursing care: A panel study. *Journal of Nursing Management*, 28(8), 2157–2165. <https://doi.org/10.1111/jonm.12970>

Lapum, J., Nguyen, M., Lai, S., McShane, J., & Fredericks, S. (2021). “The little lights in this dark tunnel”: Emotional support of nurses working in COVID-19 acute care hospital environments. *International Health Trends and Perspectives*, 1(1), Article 1.

<https://doi.org/10.32920/ihtp.v1i1.1417>

Laschinger, H. K. S., Cummings, G., Leiter, M., Wong, C., MacPhee, M., Ritchie, J., Wolff, A., Regan, S., Rhéaume-Brüning, A., Jeffs, L., Young-Ritchie, C., Grinspun, D., Gurnham,

- M. E., Foster, B., Huckstep, S., Ruffolo, M., Shamian, J., Burkoski, V., Wood, K., & Read, E. (2016a). Starting Out: A time-lagged study of new graduate nurses' transition to practice. *International Journal of Nursing Studies*, 57, 82–95.
<https://doi.org/10.1016/j.ijnurstu.2016.01.005>
- Laschinger, H., & Fida, R. (2014). A time-lagged analysis of the effect of authentic leadership on workplace bullying, burnout, and occupational turnover intentions. *European Journal of Work and Organizational Psychology*, 23(5), 739–753.
<https://doi.org/10.1080/1359432X.2013.804646>
- Laschinger, H. K., Zhu, J., & Read, E. (2016b). New nurses' perceptions of professional practice behaviours, quality of care, job satisfaction and career retention. *Journal of Nursing Management*, 24(5), 656–665. <https://doi.org/10.1111/jonm.12370>
- Lasater, K. B., Aiken, L. H., Sloane, D. M., French, R., Martin, B., Reneau, K., Alexander, M., & McHugh, M. D. (2021). Chronic hospital nurse understaffing meets COVID-19: An observational study. *BMJ Quality & Safety*, 30(8), 639–647.
<https://doi.org/10.1136/bmjqs-2020-011512>
- Lavoie, P., Clausen, C., Purden, M., Emed, J., Frunchak, V., & Clarke, S. P. (2021). Nurses' experience of handoffs on four Canadian medical and surgical units: A shared accountability for knowing and safeguarding the patient. *Journal of Advanced Nursing*, 77(10), 4156–4169. <https://doi.org/10.1111/jan.14997>
- Lavoie-Tremblay, M., Gélinas, C., Aubé, T., Tchouaket, E., Tremblay, D., Gagnon, M.-P., & Côté, J. (2021). Influence of caring for COVID-19 patients on nurse's turnover, work satisfaction, and quality of care. *Journal of Nursing Management*.
<https://doi.org/10.1111/jonm.13462>

- Lee, S. E., MacPhee, M., & Dahinten, V. S. (2020). Factors related to perioperative nurses' job satisfaction and intention to leave. *Japan Journal of Nursing Science*, 17(1), e12263.
<https://doi.org/10.1111/jjns.12263>
- Leiter, M., & Laschinger, H. (2006). Relationships of work and practice environment to professional burnout: Testing a causal model. *Nursing Research*, 55(2), 137–146.
<https://doi.org/10.1097/00006199-200603000-00009>
- Lewis, H., & Cunningham, C. (2016). Linking Nurse Leadership and Work Characteristics to Nurse Burnout and Engagement. *Nursing Research*, 65(1), 13–23.
<https://doi.org/10.1097/NNR.0000000000000130>
- Lieblich, A., Tuval-Mashiach, R., & Zilber, T. (1998). *Narrative research : reading, analysis, and interpretation*. Sage, Cop.
- LoGiudice, J. A., & Bartos, S. (2021). Experiences of Nurses During the COVID-19 Pandemic: A Mixed-Methods Study. *AACN Advanced Critical Care*, 32(1), 14–26.
<https://doi.org/10.4037/aacnacc2021816>
- Lou, N. M., Montreuil, T., Feldman, L. S., Fried, G. M., Lavoie-Tremblay, M., Bhanji, F., Kennedy, H., Kaneva, P., Drouin, S., & Harley, J. M. (2021). Evaluations of Healthcare Providers' Perceived Support From Personal, Hospital, and System Resources: Implications for Well-Being and Management in Healthcare in Montreal, Quebec, During COVID-19. *Evaluation & the Health Professions*, 44(3), 319–322.
<https://doi.org/10.1177/01632787211012742>
- Lowe, G. (2006). *Making a Measurable Difference: Evaluating Quality of Work Life Interventions*. <http://grahamlowe.ca/wp->

content/uploads/import_docs/20060317%20Making%20a%20Measurable%20Difference%20-%20english.pdf

Lyons T. F. (1981). Propensity to leave scale of 1971. In Cook J. D., Hepworth S. J., Wall T. D., Warr P. B. (Eds.), *Experience of work: A compendium and review of 249 measures and their use* (pp. 79-80). New York, NY: Academic Press.

Maben, J., & Bridges, J. (2020). Covid-19: Supporting nurses' psychological and mental health. *Journal of Clinical Nursing*, 29(15-16). <https://doi.org/10.1111/jocn.15307>

MacCourt, P. (2013). National Guidelines for a Comprehensive Service System to Support Family Caregivers of Adults with Mental Health Problems and Illnesses. https://mentalhealthcommission.ca/wp-content/uploads/2021/09/Caregiving_MHCC_Family_Caregivers_Guidelines_ENG_0.pdf

MacPhee, M., Dahinten, V. S., & Havaei, F. (2017). The Impact of Heavy Perceived Nurse Workloads on Patient and Nurse Outcomes. *Administrative Sciences*, 7(1), Article 1. <https://doi.org/10.3390/admsci7010007>

Maher, C., Hadfield, M., Hutchings, M., & de Eyto, A. (2018). Ensuring Rigor in Qualitative Data Analysis: A Design Research Approach to Coding Combining NVivo With Traditional Material Methods. *International Journal of Qualitative Methods*, 17(1), 1609406918786362. <https://doi.org/10.1177/1609406918786362>

Mahony, D., & Jones, E. (2013). *Social Determinants of Health in Nursing Education, Research, and Health Policy*. 26(3), 280–284. <https://doi-org.librweb.laurentian.ca/10.1177/0894318413489186>

Manitoba Nurses Union. (2015). *POST-TRAUMATIC STRESS DISORDER (PTSD) IN THE NURSING PROFESSION: HELPING MANITOBA'S WOUNDED HEALERS*.

https://www.hhr-rhs.ca/media/com_mtree/attachments/3650.pdf

Manojlovich, M., & Laschinger, H. (2007). The Nursing Worklife Model: Extending and Refining a New Theory. *Journal of Nursing Management*, 15(3), 256–263.

<https://doi.org/10.1111/j.1365-2834.2007.00670.x>

Marshall, S. (2018, May 15). *Where, exactly, is Northern Ontario?* Where, Exactly, Is Northern Ontario? <https://seanmarshall.ca/2018/05/14/where-exactly-is-northern-ontario/>

Mirzaei, A., Rezakhani Moghaddam, H., & Habibi Soola, A. (2021). Identifying the predictors of turnover intention based on psychosocial factors of nurses during the COVID-19 outbreak. *Nursing Open*, 8(6), 3469–3476. <https://doi.org/10.1002/nop2.896>

Montoya, V., Donnini, K., Gauthier-Loiselle, M., Sanon, M., Cloutier, M., Maitland, J., Guérin, A., Dutka, P., Pryor, L., Thomas-Hawkins, C., Voegel, A., Hoffmann, M., Savin, S., Kurzman, A., & Kear, T. (2021). Mental Health and Health-Related Quality of Life Among Nephrology Nurses: A Survey-Based Cross-Sectional Study. *Nephrology Nursing Journal: Journal of the American Nephrology Nurses' Association*, 48(5), 447–461. <https://pubmed.ncbi.nlm.nih.gov/34756000/>

Mrklas, K., Shalaby, R., Hrabok, M., Gusnowski, A., Vuong, W., Surood, S., Urichuk, L., Li, D., Li, X.-M., Greenshaw, A. J., & Agyapong, V. I. O. (2020). Prevalence of Perceived Stress, Anxiety, Depression, and Obsessive-Compulsive Symptoms in Health Care Workers and Other Workers in Alberta During the COVID-19 Pandemic: Cross-Sectional Survey. *JMIR Mental Health*, 7(9), e22408. <https://doi.org/10.2196/22408>

- Muller, A. E., Hafstad, E. V., Himmels, J. P. W., Smedslund, G., Flottorp, S., Stensland, S. Ø., Stroobants, S., Van de Velde, S., & Vist, G. E. (2020). The mental health impact of the covid-19 pandemic on healthcare workers, and interventions to help them: A rapid systematic review. *Psychiatry Research*, *293*, 113441.
<https://doi.org/10.1016/j.psychres.2020.113441>
- Murphy, G., Sampalli, T., Bearskin, L., Cashen, N., & Cummings, G. (2022). *Investing in Canada's Nursing Workforce Post-Pandemic: A Call to Action*.
- Nagel, C., & Nilsson, K. (2022). Nurses' Work-Related Mental Health in 2017 and 2020—A Comparative Follow-Up Study before and during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, *19*(23), 15569.
<https://doi.org/10.3390/ijerph192315569>
- National Institute of Mental Health. (2021). *Chronic Illness and Mental Health: Recognizing and Treating Depression*. <https://www.nimh.nih.gov/health/publications/chronic-illness-mental-health>
- Ness, M., Saylor, J., Fusco, L., & Evans, K. (2021). Healthcare providers' challenges during the coronavirus disease (COVID-19) pandemic: A qualitative approach. *Nursing & Health Sciences*, *23*(2), 389–397. <https://doi.org/10.1111/nhs.12820>
- Norful, A. A., Rosenfeld, A., Schroeder, K., Travers, J. L., & Aliyu, S. (2021). Primary drivers and psychological manifestations of stress in frontline healthcare workforce during the initial COVID-19 outbreak in the United States. *General Hospital Psychiatry*, *69*(69), 20–26. <https://doi.org/10.1016/j.genhosppsy.2021.01.001>

- Nova Scotia College of Nursing. (2017). *Quality Nursing Practice Environments*.
https://cdn3.nscn.ca/sites/default/files/documents/resources/Quality_Nursing_Practice_Environmentsold2.pdf
- Nowrouzi-Kia, B., & Fox, M. T. (2019). Factors Associated With Intent to Leave in Registered Nurses Working in Acute Care Hospitals: A Cross-Sectional Random Sample Study in Ontario, Canada. *Workplace Health & Safety*, 68(3), 216507991988495.
<https://doi.org/10.1177/2165079919884956>
- Nowrouzi, B., Lightfoot, N., Carter, L., Larivière, M., Rukholm, E., & Belanger-Gardner, D. (2015a). A qualitative study of the work environment in obstetrical nursing in northeastern Ontario, Canada. *Journal of Nursing Education and Practice*, 5(7), Article 7. <https://doi.org/10.5430/jnep.v5n7p10>
- Nowrouzi-Kia, B., Rukholm, E., Larivière, M., Carter, L., Koren, I., & Mian, O. (2015b). *An examination of retention factors among registered practical nurses in north-eastern Ontario, Canada*. <https://doi.org/10.22605/RRH3191>
- Nowrouzi-Kia, B., Sithamparanathan, G., Nadesar, N., Gohar, B., & Ott, M. (2022). Factors associated with work performance and mental health of healthcare workers during pandemics: A systematic review and meta-analysis. *Journal of Public Health*, 44(4), 731–773. <https://doi.org/10.1093/pubmed/fdab173>
- Ontario Nurses Association. (2017). *2017 PRE-BUDGET CONSULTATIONS*.
https://www.ona.org/wp-content/uploads/ona_prebudgetsubmission_2017.pdf?x72008
- Pae, C.-U. (2015). Why Systematic Review rather than Narrative Review? *Psychiatry Investigation*, 12(3), 417. <https://doi.org/10.4306/pi.2015.12.3.417>
- Pérez-Francisco, D. H., Duarte-Clíments, G., del Rosario-Melián, J. M., Gómez-Salgado, J.,

- Romero-Martín, M., & Sánchez-Gómez, M. B. (2020). Influence of Workload on Primary Care Nurses' Health and Burnout, Patients' Safety, and Quality of Care: Integrative Review. *Healthcare*, 8(1), Article 1.
<https://doi.org/10.3390/healthcare8010012>
- Phoenix Australia – Centre for Posttraumatic Mental Health. (2020). *Moral Stress Amongst Healthcare Workers During COVID-19: A Guide to Moral Injury*.
<https://www.phoenixaustralia.org/wp-content/uploads/2022/08/Moral-Stress-Healthcare-Workers-COVID-19-Guide-to-Moral-Injury.pdf>
- Pio, R. (2022). The mediation effect of quality of worklife and job satisfaction in the relationship between spiritual leadership to employee performance. *International Journal of Law and Management*, 64(1), 1–17. <https://doi.org/10.1108/IJLMA-07-2018-0138>
- Plouffe, R. A., Nazarov, A., Forchuk, C. A., Gargala, D., Deda, E., Le, T., Bourret-Gheysen, J., Jackson, B., Soares, V., Hosseiny, F., Smith, P., Roth, M., MacDougall, A. G., Marlborough, M., Jetly, R., Heber, A., Albuquerque, J., Lanius, R., Balderson, K., ... Richardson, J. D. (2021). Impacts of morally distressing experiences on the mental health of Canadian health care workers during the COVID-19 pandemic. *European Journal of Psychotraumatology*, 12(1), 1984667. <https://doi.org/10.1080/20008198.2021.1984667>
- Pogorzelska-Maziarz, M., de Cordova, P., Manning, M. L., Johansen, M., Grafova, I., & Gerolamo, A. (2023). Voices from Frontline Nurses on Care Quality and Patient Safety During COVID-19: An Application of the Donabedian Model. *American Journal of Infection Control*. <https://doi.org/10.1016/j.ajic.2023.08.014>
- Presseau, J., Johnston, M., Johnston, D. W., Elovainio, M., Hrisos, S., Steen, N., Stamp, E., Francis, J. J., Grimshaw, J. M., Hawthorne, G., Hunter, M., & Eccles, M. P. (2013).

- Environmental and individual correlates of distress: Testing Karasek's Demand-Control model in 99 primary care clinical environments. *British Journal of Health Psychology*, *19*(2), 292–310. <https://doi.org/10.1111/bjhp.12073>
- Rabin, S., Kika, N., Lamb, D., Murphy, D., AM Stevelink, S., Williamson, V., Wessely, S., & Greenberg, N. (2023). Moral Injuries in Healthcare Workers: What Causes Them and What to Do About Them? *Journal of Healthcare Leadership*, *15*, 153–160. <https://doi.org/10.2147/JHL.S396659>
- Registered Nurses Association of Ontario. (2017a). *Developing and Sustaining Safe, Effective Staffing and Workload Practices*. https://rnao.ca/sites/rnao-ca/files/bpg/Staffing_and_Workload_Practices_2017.pdf
- Registered Nurses Association of Ontario. (2017b). *70 years of RN effectiveness*. <https://rnao.ca/bpg/initiatives/RNEffectiveness>
- Registered Nurses Association of Ontario. (2021). *Work and Wellbeing Survey Results*. https://rnao.ca/sites/rnao-ca/files/Nurses_Wellbeing_Survey_Results_-_March_31.pdf
- Riedel, B., Horen, S. R., Reynolds, A., & Hamidian Jahromi, A. (2021). Mental Health Disorders in Nurses During the COVID-19 Pandemic: Implications and Coping Strategies. *Frontiers in Public Health*, *9*. <https://doi.org/10.3389/fpubh.2021.707358>
- Ritchie, K., D'Alessandro-Lowe, A. M., Brown, A., Millman, H., Pichtikova, M., Xue, Y., Altman, M., Beech, I., Karram, M., Hosseiny, F., Rodrigues, S., O'Connor, C., Schielke, H., Malain, A., McCabe, R. E., Heber, A., Lanius, R. A., & McKinnon, M. C. (2023). The Hidden Crisis: Understanding Potentially Morally Injurious Events Experienced by Healthcare Providers during COVID-19 in Canada. *International Journal of*

Environmental Research and Public Health, 20(6), Article 6.

<https://doi.org/10.3390/ijerph20064813>

Rivas, N., López, M., Castro, M.-J., Luis-Vian, S., Fernández-Castro, M., Cao, M.-J., García, S., Velasco-Gonzalez, V., & Jiménez, J.-M. (2021). Analysis of Burnout Syndrome and Resilience in Nurses throughout the COVID-19 Pandemic: A Cross-Sectional Study.

International Journal of Environmental Research and Public Health, 18(19), Article 19.

<https://doi.org/10.3390/ijerph181910470>

Roberts, K., Dowell, A., & Nie, J.-B. (2019). Attempting rigour and replicability in thematic analysis of qualitative research data; a case study of codebook development. *BMC Medical Research Methodology*, 19(1), 66.

<https://doi.org/10.1186/s12874-019-0707-y>

Roche, M. A., Laschinger, H. K. S., & Duffield, C. (2015). Testing the Nursing Worklife Model in Canada and Australia: A multi-group comparison study. *International Journal of Nursing Studies*, 52(2), 525–534.

<https://doi.org/10.1016/j.ijnurstu.2014.10.016>

Rubin, H., & Rubin, I. (2005). *Qualitative Interviewing (2nd ed.): The Art of Hearing Data*.

SAGE Publications, Inc. <https://doi.org/10.4135/9781452226651>

Sagherian, K., Steege, L. M., Cobb, S. J., & Cho, H. (2020). Insomnia, fatigue and psychosocial well-being during COVID-19 pandemic: A cross-sectional survey of hospital nursing staff in the United States. *Journal of Clinical Nursing*, n/a(n/a).

<https://doi.org/10.1111/jocn.15566>

Sampaio, F., Sequeira, C., & Teixeira, L. (2020). Nurses' Mental Health During the Covid-19 Outbreak: A Cross-Sectional Study. *Journal of Occupational and Environmental*

Medicine, 62(10), 783. <https://doi.org/10.1097/JOM.0000000000001987>

- Schroeder, K., Norful, A., & Travers, J. (2020). Nursing perspectives on care delivery during the early stages of the covid-19 pandemic: A qualitative study. *International Journal of Nursing Studies Advances*, 2, 100006. <https://doi.org/10.1016/j.ijnsa.2020.100006>
- Shaffer, F. A., Bakhshi, M. A., Cook, K. N., & Álvarez, T. D. (2021). The Contributions of Immigrant Nurses in the U.S. During the COVID-19 Pandemic: A CGFNS International Study. *Nurse Leader*, 19(2), 198–203. <https://doi.org/10.1016/j.mnl.2020.11.007>
- Shechter, A., Diaz, F., Moise, N., Anstey, D. E., Ye, S., Agarwal, S., Birk, J. L., Brodie, D., Cannone, D. E., Chang, B., Claassen, J., Cornelius, T., Derby, L., Dong, M., Givens, R. C., Hochman, B., Homma, S., Kronish, I. M., Lee, S. A. J., ... Abdalla, M. (2020). Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic. *General Hospital Psychiatry*, 66, 1–8. <https://doi.org/10.1016/j.genhosppsy.2020.06.007>
- Silas, L. (2022). *HOUSE OF COMMONS STANDING COMMITTEE ON HEALTH: Study of Canada's Health Workforce*. Canadian Federation of Nurses Unions. <https://www.ourcommons.ca/Content/Committee/441/HESA/Brief/BR11621740/br-external/CanadianFederationOfNursesUnions-e.pdf>
- Smith, B., & Sparkes, A. (2020). *Handbook of Sport Psychology Exercise, Methodologies, & Special Topics Measurement and Methodologies* (4th ed., Vol. 1). <https://onlinelibrary.wiley.com/doi/chapter-epub/10.1002/9781119568124.ch49>
- Song, Y., Thorne, T. E., Duan, Y., Cummings, G., Norton, P. G., Squires, J., & Estabrooks, C. A. (2023). Pre-COVID-19 work-life quality of regulated nurses in Canadian nursing homes. *Geriatrics & Gerontology International*, 23(2), 148–150. <https://doi.org/10.1111/ggi.14536>

- Sperling, D. (2021). Nurses' challenges, concerns and unfair requirements during the COVID-19 outbreak. *Nursing Ethics*, 28(7–8), 1096–1110.
<https://doi.org/10.1177/09697330211005175>
- Spratling, R., & Hallas, D. (2022). *Reporting and Appraising Research Studies Authors*. ResearchGate.
https://www.researchgate.net/publication/344354543_Reporting_and_Appraising_Research_Studies
- Statistics Canada. (2022). *Experiences of health care workers during the COVID-19 pandemic, September to November 2021* (pp. 1–8). <https://www150.statcan.gc.ca/n1/daily-quotidien/220603/dq220603a-eng.htm>
- Stayt, L. C., Bench, S., Credland, N., & Plowright, C. (2023). Learning from COVID-19: Cross-sectional e-survey of critical care nurses' satisfaction and experiences of their role in the pandemic response across the United Kingdom. *Nursing in Critical Care*, 28(2), 298–306. <https://doi.org/10.1111/nicc.12850>
- Taherdoost, H. (2017). *Determining Sample Size; How to Calculate Survey Sample Size*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3224205
- Tamata, A. T., Mohammadnezhad, M., & Tamani, L. (2021). Registered nurses' perceptions on the factors affecting nursing shortage in the Republic of Vanuatu Hospitals: A qualitative study. *PLOS ONE*, 16(5), e0251890. <https://doi.org/10.1371/journal.pone.0251890>
- Tan, B. Y. Q., Chew, N. W. S., Lee, G. K. H., Jing, M., Goh, Y., Yeo, L. L. L., Zhang, K., Chin, H.-K., Ahmad, A., Khan, F. A., Shanmugam, G. N., Chan, B. P. L., Sunny, S., Chandra, B., Ong, J. J. Y., Paliwal, P. R., Wong, L. Y. H., Sagayanathan, R., Chen, J. T., & Ying Ng, A. Y. (2020). Psychological Impact of the COVID-19 Pandemic on Health Care

- Workers in Singapore. *Annals of Internal Medicine*, 173(4), 317–320.
<https://doi.org/10.7326/m20-1083>
- Theofanidis, D., & Fountouki, A. (2019). *LIMITATIONS AND DELIMITATIONS IN THE RESEARCH PROCESS*. <https://doi.org/10.5281/ZENODO.2552022>
- Thorne, S., Kirkham, S. R., & O’Flynn-Magee, K. (2004). The Analytic Challenge in Interpretive Description. *International Journal of Qualitative Methods*, 3(1), 1–11.
<https://doi.org/10.1177/160940690400300101>
- Tokac, U., & Razon, S. (2021). Nursing professionals’ mental well-being and workplace impairment during the COVID-19 crisis: A Network analysis. *Journal of Nursing Management*, 29(6), 1653–1659. <https://doi.org/10.1111/jonm.13285>
- Trépanier, S., Peterson, C., Fernet, C., Austin, S., & Desrumaux, P. (2021). When workload predicts exposure to bullying behaviours in nurses: The protective role of social support and job recognition. *Journal of Advanced Nursing*, 77(7), 3093–3103. <https://doi-org.librweb.laurentian.ca/10.1111/jan.14849>
- Trousselard, M., Dutheil, F., Naughton, G., Cosserant, S., Amadon, S., Dualé, C., & Schoeffler, P. (2016). Stress among nurses working in emergency, anesthesiology and intensive care units depends on qualification: A Job Demand-Control survey. *International Archives of Occupational and Environmental Health*, 89(2), 221–229.
<https://doi.org/10.1007/s00420-015-1065-7>
- Ünver, S., & Yeniğün, S. (2022). *CAS - Central Authentication Service*. Laurentian.ca.
<https://www-sciencedirect-com.librweb.laurentian.ca/science/article/pii/S1089947221000903?via%3Dihub>

- Waqas, A., Akhtar, P., Afzaal, T., Meraj, H., & Naveed, S. (2021). *Social support interventions for healthcare workers*.
- Wasserman, C., & Ossiander, E. (2018). *Department of Health Agency Standards for Reporting Data with Small Numbers*. The Assessment Operations Group in the Washington State Department of Health.
<https://doh.wa.gov/sites/default/files/legacy/Documents/1500//SmallNumbers.pdf>
- Wei, H., Roberts, P., Strickler, J., & Corbett, R. W. (2019). Nurse leaders' strategies to foster nurse resilience. *Journal of Nursing Management*, 27(4), 681–687.
<https://doi.org/10.1111/jonm.12736>
- White, J. H. (2021). A Phenomenological Study of Nurse Managers' and Assistant Nurse Managers' Experiences during the COVID-19 Pandemic in the United States. *Journal of Nursing Management*, 29(6), 1525–1534. <https://doi.org/10.1111/jonm.13304>
- Wood, R. E., Bleich, M., Chung, J., Elswick, R. K., Nease, E., Sargent, L., & Kinser, P. A. (2023). A mixed-methods exploration of nurse loneliness and burnout during COVID-19. *Applied Nursing Research*, 73, 151716. <https://doi.org/10.1016/j.apnr.2023.151716>
- World Health Organization. (2022). *WHO COVID-19 dashboard*. World Health Organization.
<https://covid19.who.int/>
- World Health Organization. (2020, March 11). *WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020*. World Health Organization.
<https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>

Yildirim, D., & Kocatepe, V. (2022). Professional values and ethical sensitivities of nurses in COVID-19 pandemic. *Nursing Forum*, *57*(6), 1111–1119.

<https://doi.org/10.1111/nuf.12797>

Ying, Y., Ruan, L., Kong, F., Zhu, B., Ji, Y., & Lou, Z. (2020). Mental health status among family members of health care workers in Ningbo, China, during the coronavirus disease 2019 (COVID-19) outbreak: A cross-sectional study. *BMC Psychiatry*, *20*(1), 379.

<https://doi.org/10.1186/s12888-020-02784-w>

Young, K. P., Kolcz, D. L., O’Sullivan, D. M., Ferrand, J., Fried, J., & Robinson, K. (2020). Health Care Workers’ Mental Health and Quality of Life During COVID-19: Results From a Mid-Pandemic, National Survey. *Psychiatric Services*, *72*(2), 122–128.

<https://doi.org/10.1176/appi.ps.202000424>

Zahiriharsini, A., Gilbert-Ouimet, M., Langlois, L., Biron, C., Pelletier, J., Beaulieu, M., & Truchon, M. (2022). Associations between psychosocial stressors at work and moral injury in frontline healthcare workers and leaders facing the COVID-19 pandemic in Quebec, Canada: A cross-sectional study. *Journal of Psychiatric Research*, *155*, 269–278. <https://doi.org/10.1016/j.jpsychires.2022.09.006>

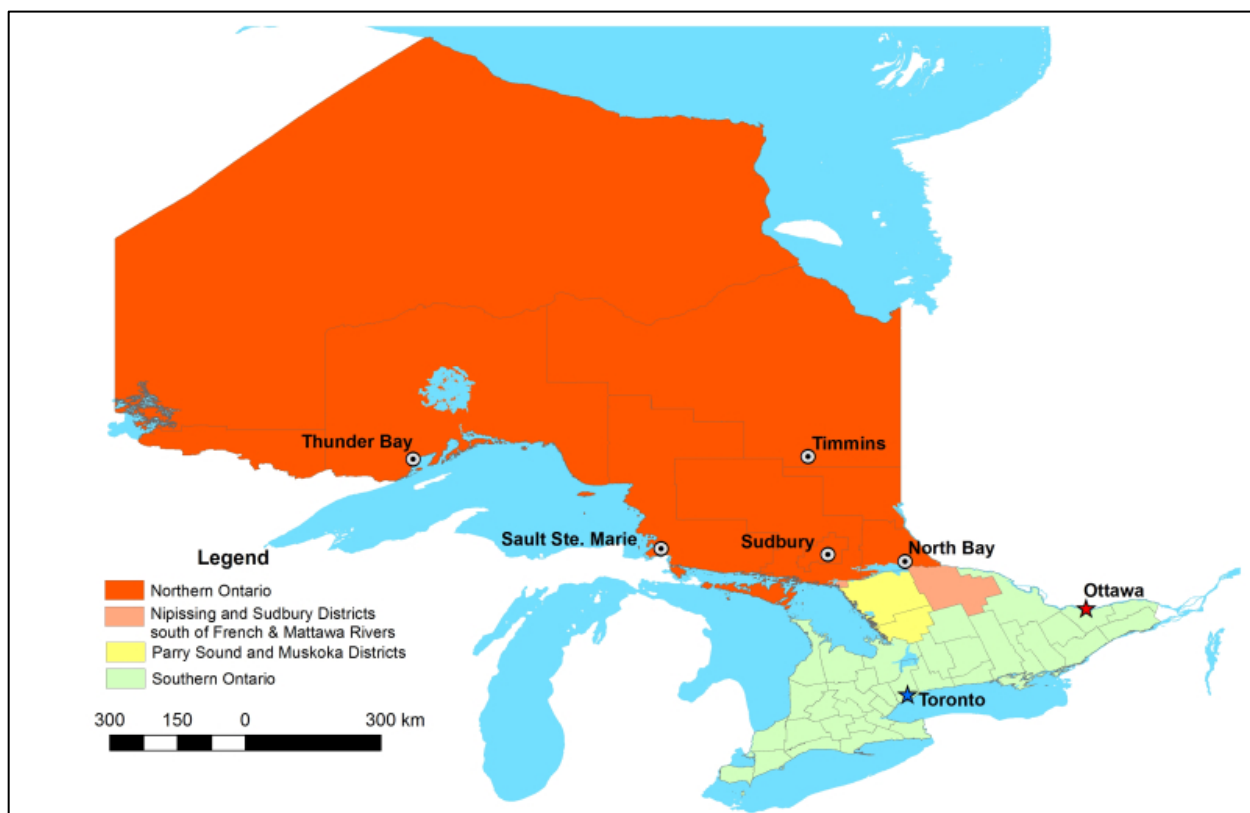
Zamanzadeh, V., Valizadeh, L., Khajehgoodari, M., & Bagheriyeh, F. (2021). Nurses’ experiences during the COVID-19 pandemic in Iran: a qualitative study. *BMC Nursing*, *20*(1). <https://doi.org/10.1186/s12912-021-00722-z>

Zhang, W., Wang, K., Yin, L., Zhao, W., Xue, Q., Peng, M., Min, B., Tian, Q., Leng, H., Du, J., Chang, H., Yang, Y., Li, W., Shangguan, F., Yan, T., Dong, H., Han, Y., Wang, Y., Cosci, F., & Wang, H. (2020). Mental Health and Psychosocial Problems of Medical

Health Workers during the COVID-19 Epidemic in China. *Psychotherapy and Psychosomatics*, 89(4), 242–250. <https://doi.org/10.1159/000507639>

Appendix A

Map of Northern Ontario



Map of Northern Ontario (Marshall, 2018).

Appendix B

Critical Appraisal Tools

Example of CASP used in Literature Review Article

1. Arnetz, J. E., Goetz, C. M., Arnetz, B. B., & Arble, E. (2020a). Nurse Reports of Stressful Situations during the COVID-19 Pandemic: Qualitative Analysis of Survey Responses. *International Journal of Environmental Research and Public Health*, 17(21), 8126.
<https://doi.org/10.3390/ijerph17218126>

Study Type: Qualitative, Cross-sectional study.

Critical Appraisal Tool: CASP Checklist: 10 questions to help you make sense of a Qualitative research

<p>1. Was there a clear statement of the aims of the research?</p>	<p>The aims of this research were clearly stated. The aims of this research study were to explore the perception of most noticeable stress sources in the early stages of the COVID-19 pandemic within a sample of nurses in the United States.</p>
<p>2. Is a qualitative methodology appropriate?</p>	<p>The qualitative methodology is appropriate because the open-response answers to the survey question of describing the “the most stressful situations you have dealt with during the COVID-19 pandemic” can descriptively help illuminate sources of stressors for nurses working during the COVID-19 pandemic.</p>
<p>3. Was the research design appropriate to address the aims of the research?</p>	<p>“A cross-sectional survey study of nurses in Michigan was conducted in May 2020. In addition to the 84 questions with forced choices, only the final question of the survey was open-ended and asked nurses to describe “the most stressful situations you have dealt with during the COVID-19 pandemic”.” (Arnetz et al., 2020a, p. 3). In this study, qualitative content analysis was used to examine nurses’ responses to this final open-ended question.</p>

<p>4. Was the recruitment strategy appropriate to the aims of the research?</p>	<p>“Participants were recruited from the Michigan American Nurses Association (ANA), the Michigan Organization of Nurse Leaders (MONL), and the Coalition of Michigan Organizations of Nursing (COMON). A total of 695 responses were collected. From this summation, 455 nurses also responded to the open-ended question (65.47%) and these nurses’ responses are examined in the current study.” (Arnetz et al., 2020a, p. 3).</p> <p>Yes, the recruitment strategy was appropriate for the aims of the study.</p>
<p>5. Was the data collected in a way that addressed the research issue?</p>	<p>This study used a content analysis method to help address the research issue. The qualitative content analysis of the open-ended responses was conducted using an inductive approach to code the content into themes. Thematic analysis gives a framework for structuring and organizing qualitative data by establishing a coding system in which codes are grouped into recurrent themes relevant to the research question. Yes, the data was collected in a way that addressed the research issue.</p>
<p>6. Has the relationship between researcher and participants been adequately considered?</p>	<p>Yes, each nurse who agreed to participate in the study, had to first complete a consent statement in Qualtrics. The survey was confidential and anonymous, and the participants could terminate their participation at any time without any negative repercussions.</p>
<p>7. Have ethical issues been taken into consideration?</p>	<p>Yes, this study was given ethical approval by the Institutional Review Board at Michigan State University (Study 00004459).</p>
<p>8. Was the data analysis sufficiently rigorous?</p>	<p>Qualitative rigor was achieved using Lincoln and Guba’s criteria (credibility, transferability, dependability, and confirmability).</p> <p>Credibility was achieved by comprehensiveness in data collection and analysis. All three coders of this study got to be highly familiar with the data by</p>

	<p>reading through the responses numerous times.</p> <p>Transferability was assured by using direct quotes from participants to illustrate the results.</p> <p>Dependability was achieved by using 1 coder who was not actively involved in the development of the themes.</p> <p>Confirmability was achieved through analyst triangulation involving the 3 researchers. All coders analyzed the verbatim responses, then validated findings amongst themselves.</p>
<p>9. Is there a clear statement of the findings?</p>	<p>Yes, the thematic analysis revealed 6 themes: exposure/Infection, illness/ Death, workplace/ supplies, Unknowns, and opinion/politics.</p> <p><u>Exposure/ Infection</u></p> <p>-“This theme summarized the fear of spreading the COVID-19 pandemic, becoming self-exposed to the virus, as well as transmitting virus to patients and family members“ (Arnetz et al., 2020a, p. 5)</p> <p><u>Illness/ Death</u></p> <p>-This theme represents managing mental health with infection, death and illness of coworkers, family members and patients. Additionally, this theme also includes concern for others becoming ill, like coworkers and patients” (Arnetz et al., 2020a, p. 5)</p> <p><u>workplace</u></p> <p>-“This theme looks at work-related problems experienced by nurses within their healthcare organizations. This includes relationships with coworkers,</p>

	<p>failure to provide support and resources and training”(Arnetz et al., 2020a, p. 5)</p> <p><u>PPE/ supplies</u></p> <p>-“This theme looked at stress factors related to PPE/ supplies. This included insufficient amounts of PPE, sanitation supplies, ventilators, and testing supplies” (Arnetz et al., 2020a, p. 5).</p> <p><u>Unknowns</u></p> <p>-“This theme includes information and objectives that are currently unknown with the pandemic. This includes not knowing when the pandemic will end, potential pandemic surge, change in understanding of Covid-19 symptoms, PPE necessities” (Arnetz et al., 2020a, p. 5).</p> <p><u>opinion/politics</u></p> <p>-“This theme looks at the opinions of family/ community members related to COVID-19 pandemic. These opinions encompassed the perceived failings from state and federal government levels as it pertains to COVID-19 restrictions, spread of misinformation, and dealing with protestors that believe COVID-19 is a hoax” (Arnetz et al., 2020a, p. 5)</p>
<p>10. How valuable is the research?</p>	<p>This research is very important because the discovery nurses’ perceptions of stress during the COVID-19 pandemic’s early phase provides important information into nurses’ experiences and potential measures that healthcare institutions/ organizations can take to mitigate nurses’ stress.</p>

Example of Joanna Briggs Institute tool used in Literature Review Article

2. Havaei, F., Ma, A., Staempfli, S., & MacPhee, M. (2021). Nurses' Workplace Conditions

Impacting Their Mental Health during COVID-19: A Cross-Sectional Survey Study.

Healthcare, 9(1), 84. <https://doi.org/10.3390/healthcare9010084>

Study Type: Quantitative, Cross-sectional study.

Appraisal Tool: JBI Critical Appraisal Checklist for Cross Sectional Studies

Question	Yes	No	Unclear	Not applicable
Were the criteria for inclusion in the sample clearly defined?	Yes Inclusion: All members (~48,000) of the provincial nurses' union were invited to complete an electronic survey.			
Were the study subjects and the setting described in detail?	Yes "The sample of actively working nurses in this study (n = 3676) consisted primarily of RNs/RPNs (80%) and LPNs (19%). The majority of the sample reported their nursing role as direct care provider (86%) and their geographic area as urban or suburban (84%). More than half indicated their nursing sector as acute care (63%). The mean for nursing experience was approximately 12 years (SD = 7.2), with 24% reporting 5 years of experience or less, while 28% reporting 21 years or more." (Havaei et al., 2021, p. 5)			
Was the exposure measured in a valid and reliable way?	Yes. All participants were nurses working during the pandemic and results were measured using the same survey for all participants. The tools used in the survey are described below:			

	<p>“Post-traumatic stress disorder was measured using a validated scale, the Posttraumatic Stress Symptoms-14 (PTSS-14) instrument. The PTSS-14 is comprised of 14 items that reflect symptoms as described by the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) criteria for PTSD, such as feelings of guilt or nightmares about duty in the primary workplace. Respondents’ feelings over the last two weeks were rated on a 7-point Likert-type scale ranging from 1 (never) to 7 (always). Sum scores were tallied from each participant’s responses, with prior research establishing a cutoff score of 45 as an indicator of PTSD.</p> <p>Anxiety was assessed using the validated Generalized Anxiety Disorder-7 (GAD-7) instrument, which includes seven items describing symptoms of generalized anxiety disorder as outlined by the DSM-IV diagnostic criteria. Respondents were asked to rate the frequency of the feelings described over the last two weeks along a 4-point Likert-type scale ranging from 0 (not at all) to 3 (nearly every day).</p> <p>Depression was measured using the Patient Health Questionnaire-9 (PHQ-9). The PHQ-9 consists of nine items reflecting feelings, meeting the DSM-IV diagnostic criteria for depression, such as depressive mood, poor appetite, and</p>			
--	---	--	--	--

	<p>insomnia. Respondents rated how often they experienced these symptoms over the past two weeks, along a 4-point Likert-type scale ranging from 0 (not at all) to 3 (nearly every day).</p> <p>Finally, EE was measured using items from the EE subscale of the Maslach Burnout Inventory–Human Services Survey (MBI-HSS). Items from the subscale include statements such as “I feel emotionally drained from my work” and “I feel like I’m at the end of my rope”, with respondents rating the frequency of the described feeling along a 7-point Likert-type scale ranging from 0 (never) to 6 (every day). The sum scores for the EE subscale were categorized by cutoff scores into the following categories: 0–16 = low, 17–26 = moderate, ≥ 27 = high EE..” (Havaei et al., 2021, p. 2-3).</p>			
Were objective, standard criteria used for measurement of the condition?	<p>Yes.</p> <p>Validated tools were used to measure nurses experiences during the pandemic. It is listed above.</p>			
Were confounding factors identified?				NA
Were strategies to deal with confounding factors stated?				NA
Were the outcomes measured in a	Yes, the data was collected the same way for each of the participants which was through			

valid and reliable way?	an online web-based survey study.			
Was appropriate statistical analysis used?	<p>Yes, analysis methods are included below.</p> <p>“Key methods of data analysis included descriptive statistics and multiple linear regression using the Statistical Package for Social Sciences 27 (SPSS Inc., Chicago, IL, USA). Our final regression models included five control variables followed by 14 predictors in blocks of workplace safety (5 predictors), resources and supplies (2 predictors), organizational preparedness (3 predictors), organizational support (1 predictor), and workplace relations (3 predictors).” (Havaei et al., 2021, p. 5).</p>			
Overall appraisal (Include, Exclude)	Include			

Example of Mixed Methods Appraisal Tool tool used in Literature Review Article

3. Crowe, S., Fuchsia Howard, A., Vanderspank-Wright, B., Gillis, P., McLeod, F., Penner, C., & Haljan, G. (2020). The Effect of COVID-19 Pandemic on the Mental Health of Canadian Critical Care Nurses Providing Patient Care during the Early Phase Pandemic: A Mixed Method Study. *Intensive and Critical Care Nursing*, 102999, 102999.
<https://doi.org/10.1016/j.iccn.2020.102999>

Study Type: Convergent, Parallel-Mixed Methods Study

Critical Appraisal Tool: Mixed Methods Appraisal Tool version 18

Study Component	Methodological Quality Criteria	Yes	No	Cant't Tell
1. Qualitative	1.1. Are the sources of qualitative data (archives, documents, informants, observations) relevant to address the research question (objective)?	Yes		
	1.2. Is the process for analyzing qualitative data relevant to address the research question (objective)?	Yes		
	1.3. Is appropriate consideration given to how findings relate to the context, e.g., the setting, in which the data were collected?	Yes		
	1.4. Is appropriate consideration given to how findings relate to researchers' influence, e.g., through their interactions with participants?	Yes		
2. Quantitative descriptive	2.1. Is the sampling strategy relevant to address the quantitative research question (quantitative aspect of the mixed methods question)?	Yes		

	2.2. Is the sample representative of the population understudy?		No	
	2.3. Are measurements appropriate (clear origin, or validity known, or standard instrument)?	yes		
	2.4. Is there an acceptable response rate (60% or above)?		No	
3. Mixed Methods	3.1. Is the mixed methods research design relevant to address the qualitative and quantitative research questions (or objectives), or the qualitative and quantitative aspects of the mixed methods question (or objective)?	Yes		
	3.2. Is the integration of qualitative and quantitative data (or results*) relevant to address the research question (objective)?	Yes		
	3.3 Is appropriate consideration given to the limitations associated with this integration, e.g., the divergence of qualitative and quantitative data (or results*) in a triangulation design?	Yes		

Appendix C

Laurentian University Research and Ethics Approval



APPROVAL FOR CONDUCTING RESEARCH INVOLVING HUMAN SUBJECTS
Research Ethics Board – Laurentian University

This letter confirms that the research project identified below has successfully passed the ethics review by the Laurentian University Research Ethics Board (REB). Your ethics approval date, other milestone dates, and any special conditions for your project are indicated below.

TYPE OF APPROVAL / New X /	Modifications to project / Time extension
Name of Principal Investigator and school/department	Judith Horrigan, Nursing, co-investigator, Behdin Nowrouzi-Kia, Collaborators, Basem Gohar Henrietta Van Hulle, Kim Slade, Disal Wikramamsinghe, Research assistant
Title of Project	The mental health of registered nurses and registered practical nurses in northern Ontario during the COVID-19 global pandemic
REB file number	6020902
Date of original approval of project	February 28 th , 2021
Date of approval of project modifications or extension (if applicable)	
Final/Interim report due on: <i>(You may request an extension)</i>	February 28 th , 2022
Conditions placed on project	

During the course of your research, no deviations from, or changes to, the protocol, recruitment or consent forms may be initiated without prior written approval from the REB. If you wish to modify your research project, please refer to the Research Ethics website to complete the appropriate REB form.

All projects must submit a report to REB at least once per year. If involvement with human participants continues for longer than one year (e.g. you have not completed the objectives of the study and have not yet terminated contact with the participants, except for feedback of final results to participants), you must request an extension using the appropriate LU REB form. In all cases, please ensure that your research complies with Tri-Council Policy Statement (TCPS). Also please quote your REB file number on all future correspondence with the REB office.

Congratulations and best wishes in conducting your research.

Rosanna Langer, PHD, Chair, *Laurentian University Research Ethics Board*

Appendix D COVID-19 Research Study Recruitment Description

Mental Health of Northern Ontario Nurses Working During Covid-19 Study:

Invitation to Participate

The Mental Health of Registered Nurses and Registered Practical Nurses Working in Northern Ontario during the COVID-19 Global Pandemic research team (Laurentian University professors from the Centre of Research in Occupational Health and Safety (CROSH) Judith Horrigan, Behdin Nowrouzi, Basem Gohar, graduate student Disal Wickramasinghe, and Henrietta Van Hulle and Kim Slade from the Public Services Health and Safety Association) is conducting a study to explore the mental health of RNs and RPNs in northern Ontario working during the COVID-19 global pandemic. This study aims to understand the perspective and experiences of nurses; their support needs to cope with the COVID-19 crisis, and its consequences.

Nurses are eligible: If they are a practicing registered nurse, registered practical nurse, who work in any practice area including acute care, long term care, and community settings, during the Covid-19 pandemic that began March 11th 2020.

Participation in the study involves responding to online survey questions about:

1. Work and emotional demands, burnout, stress, job satisfaction, and
2. Indicating if conditions are better, worse or the same apart from Covid-19.

The expected outcomes of this study could identify coping strategies to manage stress, address the mental health needs of nurses, and assist healthcare organizations to develop policies for pandemic planning, programs, services, and practices designed specifically for a public health crisis such as the COVID-19 pandemic.

The survey will take approximately 15 to 25 minutes to complete and can be found at:

<https://rc.laurentian.ca/surveys/?s=A344RTEHWT>

CROSH website: <https://crosh.ca/mental-health-of-northern-ontario-nurses-working-during-covid-19-study-invitation-to-participate/>

The project is funded by CROSH. This study received ethics approval from Laurentian University Research Ethics Board. (REB# 6020811).

If you have any questions please contact

Dr. Judith Horrigan (jhorrigan@laurentian.ca 1-800-461-4030 ext. 3718) or

Dr. Behdin Nowrouzi-Kia, (bx_nowrouzi@laurentian.ca 1-416-946-3249)

Thank you in advance for considering to participate in this very important study!

Appendix E

Informed Consent

The mental health of registered nurses and registered practical nurses in northern Ontario during the COVID-19 global pandemic

Informed Consent

Study Title: The mental health of registered nurses and registered practical nurses in northern Ontario during the COVID-19 global pandemic

Co- Principle Investigators: Dr. Behdin Nowrouzi-Kia is an occupational therapist and an assistant professor in the Department of Occupational Science and Occupational Therapy in the Faculty of Medicine at the University of Toronto.

Dr. Judith Horrigan is a registered nurse and an associate professor at Laurentian University in the School of Nursing and the CROSH Occupational Health & Wellness Research Lead.

We are inviting you to participate in the study entitled examining the mental health and well-being of registered nurses and registered practical nurses in northern Ontario during the COVID-19 global pandemic.

Study Purpose

The overall objective of this proposed project is to identify the impact of the COVID-19 pandemic on the mental health and well-being of registered nurses and registered practical nurses in northern Ontario.

Eligibility

You are being asked to participate in this study because you are a registered nurse (RN) or registered practical nurses (RPN) working in Northern Ontario.

Voluntary nature of study

If you choose to participate, you will be asked complete an online questionnaire involving multiple choice questions with a rating scale. The questionnaire will ask you about your work environment and mental health. Your experiences as a health care professional are valuable and essential to this study and will be captured through the completion of the online questionnaire.

Risks

There are no medical risks involved in this study, but there is a possibility that some questions in the questionnaire may be uncomfortable for the participant to answer. Participants may choose to decline to answer questions or decline to participate at any time. Participants may also wish to contact the Canadian Mental Health Association (CMHA) Toll Free phone number: 1-800-875-6213.

Benefits

You may or may not benefit from participating in this study. Information learned from this study will allow the researchers to understand the demographic and work-related predictors of occupational stress and burnout of RNs and RPNs.

The study will highlight the importance of workplace mental health among registered nurses and registered practical nurses. The findings of this study will form the basis for a larger submission to include registered nurses and registered practical nurses across Ontario. Once the study is completed, the results will be submitted towards publication.

Participation

Your participation in this research study is voluntary. If you decide to participate, you do not have to answer any questions that you do not want to. You can refuse participate or withdraw from the study at any time and this will not impact or effect

your employment. Your professional work within your organization will not be altered or affected in any way by your decision to participate in, abstain or withdraw from this study.

Confidentiality

The information that we collect will be kept secure. The data will be summarized along with information obtained from other participants. If the results are published or presented at any scientific meeting, you will not be identified. All individual information will be kept confidential and will not be made available to the public. All the data will be collected and securely stored on RED Cap servers at Laurentian University. Afterwards, data will be destroyed in accordance with the Laurentian University research ethics board policies and protocols.

Tasks

Should you choose to participate in this study, please click the “Next” button.

Questions

For any questions about this study, please contact:

Research Ethics Officer, at the Laurentian University Research Office
telephone: 705-675-1151 ext. 3213, or 2436 or call toll free at 1-800-461-4030
email: ethics@laurentian.ca.

Dr. Behdin Nowrouzi-Kia, Ph.D., OT Reg (Ont.)
Assistant professor,
Department of Occupational Therapy and Occupational Science, Faculty of Medicine, U of T
E-mail: behdin.nowrouzi.kia@utoronto.ca
Telephone: 416-946-3249
Dr. Judith Horrigan, Ph.D., MScN, BScN, RN (Ont.)
Associate Professor,
School of Nursing, CROSH Occupational Health & Wellness Research Lead, Laurentian
University
E-mail: jhorrigan@laurentian.ca
Telephone: 705-675-1151 ext. 3718

I agree to participate in this study

Yes

No

Appendix F

Demographic Questionnaire and Copenhagen Psychological Questionnaire with modified section

Job Classification:

(a) Type of Nurses(s)	Other	(d) Areas of Practice
<input type="checkbox"/> RN	<input type="checkbox"/> Colleges/ Universities	<input type="checkbox"/> Acute Care
<input type="checkbox"/> RPN	<input type="checkbox"/> Correctional Facility	<input type="checkbox"/> Administration
b) Nursing Employee	<input type="checkbox"/> Government/ Association/ Regulatory Body/ Union	<input type="checkbox"/> Cancer care
<u>Hospital</u>	<input type="checkbox"/> Health-Related Business/ Industry	<input type="checkbox"/> Cardiac care
<input type="checkbox"/> Acute care hospital	<input type="checkbox"/> Industry (not Health Related)	<input type="checkbox"/> Case Management
<input type="checkbox"/> Addiction & Mental Health Centre/Psychiatric Hospital	<input type="checkbox"/> Schools	<input type="checkbox"/> Chronic Disease Prevention/ Management
<input type="checkbox"/> Complex Continuing care	<input type="checkbox"/> Spa	<input type="checkbox"/> Complex Continuing Care
<input type="checkbox"/> Rehabilitation hospital	<input type="checkbox"/> Telephone Health Advisory Services	<input type="checkbox"/> Critical care
<input type="checkbox"/> Other hospital	<input type="checkbox"/> Other	<input type="checkbox"/> Diabetes Care
<u>Community</u>	(c) Positions in Nursing	<input type="checkbox"/> Education
<input type="checkbox"/> Blood Transfusion Centre	<input type="checkbox"/> Advanced Practice Nurses- CNS	<input type="checkbox"/> Emergency
<input type="checkbox"/> Cancer Centre	<input type="checkbox"/> Advanced Practice Nurse- Other	<input type="checkbox"/> Foot Care
<input type="checkbox"/> Children Treatment Centre (CTC)	<input type="checkbox"/> Case Manager	<input type="checkbox"/> Geriatrics
<input type="checkbox"/> Client's Environment	<input type="checkbox"/> Client Educator	<input type="checkbox"/> Infection Prevention/ Control
<input type="checkbox"/> Community Care Access Centre (CCAC)	<input type="checkbox"/> Consultant	<input type="checkbox"/> Informatics
<input type="checkbox"/> Community Health Centre (CHC)	<input type="checkbox"/> Educator/Faculty	<input type="checkbox"/> Maternal/ Newborn
<input type="checkbox"/> Community Mental Health Program	<input type="checkbox"/> Infection Control Nurse	<input type="checkbox"/> Medicine
<input type="checkbox"/> Diabetes Education Centre (DEC)	<input type="checkbox"/> Informatics Analyst	<input type="checkbox"/> Mental Health/ Psychiatric/ Addiction
<input type="checkbox"/> Family Health Team (FHT)	<input type="checkbox"/> Middle Manager	<input type="checkbox"/> Nephrology
<input type="checkbox"/> Hospice	<input type="checkbox"/> Nurse Practitioner (NP)	<input type="checkbox"/> Occupational Health
<input type="checkbox"/> Nurse Practitioner led clinic	<input type="checkbox"/> Occupational Health Nurse	<input type="checkbox"/> Palliative Care
<input type="checkbox"/> Nursing/Staffing Agency	<input type="checkbox"/> Office Nurse	<input type="checkbox"/> Perioperative Care
<input type="checkbox"/> Physician's office/ Family Practice Unit	<input type="checkbox"/> Outpost Nurse	<input type="checkbox"/> Policy

<input type="checkbox"/> Public Health Unit/ Department	<input type="checkbox"/> Policy Analyst	<input type="checkbox"/> Primary Care
<input type="checkbox"/> Remote Nursing Station	<input type="checkbox"/> Public Health Nurse	<input type="checkbox"/> Public Health
<input type="checkbox"/> Other community	<input type="checkbox"/> Researcher	<input type="checkbox"/> Rehabilitation
	<input type="checkbox"/> Sales/ Marketing Representative	<input type="checkbox"/> Sales
	<input type="checkbox"/> Senior Manager	<input type="checkbox"/> Surgery
	<input type="checkbox"/> Staff Nurse	<input type="checkbox"/> Telehealth Services
	<input type="checkbox"/> Visiting Nurse	<input type="checkbox"/> Other
	<input type="checkbox"/> Volunteer Nurse	
	<input type="checkbox"/> Other	

Gender:	Male Female Trans Other	
Age in Years :		
Marital Status:	Single Married/ Common Law/ Committed Relationship Separated/ Divorced Widowed	
Ethnicity: Please check all that apply	<input type="checkbox"/> African/ Black	<input type="checkbox"/> Japanese
	<input type="checkbox"/> Caucasian/ White	<input type="checkbox"/> Korean
	<input type="checkbox"/> Chinese	<input type="checkbox"/> Latin American
	<input type="checkbox"/> Eastern European	<input type="checkbox"/> Middle Eastern
	<input type="checkbox"/> Filipino	<input type="checkbox"/> Southeastern Asia
	<input type="checkbox"/> Indigenous	<input type="checkbox"/> West Asia
	<input type="checkbox"/> Western European	<input type="checkbox"/> Other
How many children living/ dependents living in your household?		
Do you require accommodations due to a physical or psychological disability?	Yes No Choose not to answer	
My employer's COVID-19 guidelines and protocols are taken seriously	Always Most of the time Half of the time Sometimes Never	
What best describes your position at work? (Check all that apply)	Full-time	Part-time
	Casual	Contract
	Seasonal	Work for temp agency
	Other	
have trust in my employers to ensure my safety	Always Most of the time Half of the time	

	Sometimes Never		
What is the highest educational degree, certificate or diploma you have obtained?	<input type="checkbox"/> Some high school or vocational course	<input type="checkbox"/> High school graduate	<input type="checkbox"/> Trade certificate/ diploma from vocational school or apprenticeship training
	<input type="checkbox"/> Community college graduate	<input type="checkbox"/> University certificate below bachelor's level	<input type="checkbox"/> University bachelor's degree
	<input type="checkbox"/> University graduate master's degree	<input type="checkbox"/> University graduate PhD degree	<input type="checkbox"/> Other

For the following questions, please answer the 1 st question based on current situation and the follow-up question pre-COVID-19.				
Do you get behind in your work?				Always (100) Often (75) Sometimes (50) Seldom (25) Never/ hardly ever (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
How often do you do not have time to complete all you work tasks?				Always (100) Often (75) Sometimes (50) Seldom (25) Never/ hardly ever (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Do you have to work very fast?				Always (100) Often (75) Sometimes (50) Seldom (25) Never/ hardly ever (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Do you work at a high pace throughout the day?				Always (100) Often (75) Sometimes (50) Seldom (25)

				Never/ hardly ever (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Do you have to deal with other people's personal problems as part of your work?				Always (100) Often (75) Sometimes (50) Seldom (25) Never/ hardly ever (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Is your work emotionally demanding?				To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Do you have a large degree of control of influence on the decisions concerning your work?				Always (100) Often (75) Sometimes (50) Seldom (25) Never/ hardly ever (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Can you influence the amount of work assigned to you?				Always (100) Often (75) Sometimes (50) Seldom (25) Never/ hardly ever (0)
Do you have the possibility of learning new things through your work?				To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Can you use skills or expertise in your work?				To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Is your work meaningful?				To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than

Do you feel that the work you do is important?					To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?					
Much better than	Better than	The same as	Worse than	Much worse than	
At your place of work, are you informed well in advance concerning for example important decisions, changes, or plans for the future?					To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?					
Much better than	Better than	The same as	Worse than	Much worse than	
Do you receive all the information in order to do your work well?					To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Is your work recognized and appreciated by the management?					To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?					
Much better than	Better than	The same as	Worse than	Much worse than	
Are you treated fairly at your workplace?					To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?					
Much better than	Better than	The same as	Worse than	Much worse than	
Does your work have clear objectives?					To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?					
Much better than	Better than	The same as	Worse than	Much worse than	
Do you know exactly what is expected of you at work?					To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?					

Much better than	Better than	The same as	Worse than	Much worse than
Are contradictory demands placed on you at work?				To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Do you sometimes have to do things which ought to have been done in a different way?				To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
To what extent would you say that your immediate superior is good at work planning?				To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
To what extent would you say that your immediate superior is good at work planning?				To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
How often could you get help and support from your colleagues, if needed?				Always (100) Often (75) Sometimes (50) Seldom (25) Never/ hardly ever (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
How often is your nearest supervisor willing to listen to your problems at work?				Always (100) Often (75) Sometimes (50) Seldom (25) Never/ hardly ever (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
How often to you get help and support from your nearest supervisor?				Always (100) Often (75) Sometimes (50)

			Seldom (25) Never/ hardly ever (0)
Since COVID-19, my current response rate is before?			
Much better than	Better than	The same as	Worse than
Is there a good atmosphere between you and your colleagues?			Always (100) Often (75) Sometimes (50) Seldom (25) Never/ hardly ever (0)
Since COVID-19, my current response rate is before?			
Much better than	Better than	The same as	Worse than
Are you worried about becoming unemployed?			Always (100) Often (75) Sometimes (50) Seldom (25) Never/ hardly ever (0)
Since COVID-19, my current response rate is before?			
Much better than	Better than	The same as	Worse than
Are you worried about it being difficult for you to find another job if you became unemployed?			To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?			
Much better than	Better than	The same as	Worse than
Are you worried about being transferred to another job against your will?			To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?			
Much better than	Better than	The same as	Worse than
Does the management trust the employees to do their work well?			To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?			
Much better than	Better than	The same as	Worse than
Can the employees trust the information that comes from the management?			To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?			
Much better than	Better than	The same as	Worse than
			Much worse than

Are conflicts resolved in a fair way?					To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?					
Much better than	Better than	The same as	Worse than	Much worse than	
Is the work distributed fairly?					To a very large extent (100) To a large extent (75) Somewhat (50) To a small extent (25) To a very small extent (0)
Since COVID-19, my current response rate is before?					
Much better than	Better than	The same as	Worse than	Much worse than	
How well are environmental conditions managed (air quality, temperature, lighting, noise, workstation ergonomics)?					Well designed/ controlled Present but not usually an issue/ concern Exposures cause concern Exposures cause annoyance Exposures interfere with ability to get job done Not applicable
Since COVID-19, my current response rate is before?					
Much better than	Better than	The same as	Worse than	Much worse than	
How well are safety concerns managed (slip/trip/falls, toxic chemical, infectious diseases, Wi-Fi, radiation, working alone)?					Well designed/ controlled Present but not usually an issue/ concern Exposures cause concern Exposures cause annoyance Exposures interfere with ability to get job done Not applicable
Since COVID-19, my current response rate is before?					
Much better than	Better than	The same as	Worse than	Much worse than	
Regarding your work in general. How pleased are you with your job as a whole, everything taken into consideration?					Very satisfied (100) Satisfied (75) Neither/ Nor (50) Unsatisfied (25) Very unsatisfied (0)
Since COVID-19, my current response rate is before?					
Much better than	Better than	The same as	Worse than	Much worse than	
Do you feel that your work drains so much of your energy that it has a negative effect on your private life?					Yes, certainly Yes, to a certain degree Yes, but only very little No, not at all
Since COVID-19, my current response rate is before?					

Much better than	Better than	The same as	Worse than	Much worse than
Do you feel that your work drains so much of your time that it has a negative effect on your private life?				Yes, certainly Yes, to a certain degree Yes, but only very little No, not at all
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Are there times when you need to be at work and at home at the same time?				Yes, certainly Yes, to a certain degree Yes, but only very little No, not at all
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
In general, would you say your health is:				Excellent (100) Very good (75) Good (50) Fair (25) Poor (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
How often have you felt worn out?				All the time (100) A large part of the time (75) Part of the time (50) Small part of the time (25) Not at all (0)
Since COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
How often have you been emotionally exhausted?				All the time (100) A large part of the time (75) Part of the time (50) Small part of the time (25) Not at all (0)
COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
How often have you been stressed?				All the time (100) A large part of the time (75) Part of the time (50) Small part of the time (25) Not at all (0)
COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
How often have you been irritable?				All the time (100) A large part of the time (75) Part of the time (50) Small part of the time (25) Not at all (0)

COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
At your workplace during the last 12 months, have you been exposed to undesired sexual attention?			No Yes, a few times Yes, monthly Yes, weekly Yes, daily	
COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
At your workplace during the last 12 months, have you been exposed to threats of violence?			No Yes, a few times Yes, monthly Yes, weekly Yes, daily	
COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
At your workplace during the last 12 months, have you been exposed to physical violence?			No Yes, a few times Yes, monthly Yes, weekly Yes, daily	
COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
At your workplace during the last 12 months, have you been exposed to bullying? (*Bullying means that a person repeatedly is exposed to unpleasant or dreading treatment, and the person finds it difficult to defend him or herself)			No Yes, a few times Yes, monthly Yes, weekly Yes, daily	
This questionnaire asks about difficulties due to health conditions. Health conditions include diseases or illnesses, other health problems that may be short or long lasting, injuries, mental or emotional problems, and problems with alcohol or drugs. Think back over the last 30 days and answer these questions, thinking about how much difficulty you had doing the following activities. For each question, please circle one response.				
Standing for long periods such as 30 minutes?			No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do	
COVID-19, my current response rate is before?				

Much better than	Better than	The same as	Worse than	Much worse than
Taking care of household responsibilities				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do
COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Learning a new task, for example, learning how to get to a new place?				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do
COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
How much of a problem did you have joining in community activities (for example, festivities, religious or other activities) in the same way as anyone else can?				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do
COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
How much have you been emotionally affected by your health problems?				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do
COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Concentrating on doing something for ten minutes?				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do
COVID-19, my current response rate is before?				
Much better than	Better than	The same as	Worse than	Much worse than
Walking a long distance such as a kilometre (or equivalent)?				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty

				Extreme Difficulty or Cannot Do
COVID-19, my current response rate is _____ before?				
Much better than	Better than	The same as	Worse than	Much worse than
Washing your whole body?				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do
COVID-19, my current response rate is _____ before?				
Much better than	Better than	The same as	Worse than	Much worse than
Getting dressed				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do
COVID-19, my current response rate is _____ before?				
Much better than	Better than	The same as	Worse than	Much worse than
Dealing with people you do not know?				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do
COVID-19, my current response rate is _____ before?				
Much better than	Better than	The same as	Worse than	Much worse than
Maintaining a friendship?				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do
COVID-19, my current response rate is _____ before?				
Much better than	Better than	The same as	Worse than	Much worse than
Your day-to-day work?				No Difficulty Mild Difficulty Moderate Difficulty Severe Difficulty Extreme Difficulty or Cannot Do
COVID-19, my current response rate is _____ before?				
Much better than	Better than	The same as	Worse than	Much worse than

Overall, in the past 30 days, how many days were these difficulties present?	
In the past 30 days, for how many days were you totally unable to carry out your usual activities or work because of any health condition?	
In the past 30 days, not counting the days you were totally unable, for how many days did you cut back or reduce your usual activities or work because of any health condition?	
<p>These questions were developed by Dianne Martin, CEO and Annette Weeres, Director - Professional Practice, Research and Innovation, WeRPN (formerly Registered Practical Nurses Association of Ontario).</p> <p>To assist, I attempted to define moral distress from the literature. (N. Snobelen)</p> <p>The concept of moral distress is defined as painful feelings and/or the psychologic disequilibrium that occurs when a nurse is conscious of the morally appropriate action a situation requires but cannot carry out that action because of institutionalized obstacles. These obstacles can include lack of time, supervisory reluctance, an inhibiting medical power structure, institution policy, or legal constraints. Painful feelings can include frustration, anger and anxiety when faced with institutional obstacles and interpersonal conflict about values. (Jameson, 1993)</p>	
<p>1. Please rank the following experiences that caused you moral distress during COVID-19. Rank 1 to 4 with 1 equal to most moral distress.</p>	<p>_____ Compromising or the inability to maintain personal safety</p> <p>_____ Social isolation of residents/patients with restricted visitor policies</p> <p>_____ Concern for co-workers, i.e. PSWs</p> <p>_____ Inability to manage safe, quality care due to increased workload</p>
<p>1. What changed most dramatically in your life with the pandemic?</p>	
<p>Reference: Jameton A. Dilemmas of moral distress: moral responsibility and nursing practice. WHONNS Clin Issues Perinatal Wom Health Nurs 1993; 4: 542-51.</p> <p style="text-align: center;">Thank you very much for completing this survey!!</p>	

Appendix G

Transcription Conventions

Symbol	Meaning
P	-participant
I	-interviewer
/	Used to indicate phrase boundaries
.	A one second pause between utterances
//	Indicates the beginning of an overlap in speaking turns
]	Indicates the beginning of an overlap in speaking turns
[-h]	-In breaths
[h]	-Out breaths
CAPITAL LETTERS	Marks an increase in the voice tone relative to previous talk
[italics]	Gestures used by the participants and explanatory information are included in italics in square brackets
Comma (,)	Use to indicate a short pause of about 1-3 sec.
Ellipses (...)	Use to indicate when the participant is trailing off or has a longer pause (3+ seconds) at the beginning of a sentence
Em dash (—)	Use to indicate change in the speech, like repeating the same word, or abruptly change the language
Underline (<u> </u>)	Used to emphasize certain words.
Brackets []	Used to indicate words added to the transcription that the interviewee did not mention, to explain certain abbreviations, or translate a word in another language into English.
Quotes (“ ”)	Used to demonstrate what someone said. Do not use when the person was only thinking of something, but didn't say anything
Dash (-)	Use to indicate when the participant is trailing off or has a longer pause (3+ seconds) at the beginning of a sentence.

(Adapted from Bailey & Tilley, 2002, p. 577; Rubin & Rubin, 2005, p. 9)

