11-2-2023 1:00 PM

Exploring Level II NICU Case Study Research Challenges: Embracing the Proposal Journey, Engaging in Retrospective Pragmatic Reflection on Challenges, and Enhancing Research Within Graduate Education and the Profession of Massage Therapy

Amanda R. Winter, *Western University*

Supervisor: Connelly, Denise M., *The University of Western Ontario*
Co-Supervisor: Moodie, Sheila T. F., *The University of Western Ontario*
Co-Supervisor: Baskwill, Amanda, *Loyalist College*
A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Health and Rehabilitation Sciences

Abstract

Background

Infants born preterm and low birth weight face health risks; studies demonstrate massage therapy (MT) promotes weight gain and earlier hospital discharge. A gap remains in understanding the role of massage in preterm care within Canada.

Research Methods and Theoretical Orientation – Part A

Case study methodology is proposed to examine the nature of MT as a healthcare intervention within an Ontario Level II Neonatal Intensive Care Unit. Constrained by a Master's program's two-year time limit and contextual challenges, the project could not secure support.

Research Methods and Theoretical Orientation – Part B

Introducing a retrospective pragmatic reflective approach, Part B examines factors believed to have contributed to the project's outcome.

Results and Discussion

Retrospective pragmatic reflection enhances understanding of case study research considerations in complex organizations, offering insights for future researchers. Discussions include professional development and building research opportunities for TCAM providers.

Conclusion

This thesis advances knowledge on the use of case study research for MT in Ontario's neonatal units providing valuable considerations for future research.

Keywords: massage therapy, Neonatal Intensive Care Unit, case study methodology, Consolidated Framework for Implementation Research, preterm infants, Gibb's Reflective Cycle, Retrospective Pragmatic Reflection

Summary for Lay Audience

Infants born before 38 weeks (or preterm infants) of pregnancy may be at risk of several health problems. These problems might affect how much weight they put on. Long hospital stays for preterm infants are expensive for the healthcare system. Some research shows that massage therapy for preterm infants can help them gain weight safely so they can leave the hospital earlier.

This study aims to investigate infant massage therapy as an option that could be used in Ontario neonatal intensive care units (NICU) for preterm infant care. The thesis will discuss why massage is helpful for preterm infants and then propose how we might carry out research to investigate how infant massage therapy is currently being implemented in an Ontario NICU.

The study was not able to be conducted as planned and the reasons why this occurred will be presented. A reflection will be included in the thesis that examines what might have been done in advance to be able to conduct the study. This will help other researchers learn how to design a study in the future so that it will be conducted successfully.

Dedication

To my children,

May you be brave enough to do what scares you most,

and be humble enough to accept the challenges that life throws your way.

To my husband,

Your continued support down every road of this journey has made this possible. Thank you from the bottom of my heart.

To my students,

Thank you for being a continual stream of inspiration that I have the distinct pleasure of teaching.

Acknowledgments

First, I would like to thank my supervisor, Dr. Denise Connelly, for your guidance, support, understanding and advice throughout my research and my time as a graduate student. I met you early on in my academic path, and you were eager to support the dream I had to bring my research to fruition. The calmness and encouragement you brought to me throughout my journey was welcoming and kept me grounded. You gently pushed me to keep moving forward when things seemed to stall yet allowed me space to take care of myself. I am forever grateful that our paths have crossed and for your unwavering support along the way.

Second, I would like to thank the members of my thesis committee, Dr. Sheila Moodie and Dr. Amanda Baskwill. Your guidance, mentorship, and contributions along the way were pivotal to the success of this thesis. I especially would like to thank Dr. Amanda Baskwill for her expert guidance related to the field of massage therapy and for her generosity of time in guiding and mentoring me to become a confident professional.

Third, I would like to thank my colleagues at Fanshawe College who helped make this dream a reality. To the coordinator of the massage therapy program, Gabriel Flamminio, thank you for your support, encouragement and understanding of the demands that come along with being a graduate student and full-time professional. Your patience and flexibility truly made this possible, and I am grateful. To Ian Butcher, who gave me the encouragement to realize the potential of my research early in the process and to pursue a Master's degree. To Laraine Craig, who supported me in my journey from the beginning to the end and helped me believe that I could do it.

Additionally, I would like to extend my utmost gratitude to my family. To my husband, Corey, who stood by me and believed in me when things got tough, made many family dinners while I was busy working away, and made sure that I took care of myself when I needed it most. You are the true meaning of a supportive partner! To my beautiful daughter, Payton, for bringing me countless cups of tea, writing encouraging notes, helping with your brothers, and showing so much maturity and understanding of the demands placed upon me over the last 2 years. To my two wonderful sons, Zachary, and Matthew, thank you for the joy you bring to my life and for your patience and understanding; I know it wasn't always easy. To my parents, Bob, and Laurie, who are my forever supporters, mentors, and cheerleaders when it comes to pursuing my goals. You taught me from a young age to be curious, resilient, passionate, and motivated in life and I can only hope that these attributes will be passed on to my own children. The encouraging texts, phone calls, and help with the kids has not gone unnoticed.

To all my friends and extended family, thank you for your support, encouragement and understanding during this journey.

Acknowledgement of Funding Support

Although funding was awarded through an internal Fanshawe Research Fund grant to support expenses such as data management software, the production of recruitment material, and the dissemination of research, it has not been utilized since the transition from a proposal at Fanshawe College to a thesis at Western University. This is due to the time constraints of a two-year Master's degree program and encountering challenges related to garnering the necessary support from the proposed study sites. As a component of funding use, ethics approval by Fanshawe's Research Ethics Board (REB)

was required (Appendix A). I would like to express my gratitude to Fanshawe College for their support during this research project.

Table of Contents

List of Tables

List of Figures

List of Appendices

List of Abbreviations

BPS - Biopsychosocial
CAM – Complementary and Alternative Medicine
CAMEO – Complementary Medicine Education and Outcomes
CANO – Canadian Association of Nurses in Oncology
CFIR – Consolidated Framework of Implementation Research
CHC – Community Health Centre
CMTO – College of Massage Therapists of Ontario
CPBF – Canadian Premature Babies Foundation
FCC – Family Centered Care
FHT – Family Healthcare Team
FIC – Family Integrated Care
HCP – Healthcare Professional
IM – Integrative Medicine
IRB – Institutional Review Board
MT – Massage Therapy
MT-SIG – Massage Therapy – Special Interest Group
NICU – Neonatal Intensive Care Unit
OHIP – Ontario Health Insurance Plan
OICC – Ottawa Integrative Cancer Centre
OUAC – Ontario Universities Application Centre
PBRN – Practice Based Research Network
PHIPA – Personal Health Information Protection Act
PI – Principal Investigator
QOL – Quality of Life
QUERI – Quality Enhancement Research Institute
REB – Research Ethics Board
REC -Research Ethics Committee
RHPA – Regulated Health Professions Act
RMTAO – Registered Massage Therapist Association of Ontario
TA – Thematic Analysis
TCAM – Traditional Complementary and Alternative Medicine
TRI – Traditional Research Intensive
TRI-CAM – Traditional Research Intensive – Complementary and Alternative Medicine
VHA – Veterans Health Administration
WTCHS – West Toronto Community Health Services

Preface

This thesis describes the experience of a research project intended to study the nature of massage therapy for preterm low birth weight infants. Rather than reporting the results from a completed observational study using case study methodology, new learnings will be described and discussed that focus on barriers and facilitators to conducting research in a complex healthcare setting, that is, a Level 2 Neonatal Intensive Care Unit (NICU). These learnings align with moving forward the priorities of the Canadian Institutes of Health Research (CIHR), the Canadian Premature Babies Foundation (CPBF), and the National Research Priority Setting Summit from 2020 specific to massage therapy and Canadians' healthcare needs. These priorities focus on engaging the patients, caregivers, and families to identify their priorities (CIHR, 2021), enhancing support for research and quality improvement (CPBF, 2014), and reducing healthcare costs. Chapter one and Chapter two of this thesis are contextualized within a prospective research project rather than one that was completed. Consequently, the language used in these chapters adopts a future-oriented tense, implying that the research has yet to attain results, as opposed to using a past-tense perspective. To maintain confidentiality of the two sites that declined to participate in the research, organization names have been removed and replaced with Hospital 1 and Hospital 2. Hospital names have been redacted from Appendices and replaced with "XXXXXX." The term gatekeeper is used throughout the thesis to refer to "the individuals, groups, and organizations that act as intermediaries between researchers and participants (Clark, 2011, p. 486; De Laine, 2000).

Grounded in case study methodology, the first two chapters, Literature Review and Methods, will describe a proposed study with the research purpose of understanding the nature of massage therapy by healthcare providers and caregivers of preterm infants within a Level II NICU in Ontario. The methods section will be divided into two sections; Part A and Part B. Part A will discuss the rationale for research about infant massage therapy, researcher positionality, and the proposed study including methodology, data management, and methods regarding case study research. Part B addresses the pivot made from the planned research project described in Part A. The collection of data for the planned project was not possible, and the decision was made to pivot to produce a reflective piece of work. Part B provides a structured reflection on the experience of the researcher and highlights the resultant learnings for what might be considered by other graduate students who are considering similar research. Part B will outline the objectives for the reflection, retrospective pragmatic reflection methodology, and application of the frameworks employed in executing the retrospective pragmatic reflection. Chapter Three will combine retrospective reflection of the researcher's experience with Gibb's Reflective Cycle (1988) and the Consolidated Framework for Implementation Research (CFIR) to gain a more complete understanding of considerations for case study research in complex organizations. The alignment will inform action steps to avoid similar challenges in future research endeavours. Chapter Four will include a discussion about the use of reflection as a tool in research within healthcare literature, the learnings of the researcher from the reflections, as well as professional development and research opportunities for Traditional Complementary and Alternative Medicine (TCAM) providers. The fifth chapter will provide a summary of

learning through reflection gained by the researcher as well as a statement of incorporating learnings for future research. Chapter six will discuss future research opportunities.

Chapter One

"Research is to see what everybody else has seen, and to think what nobody else has thought." – Albert Szent-Gyorgyi

Massage therapy leads to increased weight gain and shortened hospital stays among low birth weight (<2500g) preterm infants within Neonatal Intensive Care Units (NICUs) and is recognized as a global healthcare intervention; however, researchers have yet to understand or explore the acceptance of massage therapy as a viable healthcare option by interprofessional teams and families within a Canadian context.

Literature Review

Preterm birth has a more significant impact on the Canadian healthcare system than any other chronic condition, with health consequences extending beyond infancy and childhood (Lim et al., 2009; Das & Sysyn, 2004; Saigal & Doyle, 2008). In fact, most preterm infants live more than 70 years (Shah et al., 2018). Preterm births cost the Canadian healthcare system over $8 billion per year (Lim et al., 2009), with lengthy hospital stays contributing significantly to the financial burden of the healthcare system. According to the most recent national statistics (Canadian Institute for Health Information, 2020), the rate of preterm births in Ontario has grown to 8.2% in 2018-2019, up from 7.9% of all live births in 2014-2015. Further to this, infants <2500g make up 7% of all live births across Ontario.

Studies of massage therapy with preterm infants have shown improved weight gain in low birth weight infants (<2500g) leading to earlier hospital discharge compared to control groups that received no massage (Field et al., 2010). A 2017 systematic review

concluded that a “clear benefit is obtained from the administration of massage therapy in hospitalised preterm infants, a finding which should encourage the more generalised use of [massage therapy] in NICU (Neonatal Intensive Care Unit) clinical practice” (Álvarez et al., 2017, p. 119). More recently, Mokaberian et al. (2022) report that results from a review and meta-analysis of controlled clinical trials regarding the effects of massage therapy on the weight increase in premature neonates yielded positive results. These results show that of 15 experiments on 697 participants, massage therapy can add an average of 5.07g to the neonates' weight daily, with moderate pressure massage resulting in about 5.6g/day (Lu et al., 2020). The positive factors from massage therapy that may underlie the increased weight gain in preterm infants include “increased vagal activity, increased gastric activity and increased serum insulin levels” (Álvarez et al., 2017, p. 119). Similarly, Field & Diego (2008) found increased gastric motility in a study of weight gain in preterm infants secondary to increased vagal activity following the stimulation of pressure receptors during massage therapy. Vagal stimulation has also been shown to release food absorption hormones (i.e., insulin) and digestive hormones (i.e., gastrin) (Chang et al.,2003; Field & Diego, 2008; Rozman, Bunc, & Zorko, 2004). An abstract for an article written in Swedish (Uvnas-Moberg, 2004) supports the idea by others that since massage stimulates pressure receptors and increases vagal stimulation, it will also promote the release of both food absorption (insulin) and digestive hormones (Field & Diego, 2008; Marchini, Lagercrantz, Feuerberg, Winberg, & Uvnas-Moberg, 1987). In contrast, ‘minimal touch’ environments, which can be found in some neonatal intensive care units, can lead to deprivation of tactile stimulation (Álvarez et al., 2017). Not only does massage prove to be beneficial in terms of weight gain by

increasing vagal activity, increasing gastric activity, and increasing serum insulin levels (Álvarez et al., 2017), it is also an intervention that can be adopted by caregivers and healthcare practitioners. Massage is a non-pharmacological option with minimal risk and offers the opportunity to be integrated into daily care routines and allow preterm infants to return home sooner.

Since the early 1990s, independent research groups have examined infant massage effects in many places worldwide, including Japan, Taiwan, Korea, Thailand, China, England, the Philippines, Israel, and the United States (Field et al., 2004). Given the evidence that supports the use of massage therapy within NICUs across the globe, no studies referencing massage therapy as a formal healthcare intervention within interprofessional teams in NICU settings within Canada were found.

Several healthcare professionals make up interprofessional healthcare teams within a NICU setting, including physicians, nurses, occupational therapists, physiotherapists, respiratory therapists, and registered dieticians. Family members, or caregivers, of preterm infants, are included in this circle of care with a vital role in the provision of care and decision-making for their infants. An example of this is the Family Integrated Care (FICARE) model adopted at London Health Science Centre (LHSC) in London, Ontario. FICARE is "a model of care where parents are viewed as an integral part of the NICU team in providing daily care for their baby…respect[ing] [their] choices, values, beliefs, and cultural backgrounds (LHSC, 2022). Similarly, Family Centered Care (FCC) includes parental involvement as the foundation to providing FCC (Gómez-Cantarino et al., 2020). As such, models like this support the need to include

families and caregivers when it comes to exploring research and interventions in this context.

Understanding Massage Therapy

Registered Massage Therapy is a regulated health profession in five Canadian provinces, with the largest number of Registered Massage Therapists (RMTs) residing in Ontario (College of Massage Therapists of Ontario, 2021). The scope of practice for a massage therapist can be described as "the assessment of the soft tissue and joints of the body and the treatment and prevention of physical dysfunction and pain of the soft tissues and joints by manipulation to develop, maintain, rehabilitate or augment physical function, or relieve pain" (Massage Therapy Act, 1991, c. 27, s. 3). Registered massage therapy training consists of attending a two to three-year diploma program from a recognized massage therapy school. Following successful completion of education, students must successfully complete a competency exam to be eligible to practice as a registered massage therapist (CMTO, 2023). RMTs have the knowledge and skills to educate, train and perform massage therapy for various conditions and people.

Transitioning from the understanding of massage therapy, it became evident that as information was collected regarding gatekeeper relationships in the context of massage therapy research, researchers engaged with massage therapy in a more encompassing way. Massage therapy was broadly seen as existing in the realm of Traditional, Complementary and Alternative Medicine (TCAM). Thus, utilizing the term TCAM throughout this thesis acknowledges massage therapy's inclusion within these practices and enables the inclusion of interprofessional insights pertaining to TCAM found within the literature.

Importance of Research for Infant Massage Therapy as an Intervention for Preterm Infants

Given the changing landscape in Canadian healthcare in response to economic pressures to reduce healthcare costs (Leonard, 2013; Dryden et al., 2014), combined with evidence indicating that shorter hospital stays are experienced by preterm infants receiving massage therapy (Field et al., 2010), it becomes evident that this intervention should be explored within the Canadian context. Massage therapy has gained acceptance as a healthcare practice in the general population over the last few decades; however, infant massage therapy remains a relatively new care modality/treatment (Juneau et al., 2015). A review of research literature focused on this topic revealed a knowledge and practice gap within the Canadian context. Acquiring new knowledge will lead to a deeper understanding of the use of massage therapy for the care of preterm infants within a NICU setting.

In a recent environmental scan, the Canadian Premature Babies Foundation (CPBF) (2014) recommended an improved focus on educating and training staff to empower parents to provide care, as well as the inclusion of family perspectives when it comes to hospital staff training. It was also concluded by CPBF that "hospitals and research institutions [should] enhance support for research and quality improvement" (p.3) and that "this could include additional research funding, [and] financial and staff support for quality improvement activities" (pg.3). Founded in 2012, the Canadian Premature Babies Foundation (CPBF) is a prominent, charitable advocacy group in Canada that supports preterm infants and their families both within and outside hospital settings. CPBF has participated in or contributed to over 60 research projects globally which have led to significant advances in preterm healthcare. My research aim is to

understand the nature of massage therapy, not only by members of healthcare teams, but also by family members navigating their way through the early weeks and months of caring for their preterm infant. In this context, nature can be understood in terms of how massage is utilized, perceived and thought about in the context of a Level II NICU. According to Critical Care Services Ontario (CCSO) (2022), Level II NICUs provide care to moderately ill infants born between 30-34 weeks' gestation and have a birth weight between 1200g and over 1800g. Multiple sources of data (i.e., interviews, observation and relevant documents) are studied together to form an understanding of its collective function. If we can learn more about how massage is used and thought about in the NICU context, it may open possibilities for families to contribute to care through massage. It may also be possible to determine the likelihood of a Level II NICU being on board as a project champion for massage therapy. Furthermore, this research may help establish the role that massage therapists might play in achieving these aims, whether it is to support healthcare professional training or to support the families' needs. This is also in line with Family Integrated Care and Family Centered Care models where parents are an integral part of the care provided to infants.

Patient-oriented research has been identified as a priority by the Institute of Human Development, Child, and Youth Health (IHDCYH) within the Canadian Institute of Health Research (CIHR), Canada's federal funding agency for health research. Patient-oriented research rests on engaging the patients, caregivers, and families to identify their priorities (CIHR, 2021). In the case of NICU patients, caregivers and family members are central to making decisions for their children. This research adopts a patient-oriented perspective by engaging families to speak about what they think about massage therapy

for their preterm infants and how they perceive massage therapy fitting into the NICU setting.

Several research priorities within the context of preterm infants, child and youth health, and massage therapy have been well documented and can be achieved through acquiring new knowledge in this innovative approach to understanding the current situation surrounding massage within Ontario NICUs (Álvarez et al., 2017; CPBF, 2014; CIHR, 2021). It is through my research that I aim to understand the nature of massage therapy in a Level II NICU. Additionally, I aim to determine the likelihood of a Level II NICU participating in upcoming studies concerning massage therapy and uncover ways an RMT could fill potential gaps in educating about the benefits of massage as an intervention within the NICU. This could enhance massage therapy relationships within interprofessional teams and influence outcomes for preterm low birth weight infants.

Statement of Research

There is a gap in the literature examining massage as a healthcare intervention within NICUs in the Canadian context. The purpose of the research project is to conduct a prospective case study to assess the nature of massage therapy by healthcare providers and caregivers of preterm infants within a Level II NICU in Ontario. Three major questions will be answered with the objective of improving our understanding of the policies, perceptions, and use of massage (touch) for pre-term infants in NICUs within Southwestern Ontario:

1. Is massage incorporated into daily care routines or as a healthcare intervention for preterm infants in a Level II NICU?

2. What does adherence, education, support, and training of massage look like within a Level II NICU?
3. What role could RMTs have for preterm infants in the context of a Level II NICU?

Chapter Two – Methods

"Research means that you don't know, but are willing to find out"

- Charles F. Kettering

Part A - Methods

Part A of this chapter will detail how case study methodology was intended to be used to study the nature of massage therapy within a Level II NICU in Ontario through interviews, observation and document analysis. The researcher's role and positionality to anchor the methodological approach will also be described here. Planned participant recruitment and data collection methods will be outlined.

A description of the intended use of Braun and Clarke's (2021) reflexive thematic analysis and a thorough examination of Merriam's (2009) quality considerations proposed for this research comprises the data analysis of part A. This section further addresses the organization and management of data alongside ethical protocols governing interviews, observations, and informed consent.

Qualitative Case Study Methodology

A qualitative case study approach is proposed for this study. According to Merriam (2009), case studies search for meaning and understanding like other forms of qualitative research. It involves the researcher being the primary investigator who collects and analyzes data and employs an inductive strategy to describe the case richly. Additionally, case study allows the researcher to isolate what will be studied. In my research, the case is the Level II NICU, and the unit of analysis is massage within the past 12 months. Case study also boasts three distinctive features including: particularistic (it focuses on a particular situation, event, program, or phenomenon), descriptive (it

yields a rich, thick description of the phenomenon under study), and heuristic (it illuminates the reader's understanding of phenomenon under study or how things are the way they are) (Yazan, 2015). Furthermore, Lincoln and Guba (1981) state that "case study is best because it provides thick description, is grounded, is holistic and life-like, simplifies data to be considered by the reader, illuminates meanings, and can communicate tacit knowledge" (p. 375). This achieves qualities consistent with constructionism and lends itself to a high-quality qualitative research study. According to Merriam (2009), case study can look at the processes, problems, and programs in an applied field and can be used to evaluate programs and inform policy. In other words, gathering and analyzing the proposed data will allow me to evaluate the nature of infant massage at a Level II NICU as well as identify any gaps in knowledge, training, resources, and practice to inform future policies and procedures for healthcare initiatives related to massage therapy.

The research will be guided by an overarching biopsychosocial (BPS) framework which has been adopted not only by massage therapists across Canada in their approach to clinical practice but can also widely seen as being a useful approach in various healthcare settings. According to Borrell-Carrió (2004), the BPS framework can be seen from both a philosophical perspective as well as a clinical perspective. Philosophically, and within this research, the BPS framework postulates a way of understanding the societal contributions to health concerns, and from a practical standpoint, it serves to guide the understanding of the subjective experience in human care. Knowledge surrounding the subjective experience of care requires that the psychological and social aspects that influence one's health must be considered in addition to the biological

component, which has long been regarded as the focus for medical care across time. Psychological factors can include beliefs, feelings, coping strategies and cultural beliefs, whereas social factors can be friends, family members or the workplace. According to the World Health Organization, preterm newborns are considered biopsychosocial beings (Gómez-Cantarino et al., 2020) and as such, the approach to research concerning this population must also consider this framework.

The BPS framework guided the development of the semi-structured interview guides with thoughtful consideration given when determining questions. For example, asking about the age of the infant and the relationship between the caregiver and the infant would belong to biological questions in the BPS framework. Asking how touching/massaging makes a caregiver feel would lean towards the psychological aspect of the BPS framework. And finally, asking if a caregiver was aware of anything in place that allows them to bring in their own healthcare provider to provide massage for their infant in the NICU, would be an example of a social question.

Role of the Researcher

As co-investigator, I will be engaged in all aspects of this research, along with my supervisor and principal investigator, Dr. Denise Connelly, from proposal development and ethics approval to data collection, analysis, and the final report. When considering a constructivist paradigm in relation to methodology, embracing a naturalistic inquiry approach where the researcher is immersed in the community being studied is the preferred approach (Ponterotto, 2005).

Researcher Positionality

As a vital component, it is important to be transparent about my positionality as a researcher to help ground how I will approach conducting my research project. I have

been a registered massage therapist for the last 17 years and a professor of massage therapy since 2016. I became interested in infant massage when considering a patient population shift during my career. I have an innate interest in the preterm infant population, and upon investigating how I could become trained to work in a NICU, it became evident that this was not something that RMTs were doing in Ontario. It was also evident that allied health professionals were not formally and regularly using or promoting massage as a healthcare intervention within NICUs. Consequently, this ignited my research interest and is the primary driving force behind my reason for this thesis. Secondly, I consider my paradigm to be aligned with constructivism. I believe that there are multiple realities and that there is not one "true" reality to explain things. Understanding multiple realities involves a relationship between the researcher and the participant which is "the primary foundation and anchor of qualitative research" (Ponterotto, 2005, p. 129). In other words, I see the relationship between the participant and the investigator to be interactively linked in the sense that the findings within the research are literally created as the research investigation goes on (Lincoln & Guba, 1994). This can also be called an iterative approach, where information from one part of the research will impact subsequent parts as the research moves forward. Additionally, the goal of research in the constructivist paradigm is to "understand[ing] the 'lived experience' from the point of view of those who live it day to day" (Ponterotto, 2005, p. 129). I consider these to be fundamental and the dominant paradigm in guiding my research questions, methodology, and analysis components.

Ethics approval

Procedural ethics or "ethical approval from a relevant ethics committee to undertake research involving humans" (Guillemin & Gillam, 2004, p. 263) will be

obtained from the research boards of the participating hospital, Western University, Fanshawe College, and the Canadian Premature Babies Foundation.

Regarding interviews, there are both risks are benefits to consider. For instance, participants may feel as though they are re-living what some might consider a stressful time in their lives when they were in the NICU, both healthcare professionals and caregivers. This may bring about feelings of sadness, grief, anxiety, etc., that are a residual effect of their experience with a preterm infant. Others may feel that vocalizing their experience and contributing to research might serve to embrace or heal from their experiences. As a healthcare professional and graduate student, it is my responsibility to behave in a well-mannered, suitable, and engaging way. By this, I mean being polite and courteous while also recognizing if risks to the participant are emerging. Care will be taken to offer resources for any participant experiencing stress following a complete or incomplete interview.

Ethical considerations for observation include length of stay, level of participation, timing of site visits, and researcher presence. Prior to beginning any formal data collection, to acclimate with the NICU environment and to become familiar with the context, the people, and the activities, I plan to conduct informal visits prior to the collection of observation data. This is intended to ease my transition into the case environment for healthcare professionals and caregivers, so they recognize me as a familiar and friendly person. I also plan to conduct shorter visits (1-2 hours) at the beginning and then increase the time to three hours once data collection proceeds. It is recommended by Merriam (2009) that it is best to do shorter and more frequent visits at the beginning of a research project until the context feels more comfortable and familiar,

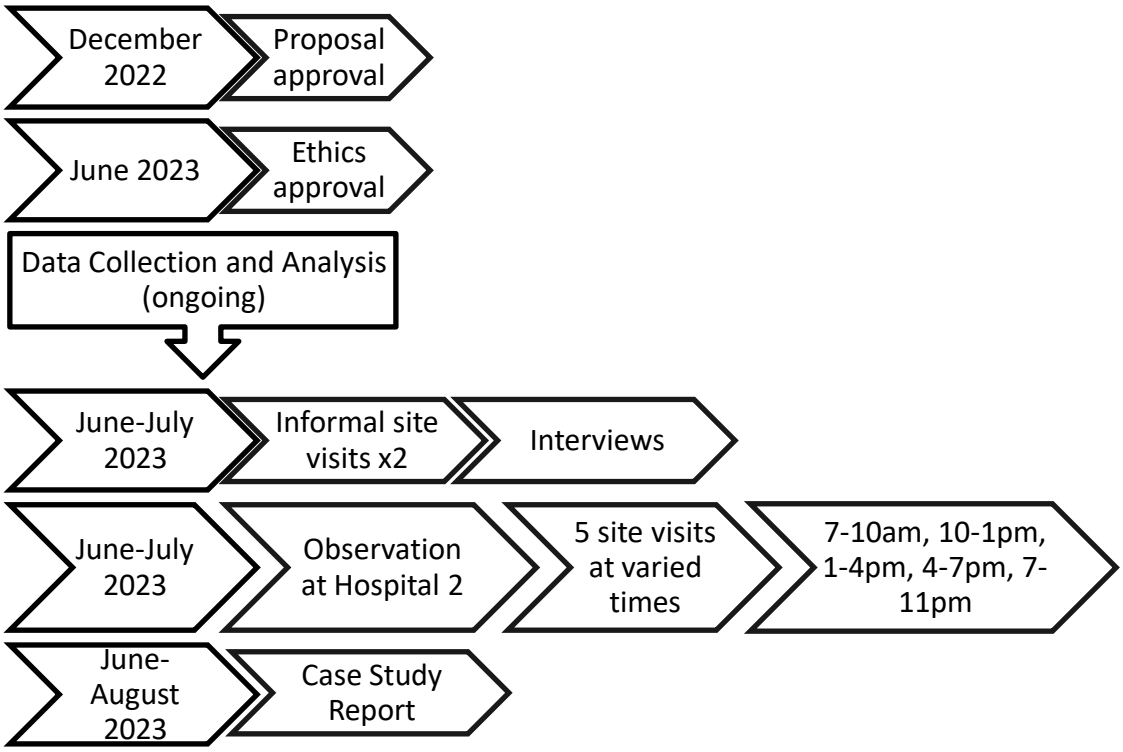
as this will ease recall when making detailed field notes. Regarding the level of participation during informal site visits, I will have someone on staff introduce me to people so that I can begin to establish rapport with those who may be present during formal visits. Bogdan and Biklen (2007; Merriam 2009) suggest having the researcher fit into the setting, finding things in common with those around them, being friendly and letting it be known that the researcher is indeed interested in the setting they plan to observe. Furthermore, regarding formal data collection, I have chosen non-participant observation, where I will be a silent observer considering the busy and intimate nature of the NICU setting. The timing of informal and formal site visits will be agreed upon with the hospital; however, it should be noted that data collection that spans different timeframes and days is a key component for the triangulation of quality research. Table 1 gives an example of a proposed timeline for Hospital 2 based on this case study research.

Written informed consent for healthcare providers (Appendix C) and caregivers (Appendix D) will be obtained by all participants prior to engaging in any phase of the research and "ethics in practice" will be followed throughout the more personal interactions in the one-with-one interviews which according to Guillemin and Gillam (2004) are the ethical issues that arise during the normal, everyday aspects of doing research that are not covered by procedural ethics. In my research, this will be particularly important in the interview phase. Due to the iterative and inductive nature of qualitative research, it is likely that I will encounter situations that will require appropriate, in the moment, decision-making. As such, I will maintain continual consent by checking in with participants to ensure continued voluntary involvement in the research. By being a reflexive researcher, I will be able to persistently scrutinize the

implications of the research on the participant and how it impacts their autonomy, dignity and privacy, and the risks of not being reflective on this matter (Guillemin & Gillam, 2004). By engaging in reflexivity before the commencement of the research study, I will also be able to plan, the best I can, for situations that I can only imagine will come up.

Table 1

Proposed Timeline for Hospital 2



N*ote.* Although this depicts a linear process, it should be noted that the process of data collection and analysis is iterative in this research study.

Proposed Participant recruitment and selection

Participants will be indirectly recruited through purposive sampling, which relies on purposefully selecting individuals to obtain rich information (Merriam, 2009). Information letters for healthcare professionals (See Appendix C) and caregivers (See

Appendix D) and a brochure (See Appendix E) will be sent prior to beginning any research processes. A contact at Hospital 2, whom I connected with in February 2023 regarding ethics approval, will help serve as a point of contact prior to commencing research. Caregivers associated with the Canadian Premature Babies Foundation (CPBF) will be contacted through their own organization after a proposal is submitted to their ethics department. CPBF serves parents and caregivers from various locations across the country and would be a suitable organization to reach people who have had experience at Hospital 2. Additionally, I will be recruiting through a local Facebook group called the London Ontario Mom to Mom Chat. Following the disbursement of information/recruitment letters, interested healthcare professionals and caregivers can initiate contact with me to determine a mutually agreed upon time and place for an interview. This method is known as direct recruiting. From here, those participants who have contacted me to be included in a one-with-one interview will move forward with pre-screening to determine eligibility in the study prior to the initial phase of data collection (See Appendix F). I have chosen to term my interviews as 'one-with-one' as opposed to 'one-on-one' as I feel this more closely resembles the epistemology that drives this research. It is *with* the participants that reality is created, a dual relationship, rather than seeing it as one *on* another. I aim to have six interviews conducted throughout the case study; however, it should be noted that this is a tentative number. According to Lincoln and Guba (1985), it is recommended that "sampling is terminated when no new information is forthcoming from new sampled units; thus, *redundancy* is the primary criterion" (p. 202, emphasis in original). Given the emergent nature of this study, it should be noted that the sampling strategy may need to change over time based on

emerging insights. Participants also have the right to discontinue their involvement in the study at any time.

The target population of healthcare professionals includes nurses, physiotherapists, occupational therapists, and physicians who have worked at Hospital 1 or Hospital 2 for at least one year in the special care nursery as this would provide for a well-rounded account of the events in the NICU. For the caregiver population, I am specifically looking for parents or caregivers who have had experience with a Level II NICU at Hospital 1 or Hospital 2 within the past 12 months who cared for a baby(ies) considered to be low birthweight (>1200g), were born between 30-36 weeks' gestation, and who speak English. A Level II NICU was the preferred choice for research because infants in a Level II NICU are of older gestational age and are more medically stable. In contrast, infants in a Level III NICU have strict protocols regarding handling of the infants and the critical care necessary for these infants would take precedence over massage therapy programs. A Level II NICU can also be referred to as a special care nursery.

Interview participants will be given a $25 Starbucks gift card to help compensate and show appreciation for their time in the study. Gift cards will be given after the first semi-structured interview. Exclusion criteria is anyone that has had less than a consecutive 5 day stay in a Level II special care nursery as it is felt that the experience in the NICU would not be sufficient to provide enough detail.

Data Management

Proposed Data collection

While case study method does not claim any specific process for data collection or analysis, I am choosing methods compatible with qualitative research and a

constructivist underpinning. Drawing from Merriam's (2009) interpretation of case study methodology, methods for collecting data will include one-with-one semi-structured interviews for both healthcare professionals (See Appendix G) and caregivers (See Appendix H), relevant documents concerning massage therapy, and non-participant observation (See Appendix I).

Relevant Documents. Regarding documents concerning massage therapy, I plan to collect documents that are both in plain sight at Hospital 1 or Hospital 2, as well as ask for them from the healthcare team. I intend to collect patient/parent pamphlets, internet/intranet-sourced information specific to a Level II NICU, documents/references used by the healthcare team, as well as policy/process documents.

Interviews. Interviews will be semi-structured and emergent in design, as is the nature of constructivist research. Interviews will either be conducted using Zoom or in-person dependent upon health and safety COVID-19 restrictions and/or participant preference. Each interview will last approximately 30-60 minutes and may require a follow-up interview. There are two separate interview guides being used in this. One for healthcare professionals (Appendix G) and one for the caregivers of preterm infants (Appendix H). All interviews will focus on the participant's relative experience in the Level II NICU with regard to massage for preterm infants as well as adherence, education, support and training available.

Observation. To acclimate with the NICU environment and become familiar with the context, the people, the activities and to complete any administrative details required, I plan to conduct informal visits prior to the

collection of observation data. “Observations are [also] conducted to triangulate emerging findings; that is, they are used in conjunction with interviewing and document analysis to substantiate the findings” (Merriam, 2009, p. 119). The information gathered during an onsite visit will be expanded upon with field notes, memos, tentative themes, hunches, ideas, and things to pursue. In addition, notes will be made of how these observations will influence the interview questions and subsequent onsite visits. As such, the observation guideline is tentative and flexible. According to Merriam (2009), “Data that have been analyzed while being collected are both parsimonious and illuminating” (p. 171). Data analysis will be done simultaneously with data collection and coding will begin at the outset of data collection.

Observation of healthcare professionals and caregivers will be a key component for understanding the nature of massage taking place in the case environment and to capture what is being done, beyond what is being said in interviews. An observation documentation guide will be used to record data in a consistent and organized manner (Appendix I2)

Proposed Data analysis

While the section of data analysis follows data collection, case study considers that both collection and analysis are done simultaneously (Merriam, 2009), which is a further example of the emergent nature of this approach in qualitative research. Merriam’s (2009) account of qualitative research includes the use of the constant comparative method proposed by Glaser and Strauss (1967) in her strategy for analyzing data; however, in maintaining coherence between the intent of my research, paradigm and

analysis, I propose the use Braun and Clarke's Big Q approach to thematic analysis (TA), and more specifically, reflexive thematic analysis, which uses tools and techniques within the qualitative paradigm (Kidder & Fine, 1987; Braun et al., 2019). TA is known for its flexibility across paradigms, theoretical and philosophical positions, and data collection methods (Braun & Clarke, 2013). It also works in a bottom-up approach, meaning it does not assume a hypothesis or predetermined variables/codes and does not subject itself to strict or controlled data collection procedures (Maracek, 2011). A biopsychosocial (BPS) framework is proposed for understanding the societal contributions to health concerns and the subjective experience in human care.

When it comes to producing codes in reflexive TA, it is approached differently than other forms of TA. In reflexive TA, "data do not need to be segmented for analysis, not all data (lines) need to have codes applied, and coding can be as fine-grained or as coarse as is required to address the aims and purpose of the research" (Braun & Clarke, 2021, p. 42). Also, according to Braun & Clarke (2021), reflexive TA "involves six-recursive-phases of: familiarization; coding; generating initial themes; reviewing and developing themes; refining; defining and naming themes; and writing up" (p. 39). Within these phases, the researcher's role in knowledge production, according to Braun and Clarke (2019) is at the centre of the creative labour of reflexive TA. Furthermore, the research is reflective and thoughtful both with the data and the analytic process.

In contrast, the constant comparative method proposed by Glaser and Strauss (1967) has a defined purpose of discovering theory. This is shown by the four stages of the constant comparative method, which include: "comparing incidents applicable to each category, integrating categories and their properties, delimiting the theory, and writing

the theory" (Glaser & Strauss, 1967, p. 105; Kenny & Fourie, 2015, p. 1271). In choosing to conduct a case study methodology, it is not the intent of my research to develop a theory; rather, it is my intent to influence healthcare practices and policy. In relation to paradigm coherence, it is important to me to forge ahead with a method of analysis that was more flexible and congruent with my philosophical stance than constant comparative analysis offered. It has been shown by many researchers that Glaser was reluctant to declare an epistemological or ontological position. Since Merriam (2009) specifically mentioned using the constant comparative method as outlined by Strauss & Glaser (1967), it would be naïve of me to ignore the philosophical underpinnings of the proposed method of analysis. Interestingly, in 1994, Strauss acknowledged the positivist language used by Glaser & Strauss when the *discovery* of a pre-existing theory emerged from "out there" (Strauss & Corbin, 1994, p. 279). In 2002, Glaser also contended that the techniques and methodology associated with grounded theory, including the constant comparative method, serve to "make the generated theory as objective as humanly possible" (Glaser, 2002, para. 19). Case study involves various data collection methods, and accordingly, TA offers consistency between analysis and the diverse data types. As mentioned above, reflexive TA "involves six-recursive-phases of: familiarization; coding; generating initial themes; reviewing and developing themes; refining; defining and naming themes; and writing up" (Braun & Clarke, 2021, p. 39). This approach allows for flexible coding and theme development where analysis is creative rather than rigid. A latent and inductive approach will be used to analyze the data. A latent approach involves the codes capturing implicit meaning and a deeper level of analysis that requires

researchers to be immersed in the data (Braun et al., 2019). An inductive approach relies on the data to set the foundation for creating meaning and interpretation.

Proposed Strategies for Quality

To appeal to diverse researchers and target audiences, Merriam (2009) suggests using language that spans paradigms and research methods. As such, Merriam (2009) suggests that instead of using qualitative-based language such as trustworthiness and rigor when speaking about the quality of the research, the use of terms such as validity and reliability be used. Reliability (rigor) and validity (trustworthiness), according to Merriam (2009), is whether the research has been conducted and reported in a manner that entrusts confidence in the readers, the practitioners and other researchers. Lincoln and Guba (2000) eloquently state that what a reader should ask regarding a study's outcome is whether the findings are "sufficiently authentic…that I may trust myself in acting on their implications? More to the point, would I feel sufficiently secure about these findings to construct social policy or legislation based on them?" (pg.178) Validity is determined by whether what is said to be true actually matches reality (Merriam, 2009) and that validity "is a goal rather than a product" (Maxwell, 2005; as cited in Merriam, 2009, p. 214). A qualitative researcher does not aim for an objective truth but rather to understand the lived experience through the eyes of those living it. By imposing strategies that foster reliability and validity, I will also be supporting the credibility of this study.

In this research, the criteria used to determine the quality of research is guided by Merriam (2009). This section outlines the use of triangulation as well as strategies for achieving validity and credibility in the research. Triangulation will use multiple methods such as observation, interviews, and relevant documents, as well as multiple sources of

data including interviewing people with different perspectives and visiting the hospital at varied times.

To enhance the validity and reliability of the study, Merriam (2009) proposes several strategies to be integrated within the study. Member checking will ensure accurate representation of interview interpretation and prevent potential misrepresentations. The iterative process of member checking will also ensure minimizing researcher bias that may have influenced the research findings. Long-term observation will be conducted over five days at varied times to achieve data saturation. Peer examination of analysis involves research committee members reviewing the data analysis process to enrich the process of data analysis for a graduate student, and where the goal is not to seek a consensus of meaning. Using multiple 'coders' to achieve reliability would align with coding reliability approaches (e.g., Boyatzis, 1998; Guest et al., 2012) but does not assimilate with reflexive coding approaches (Braun and Clarke, 2021). Additionally, disclosing researcher bias will involve engaging in reflexivity, which can be defined by Lincoln and Guba (2000) as "the process of reflecting critically on the self as researcher, the 'human as instrument'" (p. 183). The use of thick description will provide highly descriptive and detailed information about the findings.

Merriam (2009) suggests that reliability also refers to the likelihood of results being repeated should the study be replicated. In other words, it is important to determine "*whether the results are consistent with the data that is collected"* (Merriam, 2009, p. 221, emphasis in original). Addressing the researcher's positionality is crucial in promoting transparency. By openly acknowledging biases, goals, and limitations that may have influenced the development of the research and the analysis of findings,

reliability can be achieved. An audit trail of the decisions made throughout the research process, including how the data is collected and how categories are determined. Reflections, questions, issues, and any ideas from the start of my research until the completed study that influenced decisions will be kept in a journal. As Richards (2005) notes, the credibility of qualitative research hinges on the researcher's ability to convincingly illustrate the path taken in their research and to build confidence that it was the best one possible. Table 2 provides an overview of the strategies outlined by Merriam (2009), presented in a visually appealing format that facilitates comprehension.

Table 2

Proposed Strategies for Quality Case Study Research

Triangulation	Validity and Reliability
-Multiple Methods -Multiple sources of data	-Member checking -Long-term observation -Peer examination of analysis -Disclosure of researcher bias -Use of think description -Explanation of researcher positionality -Audit trail

Note. This table is based on the information presented by Merriam (2009) regarding strategies for quality within qualitative case study research.

Proposed Data management

A master list of participants with their participant codes, as well as any hard copies of observation field notes and in-person/online interviews, will be stored in a locked office in a locked filing cabinet in the principal investigator's locked office on campus. Interviews to be conducted through Zoom may be audio recorded through the online cloud recording feature and saved on my Western OneDrive account. Western OneDrive has advanced security measures, including two-factor authentication supported

by Duo Mobile (version 4.31.0.247.1), security monitoring systems, firewalls that limit traffic into the environment from unauthorized locations, and file encryption at rest (Microsoft, 2022). In addition to having recorded Zoom meetings protected by personal password, end-to-end encryption measures will ensure that communication between all meeting participants will be encrypted using cryptographic keys known only to the devices of the involved participants (Western University, 2022). Western's contract with Zoom prohibits the sale of information to third parties and uses privacy practices and technical security measures to help with PHIPA (Personal Health Information Protection Act) compliance (Western University, 2022). In the instance that an interview is recorded on paper, all hard copies will be kept in a locked cabinet in the locked office of the principal investigator. Meeting participants will include consenting healthcare professionals and caregivers from Hospital 1 or Hospital 2, caregivers from CPBF, caregivers from the London Ontario Mom-to-Mom Chat on Facebook, and myself. My research committee consisting of Dr. Denise Connelly, Dr. Sheila Moodie, and Dr. Amanda Baskwill have access to recorded Zoom meetings as well as hard copies of observation field notes and interview notes for the purpose of ensuring quality throughout data analysis. Unauthorized third parties, including Zoom, will not have access to private interviews. In-person interviews may be audio recorded through Zoom, transcribed verbatim and saved in a Western OneDrive folder on my computer in accordance with the security measures previously mentioned.

In terms of data management and organization, I will be using Microsoft Word available through Western OneDrive. According to Western University's CyberSmart division, Zoom has completed the Technology Risk Assessment which ensures adequate

protection as well as acceptable levels of risks by various people within Western (Western University, 2022). All information will be kept for seven years in compliance with Western's Faculty Collective Agreement.

Anticipated Outcomes of Proposed Research/Further Research

This research aims to explore the nature of massage therapy in a Level II NICU as experienced by healthcare professionals and caregivers in the past 12 months through a prospective case study research approach. Case studies are grounded in real-life situations, which provides for a comprehensive view of the environment and plays an important role in expanding the knowledge base in a specified area, and as such, is an appealing design for applied fields of study (Merriam, 2009). This can further lead to improvement in a field's practice. Additionally, I will be able to determine the likelihood that this study, in partnership with one or more Level II NICU healthcare professionals, may foster the site to develop the Special Care Nursery as a project champion for integrating massage therapy as a formal healthcare intervention. Further to this, identifying how an RMT could support and address any gaps found to exist from this study would foster the development of interprofessional relationships between existing healthcare professionals, caregivers, and massage therapists. A project champion advocates for and promotes change while concurrently organizing and encouraging others within a particular healthcare setting (Collier, 2022). Some of the benefits associated with being recognized as a champion of change in the healthcare sectors include: a higher quality of care for patients and service users; up-to-date policies and procedures; improved ratings; increased healthcare professional knowledge; greater healthcare team morale, and a better environment to work (Collier, 2022). Project champions play a critical role in supporting new innovations through the phases of initiation, development,

and implementation of innovative healthcare initiatives (Shaw et al., 2012). This research has the opportunity to serve as an example for future case studies of other Level II NICUs exploring the same research question, as well as a contributor to comparative case studies.

Part B – Methods

"Vulnerability is the birthplace of innovation, creativity, and change" – Brené Brown

Part B - Methods

In the course of securing gatekeeper support, unforeseen challenges arose that necessitated a modification to the original research plan. Despite ethics approval at two academic institutions and secured funding, both Level II NICU sites declined to participate in the proposed research study. After consultation with my supervisor and my advisory committee, it was decided that there was insufficient time to approach a third site. There was also the risk that a third site might also decline participation. We all agreed that to fulfill the requirements of a Master's thesis I would continue with a retrospective reflection of this experience as well as contribute to what might have been done differently a priori to try to circumvent the problems experienced. Factors believed to have contributed to the research experience include proposing research in a complex care environment, acuity of the pediatric study population, gatekeeper access and relationships, being a researcher and non-staff member in a clinical setting and proposing qualitative research in a traditional biomedical context. Reflecting on the events that transpired throughout this research project was done methodically using a retrospective pragmatic approach guided by Gibb's Reflective Cycle (1988) and the Consolidated Framework for Implementation Research (CFIR). This provided me with a comprehensive understanding of events, actions, and decisions that contributed to the outcome of the proposed research.

Statement of Objectives

The objectives for Part B Methods encompass a systematic exploration and reflection on key moments in the research process. The primary aim is to identify the key

challenges that have significantly influenced the trajectory of the research. By using a retrospective pragmatic reflective approach structured by Gibb's Reflective Model and supported by the CFIR, I seek to gain valuable insight and lessons that can inform action steps to avoid similar challenges in future research.

Retrospective Pragmatic Reflection Method

Consistent with reflection, according to Reeves (2010), it is important to acknowledge that the presence of the researcher matters and that the voice is present within generated knowledge. I view the entirety of this reflection in line with how Steward (2006) views research, such that research should be seen as a "fascinating, and challenging way to develop personal and professional understanding" (p.31). It is through a willingness to be vulnerable to the emotional unpleasantry of not reaching the "success" I had envisioned that I can grow as a researcher, professional, and educator. I have allowed my first-hand experiences to become the starting point for new insights, discussion, and reflection to make sense of the unanticipated outcome of my research. To further capture the personal experience of the researcher and to give contextual background to the development of this reflection, an expanded historical timeline can be found in Appendix J.

Part B of this thesis is presented as a retrospective pragmatic reflection. It is retrospectively reflective as it occurred after a second site declined to host the research project, which was in May, and marked the end of Part A in the research project. There was no more time available in the two-year Master's timeline to complete the proposed case study without a host site. This is different than being reflexive, as reflexivity is an 'in-the-moment' and ongoing self-scrutiny (Finlay, 2016). The pragmatic perspective which anchors Part B is derived from Schön's concept of reflection-on-action which can

be used to understand past events (Mortari, 2015). Furthermore, Schön's concept of reflection has received remarkable attention as a method for professional development in health and social science disciplines (Kinsella, 2007). Combining a pragmatic approach with reflection aligns with qualitative research and constructivism in that it captures the lived experience of the researcher within a practical context. These approaches collectively offer insights into the factors that influenced the research outcome and provide valuable information for future decision-making.

Gibb's Reflective Cycle (1988) was chosen to add structure and depth to the analysis of the experiences of the researcher. This model for reflection is widely used in healthcare and education, thus, pairing well with Schön's concept of reflection. In addition to Gibb's Reflective Cycle, the Consolidated Framework for Implementation Research (CFIR) was used to guide the assessment of factors thought to influence the outcome of the research. The CFIR consists of five major domains: intervention characteristics, outer setting, inner setting, characteristics of individuals, and the implementation process, each comprised of multiple constructs thought to exert influence within their respective domains. The CFIR will be elaborated in an upcoming section of the thesis.

Description and Process of Choosing Gibb's Reflective Cycle

In reflective practice, it is important to choose a model of reflection to give structure to the myriad of learnings one wishes to convey. As a result, Gibb's Reflective Cycle (1988) was the model selected for this purpose. Other models were also considered including John's Model of Structured Reflection (MSR) (1994), Kolb's Experiential Learning Cycle (1984), and Driscoll's What Model (1994). Not one model can be seen as the 'correct' model, however, careful consideration of the model chosen for reflection

should be made clear. John's Model of Structured Reflection (1994) was initially considered given its use in healthcare fields and allowing the user to include emotion as part of the reflection; however, this model was ultimately not chosen due to its rather "prescriptive" approach (Finlay, 2008). According to Finlay (2008), John's MSR framework "leaves little scope for practitioners to draw on their own intuitions, values and priorities" (p. 9). Further to this, John's MSR has been modified many times over the years becoming more holistic and less mechanical to help elicit deeper reflection (Finlay, 2008). With its many revisions, I determined it would be more straightforward to use a model of reflection that was more simply laid out given the complexity of the healthcare environment being researched. Kolb's Experiential Learning Cycle (1984) looks at the ability of the researcher to implement new ways of handling a situation they have encountered that did not initially proceed as expected. Ultimately, the researcher would then analyze the effect of doing things differently. Since this reflection is retrospective and time was constrained in terms of trying to do things differently, Kolb's Experiential Learning Cycle was not chosen. Driscoll's What Model (1994) is a very simplistic model which only asks the reflector to think about three questions: What? So What? and Now What? It was felt that this simple model would not lend itself to creating the depth of meaning and analysis in my experiences.

Gibb's Reflective Cycle (1988) was determined to be a model that would aid in reaching depth and structure to my experiences in research since it is widely used in nursing practice and professional education for guiding reflection. It also shares a focus on retrospective reflection, like that of Schön's reflection-on-action. Since the field of my Master's degree is professional education, and I am retrospectively reflecting on my

experience trying to conduct research, Gibb's Reflective Cycle (1988) was most appropriate. It was also important that I chose a model that encouraged recognizing how the experience made me feel.

Gibb's cycle consists of six stages including Description, Feelings, Evaluation, Analysis, Conclusion, and Action Plan. Going through each part of the cycle allowed critical thinking and self-awareness to enhance my learning experience. Table 3 describes each of the six stages and the questions that can be asked going through each stage. It is important to note, however, that not all questions need to be answered, rather, they are there as a guide to the types of things to be included. This allows for flexibility in the cycle to be useful in a variety of situations and contexts.

Table 3

Six Stages of Gibb's Reflective Cycle (1988)

Stage	Question
Description	• Describe the situation in detail • What happened? • When and where did it happen?
Feelings	• What were you feeling before, during and after the situation? • What do you think other people were feeling during the situation?
Evaluation	• Evaluate what worked and didn't work in the situation (focus on positive and negative aspects) • What was good and bad about the experience? • What did you/other people contribute to the situation?
Analysis	• Making sense of what happened and extract meaning • Include academic literature if desired

	• Why did/didn't things go well? • What sense can I make of the situation?
Conclusions	• Make conclusions about what happened and highlight what changes could improve the outcome • What did I learn? • What skills do I need to develop? • What else could I have done?
Action Plan	• Plan for what you would do differently in the future • How will I develop the required skills I need? • How can I ensure I act differently next time?

Note. This table describes the six stages of Gibb's Reflective Cycle (1988) and some associated questions that the researcher might ask themselves during reflection.

Gibb's Reflective Cycle (1988) will be used to reflect on my experiences encountered during the research process to gain a more diversified perspective on individual factors thought to influence the outcome of the project. This structured approach will allow me to be more mindful of my learning while also providing me with the opportunity to develop action plans that future researchers in a similar situation might use to circumvent similar issues or to be able to use a priori.

Description and Use of the Consolidated Framework for Implementation Research

One of the ways experiences were explored for this reflection was through the lens of implementation science, specifically, the Consolidated Framework for Implementation Research (CFIR). By considering the CFIR (CFIR; Damschroder et al.,

2022) to guide research, I was able to draw on a variety of factors that influence implementation and which also consider factors beyond the immediate context of the NICU. In fact, this framework is useful for determining strategies that consider facilitators and barriers to implementation (Clark et al., 2021). Implementation science "typically begins with an EBP [evidence-based practice] that is under-utilized, and then identifies and addresses resultant quality gaps at the provider, clinic, or healthcare system level" (Bauer et al., 2015, p. 3). Furthermore, it asks what strategies will help with the process of successful implementation of the EBP and how much the intervention can be modified based on the setting or context that is in question. Understanding the context in which the EBP is situated involves employing a framework to guide the assessment of the context where the research will occur. Under the theory of implementation science, the CFIR is used to assess constructs thought to influence implementation (Kirk et al., 2016) or lack thereof (Bauer et al., 2015). This does not need to happen retrospectively, as most popularly thought, but is equally, if not more important to do prior to engaging in implementing an intervention or in my case in conducting research in a complex setting. Since this theory and framework were not used prior to engaging in research in this study, it is being used to guide reflection and consider relevant factors and challenges that may have impacted the outcome of this research. Other theories that were considered for reflection in Part B include:

- Theory of Family Integrated Care
- Theory of Existing Healthcare Practices
- Integrated Care Theory
- Complexity Theory

- Theoretical Framework of Acceptability
- Normalization Process Theory
- Theoretical Framework of Acceptability

Ultimately, the decision to choose the CFIR was determined by the fact that it was built upon the consolidation of constructs found in other published theories (Damshroder, 2009). The reason behind this was that it would "facilitate the identification and understanding of the myriad potentially relevant constructs and how they may apply in a particular context" (Damshroder, 2009, p. 2). Since the CFIR is applicable across multiple contexts, there is flexibility in allowing the researcher to determine which constructs would be most fruitful or necessary to study within a particular setting (Damschroder et al., 2022). As mentioned previously, there are five domains in the CFIR including intervention characteristics, outer setting, inner setting, characteristics of individuals, and the implementation process, each comprised of multiple constructs thought to exert influence within their respective domains. Table 4 elaborates further on each of the five domains within the CFIR.

Table 4

Five Domains within the Consolidated Framework for Implementation Research

Domain	Description of the Domain
Intervention Characteristics	Describes the intervention being implemented
Outer Setting	The setting in which the inner setting exists (e.g., hospital system, school district)
Inner Setting	The setting in which the innovation is implemented (e.g., unit, classroom)
Characteristics of Individuals	The roles and characteristics of the individuals involved
Implementation Process	The activities and strategies used to implement the innovation

Note. This table briefly describes the five domains within the CFIR (CFIR, 2023).

Seven specific sub-constructs are elaborated within the implementation climate and include: tension for change, compatibility, relative priority, organizational incentives and rewards, goals, and feedback, and learning climate. Table 5 describes the seven specific sub-constructs within the implementation climate.

Table 5

Seven specific sub-constructs within the Implementation Climate of the Inner Setting

Sub-construct	Description
Tension for Change	The degree to which stakeholders perceive the current situation needing change
Compatibility	The degree of fit between the meaning and value of the intervention by individuals and how it aligns with their norms, values, and perceived risks and needs
Relative Priority	The degree to which individuals' have shared perception of the importance of the implementation
Incentive System	Extrinsic incentives such as goal-sharing awards, performance reviews, promotions, raises, stature/respect
Mission Alignment	The degree to which the innovation aligns with the inner setting mission and other concurrent initiatives
Available Resources	The degree to which resources are available to implement and deliver the innovation.
Access to Knowledge and Information	The degree to which guidance and/or training is accessible to implement and deliver the innovation.

Note. This table briefly describes the seven sub-constructs related to the implementation climate of the inner setting domain of CFIR (CFIR, 2023).

Reasoning Applied in Application of the CFIR Framework for the Process of Reflection

The use of the CFIR framework to determine applicable domains and related constructs to guide the reflection is described in the following section. While the inner setting domain was ultimately chosen as the focus in reflection, five other CFIR domains were contemplated but ultimately deemed limited for use as guides in the reflection process. The innovation domain was considered not relevant because a specific innovation was not the focus of the proposed project. The proposed research was to

explore the nature of massage in a level II NICU rather than a new application of a massage program, for example, as an innovation. The outer setting, while acknowledging the context in which the inner setting operates, was not the primary focus of the proposed research. In this CFIR domain, the focus is on broader influences, such as the health care system, community values/beliefs, or laws and policies. The individuals domain, intended for documenting roles of the key informants within a research project, was limited for the process of reflection as very little interaction was experienced by the researcher with key decision-makers, for example. The researcher had no interaction with healthcare professionals (HCPs) or caregivers of preterm infants. Therefore, information related to key individuals was not available for reflection. The characteristics domain, with the intended focus on capacity of individuals to fulfill their roles, was also limited in the absence of the researcher's experiences with HCPs, caregivers or observations of the nature of massage in the NICU. The implementation process domain was not applicable because the researcher did not have any experiences with activities or strategies surrounding the implementation of an innovation.

The researcher's experience predominantly aligned with the inner setting domain. The decision to focus on specific inner setting constructs stems from the specific challenges experienced by the researcher in the process of obtaining access to a host site for implementation of the proposed research project. The three specific sub-constructs which best aligned with the experiences of the researcher included compatibility, relative priority and mission alignment. Patient care concerns shared by gatekeepers related to compatibility. The lack of an established relationship with the two hospital sites aligned with relative priority. No prior knowledge of existing interests within the NICUs of the

potential host sites related to mission alignment. The other four sub-constructs, including tension for change, incentive system, available resources, and access to knowledge and information, were not experienced by the researcher. Based on the researcher's experiences in the efforts to implement the proposed research project, the three sub-constructs were addressed through a reflective pragmatic retrospective approach to develop new learnings.

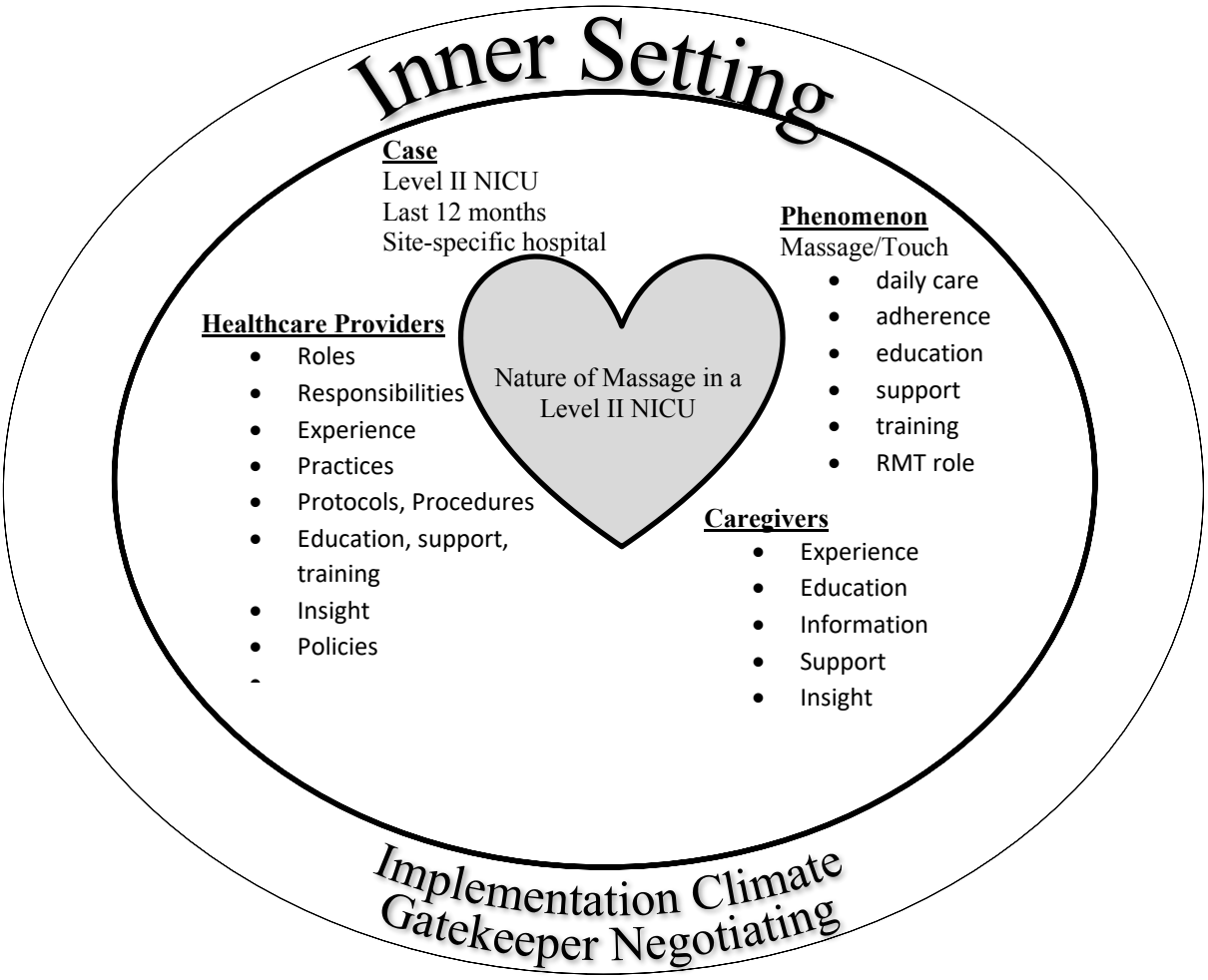
Application of the Framework, Selected Model and Reflection Method

The proposed research discussed in Chapters One and Two uses case study methodology for conducting research concerning massage therapy interventions in a Level II NICU environment. Case study methodology is grounded in real-life situations, which provides a comprehensive view of the environment and plays an important role in expanding the knowledge base in a specified area, and as such, is an appealing design for applied fields of study (Merriam, 2009). Further to this definition, Miles and Huberman (1994) illustrates this description using a heart in the center of a circle since the heart is the focus of the study, and the circle defines what is not studied. Essentially, everything beyond the circle is excluded. I found the image proposed by Miles and Huberman particularly meaningful as it conveyed a dual significance concerning the purpose of my research. At the heart of any NICU are the preterm infants, surrounded by those who are taking care of them. This echoes the central focus of my study where preterm infants are positioned as being at the heart of this study, surrounded by an array of contextual elements integral to case study research. Further to the healthcare practitioners and families taking care of the preterm infants (everything inside the circle), it is imperative to consider the gatekeepers and relevant parties that are also looking out for the best

interest of the institutions, the healthcare workers, the families, and the patients involved (outside the circle) as shown in Figure 1.

Figure 1

Adapted application of Miles and Huberman's (1994) Case Study Approach



Note. This illustration is an application of Miles and Huberman's description of the phenomena within case study approach. The phenomena of the proposed case study in the original research project have been shown within Miles and Huberman's graphic depiction of case study. The inner circle contains four elements including the case, the

phenomenon, and the participants. In the proposed research there were two groups of participants, both the healthcare providers and the caregivers. The additional elements located in an outer ring draw attention to the implementation climate surrounding the case for additional consideration by the researcher. In this representation of the use of massage therapy in a NICU, descriptors are included to elaborate on the components within each of the case, phenomenon and participants.

Gatekeepers can generally be described as "the individuals, groups, and organizations that act as intermediaries between researchers and participants (Clark, 2011, p. 486; De Laine, 2000). While these are not directly studied, they represent a crucial component of case study research that should be considered, especially with new research partnerships. Table 6 consolidates the challenges related to the proposed research project to facilitate an understanding of the complex research dynamics that have impacted the study's outcome. The table is organized by the sub-constructs that will be considered within the CFIR for reflection, namely, compatibility, relative priority, and mission alignment/needs.

Using Gibb's Reflective Cycle (1988) alongside the CFIR in a retrospective reflection allows for examining and improving research processes and outcomes. Both Gibb's Reflective Cycle (1988) and retrospective reflection emphasize the importance of looking back on past experiences and learning from them, whereas the CFIR serves to complement this process through its application to organizational contexts. By aligning the chosen reflection method, model, and framework, I aim to gain a more complete understanding of considerations for case study research in complex organizations. The

alignment will inform action steps to avoid similar challenges in future research endeavours.

Table 6

Challenges to the Conduct of the Proposed Research Project

Compatibility	Priorities	Mission Alignment/Needs
-Welfare of people under their charge -Intrusion -Methodology	-No prior relationship with gatekeepers to foster understanding of priorities	-Reciprocity

Note. This table briefly describes the three sub-constructs within the implementation climate that best align with the research experience.

Chapter Three – Results

"Life is 10% what happens to you and 90% how you react to it" – Charles R. Swindoll

Reflections on Experiences with Three Sub-Constructs of the Inner Setting Domain

This section is comprised of the application of Gibb's Reflective Cycle (1988) to the three sub-constructs of the inner setting domain within CFIR that best aligns with the researcher's experiences. The three sub-constructs are compatibility, relative priorities, and needs/mission alignment.

Compatibility

Drawing on CFIR, compatibility can be defined as the degree of fit between the meaning and value of the intervention by individuals and how it aligns with their norms, values, and perceived risks and needs (Damschroder, 2009). In my research experience, I have aligned this with concerns over intrusion, methodology, and the welfare of the people under the charge of the institution.

Description. Following the final meeting with Hospital 2 in which gaining gatekeeper support was the hopeful outcome, it was the consensus of the gatekeepers that my research would produce unintentional messaging to the participants, particularly caregivers of preterm infants. Echoed by Reeve (2010), the gatekeepers were concerned about the welfare of the people under their care. Similarly, apprehension of this nature could also be considered intrusion (Clark, 2011) where intrusion can be seen as something that may reveal an area of practice that the gatekeeper does not want to be revealed publicly. After a discussion with Hospital 2, concerns about compatibility were raised when I was

questioned about whether the proposed project constituted a case study evaluation or a program review.

Feelings. The denial from Hospital 2 evoked a sense of frustration and a feeling of being misunderstood. While I recognized the genuine concerns about unintended consequences on the participants' welfare, I was also disappointed by the perceived intrusion and methodological misunderstandings that led to the denial. I had discussed being flexible to their needs and offered to adjust the semi-structured interview questions; however, they were not open to this suggestion.

Evaluation. The benefits outlined in my research, including contributing to a base of knowledge, improving a field's practice, recognition as a project champion, and fostering the development of interprofessional relationships, align with factors supporting engagement, emphasizing the positive impact I had anticipated in conducting this research. However, the denial from Hospital 2 is rooted in concerns about unintentional messaging and potential intrusion into areas the gatekeepers prefer to keep private. Methodological challenges, particularly related to the choice of case study research versus a program review also need consideration to ensure clarity.

Analysis. Despite my championing a clear benefit to the preterm infants, their families and the interprofessional advantages of this type of patient care, there were more immediate concerns raised by the gatekeepers at Hospital 2. The long-term potential impacts of the research led me to become short-sighted in recognizing immediate compatibility concerns. The lack of support, in terms of compatibility, appears to be linked to a perceived threat to the hospital's public

image. It was explained to me that my line of questioning might make the study participants, i.e., caregivers of preterm infants, question the level of care currently being provided to their preterm infants. In other words, if the caregivers were educated on the benefits of massage therapy for their infants, they might question the hospital as to the level of care they were currently being afforded, which did not include any form of massage intervention. From the perspective of the hospital, this was a problem. However, according to Clark et al. (2021), researchers need to be flexible to partners' needs, they need to be able to challenge assumptions made by the partner, and the partner needs to be open to potential negative findings regarding their program. This can only happen when a positive relationship exists between the researchers and the gatekeepers. Building a reciprocal relationship in research is essential to promoting understanding and fostering trust, rapport, credibility, and transparency. Despite my attempts to alleviate the gatekeepers' concerns by suggesting an alteration to the semi-structured interviews and working with them to find a suitable solution, they were still unable to support the research.

A potential gap in communication surrounding the purpose and outcomes of case study research versus a program review highlighted a knowledge between myself and the gatekeepers. According to Clark (2011), "within the field of health, where there is an emphasis on the perceived reliability, validity, and replicability of the scientific method and quantitative techniques more generally, some qualitative methods were perceived to be a threat to engagement by particular individuals within the gatekeeping organization" (p. 494). The

dominant scientific method of inquiry (quantitative research) and the hierarchical status it occupies in the study of science will continue to pose a significant compatibility challenge for qualitative researchers like myself, in conducting research (Albert et al., 2008).

Conclusion. Considering these challenges, there was a clear need for improved communication and flexibility between myself and the gatekeepers. Exploring the concept of compatibility with the CFIR may have led to an earlier discovery of these concerns by addressing the question of whether the research aligned with the norms, values, and perceived risks and needs of the individuals (Clark et al., 2021). Having positive relationships between myself and the gatekeepers would be a key difference-maker in the uptake of research. and would have led to more successful conversations in the earlier days of the research project.

Action Plan. To address methodological concerns, I would plan to offer a thorough explanation of case study research and its relevance in healthcare settings during a formal meeting in a format suitable to a variety of audiences. This would ensure that gatekeepers would have any questions answered regarding the benefits and implications of case study research. Moreover, I would actively work on building relationships with gatekeepers prior to developing a proposal so that I might come to an early understanding of the needs within the inner setting. This might be accomplished through volunteering, attending conferences, etc. at the local hospital. For the benefit of future graduate students, I would recommend the graduate degree milestone timelines suggested by the university account for the need to establish relationships with gatekeepers prior to an approved thesis

proposal (at the start of year two). These actions come with the hope of fostering more positive researcher-gatekeeper relationships and overcoming challenges related to methodology.

Relative Priorities

Drawing on CFIR, relative priorities can be defined as the degree to which individuals have a shared perception of the importance of the implementation (Damshroder, 2009). In my research experience, I perceive this challenge as related to the fact that there was no prior relationship with gatekeepers to foster an understanding or shared perception of priorities.

Description. Engaging gatekeepers is a critical aspect of initiating and conducting research, particularly in fields like mine, where the implementation of a research project depends significantly on the support and approval of key decision-makers. Understanding the dynamics of forging relationships with gatekeepers is pivotal for the success of any research endeavour. This realization is reinforced by Høyland et al. (2015), who highlight the underexplored nature of discussions on gatekeeper negotiations in the literature, especially in the context of gaining access to research sites and study participants in medicine and nursing. Understanding the environment in which the research takes place, including understanding the gatekeepers' priorities, is vital for continual negotiation and successful implementation.

Feeling. Going into my research, I was aware that I was an "outsider" to the institution and the families in the NICU; however, I assumed that as a regulated health professional, I would be regarded as an "insider," at least to some degree. I

was inclined to believe that being a health professional would have afforded me the opportunity to engage meaningfully with other healthcare professionals and gatekeepers**.** I felt frustrated trying to negotiate access with gatekeepers as this process was not as straightforward as I had thought. In fact, it required an extreme amount of patience. Additionally, negotiations are very time-consuming, and with a fast-approaching deadline to complete my Master's degree, I felt an extreme amount of pressure to force these relationships to exist. This experience in negotiating gatekeeper access also highlighted an assumption of mine that being associated with a major research university and seasoned researcher would lead to easy site access. It angered me that the success of my research was dependent upon the gatekeepers at two hospitals; gatekeepers that I had no prior relationship with.

Evaluation. As I reflect on the steps I took to negotiate gatekeeper access, I critically evaluate them in comparison to the framework by Høyland et al. (2015) for negotiating gatekeeper access (Appendix K). The outlined steps for gaining gatekeeper support were compared directly to my experiences, providing a valuable opportunity for reflection, and leading to insights into what was done well and what areas would require improvement in my own research practices.

Analysis. The first step to negotiating access was related to identifying gatekeepers who could assess the value of the research and identify the best route to gain access. Once this was established, additional gatekeepers were contacted either directly through me or through the primary gatekeeper. This was typically upper management (i.e., managers, directors, vice-president research, chief

executive officer, etc.). It is suggested that an email be sent, given their usually hectic schedules, which would then suggest a meeting to present the proposal (Høyland et al., 2015). Looking back at my own experience, I was introduced to a Hospital 2 gatekeeper by a researcher colleague. A brief phone call allowed us to introduce ourselves, and at this point, I asked if there were any questions regarding my research. It was indicated that the research seemed straightforward, and no questions needed answering. Following this phone call, emails were sent, and a request for my proposal followed. After waiting two weeks to hear back, it was indicated to me that my proposal was too long to review, given their busy schedule. Had I used implementation science to guide the development of my proposal, and to understand gatekeeper priorities, a general idea would have been presented to the hospital, in line with those identified priorities inherent in the context of the NICU. This would have allowed me to either gain support for the research moving forward or to understand that the NICU priorities did not line up with those of the research, and to select a new hospital.

Conclusion. Negotiating access takes considerable time, and the researcher must be prepared for this in estimating their timelines for research. The timespan for Hospital 1 from initial contact to the final decision of nonacceptance was nine months, whereas Hospital 2 spanned three and a half months (Appendix L1; Appendix L2). Being prepared for the length of time that it will take to identify priorities and build relationships with gatekeepers and navigate site access and participant recruitment processes requires communicating with the key parties early in the research process. Considering that my research was novel to the

NICU locally and the Canadian context globally, access should not have been assumed but should have been researched through an implementation research lens prior to developing a proposal to understand the priorities of each institution. Additionally, it is important to consider that not all gatekeepers will even have research as a priority, nor do they have to accept every research project that falls before them.

Action Plan. In future research of a similar nature, a more strategic and informed approach, guided by the principles of implementation research, specifically the inner setting domain, and implementation climate construct, will be integral to understanding gatekeeper priorities prior to developing a full-scale proposal. This would foster the development of positive gatekeeper relationships and build positive affiliations between researchers and the local context. In turn, this might positively impact compatibility as this would entail building relationships with gatekeepers prior to developing a proposal. Appendix K provides a general outline by Høyland et al. (2015) that may provide some structure for a researcher looking for ways to estimate what the process of negotiating gatekeeper access, according to Høyland et al. (2015) entails.

Needs/Mission Alignment

Drawing on CFIR, needs/mission alignment can be defined as the degree to which the innovation aligns with the inner setting mission and other concurrent initiatives (Damshroder, 2009). In my research experience, I perceive this challenge to be related to reciprocity, where there exists a mutual benefit for both parties involved. “Among the most effective ways to engage key individuals (e.g., leaders) is to have a change effort that is aligned with and contributes to achieving

organizational goals" (CFIR, 2023; VanDeusen et al., 2007). This construct aligns with the challenges of my experience as I was unaware of any organizational goals they were working towards at the time of our final meeting.

Description. Not having prior relationships with gatekeepers, I did not possess knowledge concerning any of their current needs or whether this research would in some way align with organizational goals. In the last meeting with Hospital 2, I was made aware of their interest in a cuddle program but that they had not had the opportunity to implement it.

Feeling. Upon hearing of a potential cuddle program the hospital wanted to implement, but through a series of factors (e.g., COVID-19, staffing issues) had not been implemented, I was immediately intrigued and thought that the person who had mentioned it would be supportive of my research. This person was a member of the research ethics board at Hospital 2 that attended the final meeting. Upon reflection, I thought the questions I wanted to ask in my semi-structured interviews of the HCPs and family members would have helped inform the hospital of what might work well with their intended cuddle program, what was already happening, and what could be done to support its implementation. I felt that if I had known this piece of information prior to our last meeting, I could have integrated this information into our discussion and be able to clearly communicate how this research would provide reciprocity. As a novice researcher, I felt unequipped to handle this new information on the spot and tie it into our existing conversation.

Evaluation. Through meeting with members of the research ethics board at Hospital 2, I was able to identify an area of practice that would align with both the goals of the hospital and the research. The challenge here was that I lacked prior knowledge of the hospital's goals and needs, resulting in being unprepared to integrate this new information into existing discussions.

Analysis. Returning to the CFIR framework and understanding the climate being researched, I might have included this information to show that the research was mutually beneficial and that my research could have contributed to the knowledge base surrounding caregivers' perceptions of touch and what they believe would be necessary for successful implementation. This instance highlights the need for better understanding and alignment with organizational goals to facilitate effective communication and mutual reciprocity. Achieving effective communication without prior knowledge of how research can be reciprocal will result in challenges regarding gatekeeper support.

Conclusion. Through this experience and relating what transpired with Hospital 2, it is evident that being prepared prior to discussing proposals is essential to effectively communicate how the research may have been beneficial to both parties involved. Just as important as communicating research goals is the need to understand how those research goals may be mutually beneficial, which would demonstrate reciprocity.

Action Plan. It is important to dedicate time to learning about organizational goals/needs prior to developing a full proposal. This will enable the researcher to integrate their findings concerning organizational needs into the information

presented to gatekeepers. In addition, a researcher should prepare themselves prior to entering meetings to answer challenging questions and adapt to new information presented. This can be achieved by rehearsing with research committee members or fellow students that have had experience in a similar situation.

Chapter Four – Discussion

"Vulnerability is the birthplace of innovation, creativity, and change" – Brené Brown

Situating Reflection as a Tool in Research Within Health Care Literature

While reflection has been around for many years, Donald Schön (1983, 1987) played a pivotal role in situating it within teaching and nursing professional practice (Quinn, 1988). Reflection involves experiential learning, or learning by doing, rather than by reading about it or being told about it. (Quinn, 1988). According to Mortari (2015), reflection in the research field is a "crucial cognitive practice" (p.1) where a researcher can question and explain their findings or experiences. It also tends to involve the individual practitioner being self-aware and evaluating critically in practice situations and is part of life-long learning (Finlay, 2008). Furthermore, related to healthcare, reflection is encouraged so that professionals "develop practical knowledge, social, political and economic knowledge, and self-knowledge" (Clarke et al., 1996; Kinsella, 2001, p. 196). beyond the technical components. For example, reflection has been used in healthcare to understand gatekeepers and negotiating access in research (Hunter, 2018; McFayden & Rankin, 2016) where barriers and facilitators to conducting research are reflected upon using past experience. Schoch (2021) uses reflection to describe her experience of learning through observing and participating in online exercise classes for people with Parkinson's during COVID-19 as well as her experience writing two articles about it. Schön (1987) elaborates on educating the reflective practitioner adding to professional competence. Schwartz Rounds (SRs) is a reflective tool used by medical practitioners in response to the increase in practitioner burnout (Gleeson et al., 2020). These examples highlight the versatility of reflection as a tool, ranging from enhancing professional development to understanding contextual factors in research such as gatekeeper

engagement. Incorporating reflective practices can contribute to a more comprehensive understanding of healthcare experiences.

Learnings from the Reflection Guided by Gibb's Reflective Cycle

Drawing on the CFIR and Gibb's Reflective Cycle has highlighted the need for me to be better informed regarding the contextual factors at play in research such as institutional priorities and the importance of building positive relationships with gatekeepers. Further to this, effective communication is essential from the beginning when planning a research proposal. Specifically, I consider six main areas where learning has taken place as a result of this retrospective reflection:

- **compatibility is important:** The CFIR has allowed me to understand that compatibility is an essential factor in the successful uptake of research. Understanding compatibility between the research objectives and that of a Level II NICU relies on building positive relationships with gatekeepers. Positive relationships enable important and effective communication regarding the needs, values, and perceived risks inherent in the research.

- **gatekeeper engagement challenges:** Challenges were encountered when trying to engage gatekeepers. Some of the challenges involved site access (due to patient acuity, staffing levels, and research ethics boards), intrusion, unintentional messaging, and questions concerning the research methodology. Overcoming some of these challenges can be addressed by being flexible and working with organizations to reach understanding. Further, the researcher needs a strategic and

well-thought-out strategy, potentially involving informal meetings and presentations to enhance understanding.

- **positive relationships are essential:** A positive relationship between the gatekeeper and the researcher is vital to the success of the research. This relationship should begin early in the research process rather than be forced during tight timelines. Researchers need to build this into their timelines as often it takes longer than one might anticipate developing. Researchers conducting case study research should also look beyond the immediate context to consider key relationships that have a bearing on the outcome of research uptake.
- **methodological considerations:** Issues concerning compatibility were raised when gatekeepers questioned whether the proposed project was case study research or a program review. There is a clear need to address this concern by providing a thorough explanation of case study research and its relevance in the context of a level II NICU.
- **needs/mission alignment:** Challenges with needs/mission alignment stemmed from not having prior knowledge of the institution's goals and needs which made it difficult to demonstrate reciprocity. Engaging with gatekeepers early in the research process and researching the implementation climate would have led to an understanding of factors that influence the support of research in the inner setting of an institution, particularly mission alignment.
- **action plans:** Using Gibb's Reflective Cycle led to the development of action plans that would serve to assist future research endeavours of a similar nature.

Recognizing the difficulty securing gatekeeper support and combining key learnings from retrospective reflection, I am compelled to be transparent about the presuppositions that impacted my approach and decision throughout the research. Initially, I assumed that having a detailed and lengthy proposal would inherently secure gatekeeper support, assuming that the depth and consideration given to the research plan would entice them to support it. Furthermore, I believed that relaying my personal perspective and enthusiasm for the proposal would be sufficient to generate intrigue and foster support from the gatekeepers. There was an underlying assumption that my affiliation with a major research university and seasoned researcher would automatically afford me the access necessary to the successful completion of my research, which led to my underestimation of the consideration that gatekeepers must make when determining support for research. Additionally, as a healthcare professional, I presupposed that my healthcare background would provide me with an advantageous position in gaining gatekeeper access, and on some level would be seen as 'an insider'. Lastly, I operated on the presupposition that possessing external ethics approval and funding would be instrumental in securing ethics approval at the hospitals. Recognizing these presuppositions, as I reflect, has broadened my understanding of how researcher biases can influence the outcome of research. As a result, I have grown professionally, having a heightened awareness and ability to approach future work in a more objective way.

Overall, it is important to consider why projects encounter barriers in conducting research and the facilitators that distinguish successful projects from unfulfilled projects. The CFIR has been paramount in providing this information especially when combined with retrospective reflection and Gibb's Reflective Cycle (1988). The focus on

understanding contextual factors affecting research implementation prompts a closer look at gatekeeper relationships and their capacity to support massage therapy research both within research and healthcare. I believe that within my own experience, the research could have been enhanced by utilizing the CFIR framework a priori to develop an understanding of contextual factors affecting the implementation of research. A key challenge emerged from the absence of prior relationships with gatekeepers, leading to misunderstandings between the researcher and the institution.

Delving into the realm of gatekeeper relationships, it has been established throughout my reflective process that gatekeepers play a vital role in determining research uptake. As a prerequisite for determining how and when massage therapy as a therapeutic treatment might be adopted in the NICU, it is imperative to understand what role gatekeepers play within this context. Gatekeepers are an essential part of the context I was hoping to study, and according to Clark et al. (2021), it is important to understand the context at the local level. In my research, this would have been accomplished by involving the gatekeepers and interested parties prior to developing a full-scale research proposal. More precisely, Clark et al. (2021) state that "relevant studies should develop a knowledge base about how interventions are integrated within diverse practice settings and patient populations, which will require more than the distribution of information about intervention effectiveness" (p. S8). As an example of this, the Veterans Health Administration (VHA) in the United States conducted a study in 2021 that assessed the status of past research projects to explore which factors were key to determining the successful implementation of those projects (Dodge et al., 2023). Their results identified two "difference makers" that determined whether a project was either fully or partially

implemented. The first is engagement with operational leadership in the VHA. The second difference maker is the support and commitment of operational leaders in the VHA locally. It is important to note that neither difference maker was dependent upon the other. The uptake of research by operational leaders has been recognized over time as an instrumental component of success (Kilbourne & Atkins, 2014). In fact, the VHA's director of Quality Enhancement Research Initiative (QUERI) "urged health services investigators to "partner or perish" and called on the research community to "actively promote alliances with program partners, and to ensure that frontline providers are actively involved in the development and implementation of new research initiatives to ensure uptake and impact" (Kilbourne & Atkins, 2014, p. S819). The importance of partnerships with operational leaders through interprofessional collaborations must be emphasized with novice researchers given its importance in the research process.

Professional Development and Building Research Opportunities for TCAM Providers

This next section explores how massage therapists and TCAM providers are situated within mainstream healthcare and research, including barriers and opportunities, and what is being done to encourage engagement in research for the massage therapy profession. These reflections will provide insight for future massage therapy researchers and institutions (both academic and regulatory) to advance professional collaboration and research.

TCAM in Mainstream Healthcare Education

Registered Massage Therapists have been regulated under the RHPA (Regulated Health Professions Act) since 1991, their practice is one of the fastest-growing modalities within complementary and alternative (CAM) therapies in North America (Fournier &

Reeves, 2012) and the most widely used type of therapy by Canadians in 2016 (Esmail, N., 2017). Additionally, "despite the developing evidence for the role of massage therapy in healthcare and patient/public demand for this service, it remains on the periphery of mainstream health care" (Fournier & Reeves, 2012). While the reasons for this are multifactorial, exploring concepts specifically related to interprofessional collaboration and research may benefit those wishing to pursue similar research including barriers and opportunities.

Barriers

Fournier & Reeves (2012) conducted an exploratory case study to investigate health professionals' views of perceived barriers to increased professionalization, status and interprofessional collaboration in relation to massage therapy. The barriers identified in this study include problematization of the term "massage," lack of knowledge about massage therapy regarding the scope of practice, education and regulation, exclusion, and hierarchy among healthcare professionals. While including education specific to TCAM for mainstream practitioners within their own educational streams, as mentioned earlier, may help alleviate concerns related to understanding the term "massage" and the scope of practice and regulation, it does not directly amend the issues associated with exclusion and hierarchy. Additionally, much of the research involving TCAM considers many modalities that are not regulated and unproven through evidence-based research. It is a careful balance between educating healthcare providers on the benefits and risks of TCAM and how they may complement mainstream healthcare. Since TCAM encompasses complementary *and* alternative therapies, it is important to distinguish that not all forms of complementary therapy are alternative to mainstream healthcare; rather, they can complement existing healthcare treatments. Additionally, alternative therapies

are not complementary since patients using alternative forms of healthcare are using them *instead* of mainstream healthcare.

Exclusion and hierarchy perceptions are directly related to gaining support from operational leaders. Hollenberg et al. (2011) discuss Integrative Medicine (IM) and Traditional, Complementary and Alternative Medicine (TCAM) in Canadian hospitals in a multi-site case study and reveal that a "paradigm shift" is necessary to integrate biomedicine and TCAM both culturally and structurally. They highlight the need to include TCAM providers in interprofessional education projects and the need to adjust structural and cultural barriers within Canadian hospitals. Integrating education about TCAM into the mainstream healthcare classroom without performing collaborative projects may not be enough, as this does not promote true partnership and understanding. Similarly, "the exclusion of TCAM professions from interprofessional education (IPE) and collaboration (IPC) is a serious detriment to hospital-based TCAM" (Hollenberg, 2011, p. 5). For example, the views of TCAM providers by hospital administration in this study varied from extremely negative and pessimistic to supportive and optimistic (Hollenberg et al., 2011). In one interview, a senior hospital administrator stated that "the hospital would never implement a therapy this is not "proven" (Hollenberg et al., 2011, p. 4). TCAM was viewed as nineteenth-century charlatanism, as placebo, and as "purely exploiting people in selling a product" (Hollenberg et al., 2011, p. 4). There was a general unawareness regarding the level of education, years of study and training, and research supporting the effectiveness of TCAM treatments. Additionally, there was a belief that TCAM practitioners had only invested a few weeks into learning their modality (Hollenberg et al., 2011). While these issues are structurally inherent, they may play a

vital role in how TCAM is viewed and accepted in terms of practice and research activities within some hospitals.

Novice researchers in TCAM hoping to break through and contribute to the base of knowledge that will further science and bestow confidence in their professional capabilities, are hindered by the uphill battle of perception and misinformation. As stated by another senior hospital leader from a large hospital in the study by Hollenberg et al. (2011), "opposition to hospital-based TCAM included fear of change, uninformed clinical education committees and a restrictive hospital bureaucracy that restricts permission for creative and novel ideas" (p. 5-6). Despite some negative views of TCAM providers, there were some optimistic views. In the Hollenberg et al. (2011), perceptions of TCAM were positive when there was evidence of strong leadership among TCAM leaders and biomedical gatekeepers, both at the community and provincial levels. At one of the hospitals in the study by Hollenberg et al. (2011), massage therapy was introduced as a therapeutic treatment by a senior hospital leader through political will and interest in the TCAM modality.

Opportunities

I am continually inspired by the advances made by TCAM in recent years and the future direction of TCAM practice, research, and education. Perhaps the most widely studied area of massage therapy integrated into primary healthcare is that of oncology-related massage therapy. As an example, patient-centered initiatives have led to the recognition of values that patients and families ascribe to integrating TCAM therapies into cancer care. Patient advocacy groups have also been integral in advocating for the inclusion of TCAM therapies (Truant et al., 2015). Furthermore, oncology nurses play a significant role in closing the gap between the TCAM needs of patients and families and

the integration of TCAM into treatment. Practice standards and competencies related to TCAM for the Canadian Nurses Association (CNA) and the Canadian Association of Nurses in Oncology (CANO) include "providing ongoing assessment, teaching and coaching, evidence-informed decision support, referral to other CAM resources and/or health professionals, and the monitoring, evaluation, and documentation of CAM decision-making and use" (Truant et al., 2015, p. 208). Nurses, while underpinned by a biomedical philosophy, have the foundational knowledge to support evidence-based TCAM therapies and guide decision-making by patients (Truant et al., 2015). Nurses are paramount in bridging the gap between patient needs, values, beliefs, and goals with those of TCAM therapies. An initiative that highlights this collaboration is the nurse-led and developed program called the Complementary Medicine Education and Outcomes (CAMEO) research program which studies the complementary and alternative medicine (CAM) needs of people living with cancer, their support persons, and healthcare providers (CAMEO, 2023). While this does not entail the 'true integration' of TCAM practitioners into mainstream healthcare, it provides a strong evidence base for the benefits of those therapies.

In the realm of true integrative medicine, which blends mainstream medical therapies with TCAM (Patterson & Arthur, 2008), the Ottawa Integrative Cancer Centre (OICC) serves as an exemplary model for true integration in a community-based center. The OICC uses a wide range of TCAM and mainstream healthcare practitioners to promote a holistic approach to cancer care, specifically massage therapy. While the OICC delivers care in the context of community health, it serves as an example of what can be accomplished by collaborating across disciplines and building sustainable relationships

among healthcare professionals. In terms of Massage therapists providing massage therapy treatments in hospitals, a study in 2015 that focused on the professional role of massage therapists in patient care in Canadian urban hospitals revealed that 42 RMTs across 15 sites participated in hospital-based massage therapy practices. These practices ranged from team member, program/clinic support, educator, promoter of the massage therapy profession, and researcher (Kania-Richmond et al., 2015). While these represent urban settings and depict the inclusion of RMTs in hospital-based care, research related to rural hospitals is indicated for future study. Additionally, it was expressed by participants in this study that interest in developing a Hospital-Based Practice Network would be beneficial to support further development in this context. This is yet another area of research that could be explored in the future, as this has not been formed since the conclusion of the abovementioned research. The results of this study support the value that massage therapy has in hospitals, and its implications can be carried over to support the value of my research: that massage therapy is beneficial for patients, can be integrated into patient care, can be part of an interprofessional approach, and can be implemented within a hospital setting.

Another example of a positive relationship between a hospital and massage therapy exists at Canuck Place Children's Hospice in Vancouver, Canada, which has senior massage therapy students supervised by a Registered Massage Therapist working in their hospice setting since 2011. The role of the students performing massage was to improve the wellness of the entire team providing care to the children in hospice. Family members, patients and staff at the hospital had access to massages without financial barriers, though this is likely because it was students providing the massage; nevertheless,

the benefits were received. This program offered practical and psychological benefits to those who chose to use it and was seen as a reflection of the "organization's commitment to supporting both the physical and psychosocial wellness of employees, caregivers, and children" (Egeli et al., 2019, p. 323). Furthermore, this study is reflective of the need and value within organizations fostering "family-centered, holistic values that aim to optimize QOL [quality of life] and support the entire care team [through] an innovative, open, and inclusive environment well suited to incorporating a range of safe complementary services alongside standard medical care" (p. 323).

A final example of massage integrating with community-based primary healthcare is a recent pilot study in Toronto, Ontario which has two aims: 1) improving the outcomes of patients while reducing or eliminating pain, improving joint mobility, and reducing muscular tension by offering registered massage therapy, and 2) to verify the health and cost benefits of integrating therapeutic massage into primary care teams (RMTAO, 2023). This is a partnership between West Toronto Community Health and the Registered Massage Therapists Association of Ontario (RMTAO) for the benefit of those with mental health and addiction concerns. Of special importance is the fact that WTCHS is fully funded by the province of Ontario, which is not how RMTs are typically paid. Furthermore, this may present an opportunity to explore the financial pathway to integrating massage therapy into mainstream care under the Ontario Health Insurance Plan (OHIP). Advocacy work continues in Ontario, with the president of the RMTAO requesting that RMTs be integrated into Family Healthcare Teams (FHTs) and Community Health Centres (CHCs) to complement the primary healthcare system (RMTAO, 2023).

As RMTs continue to demonstrate the value of their treatments, for a variety of patient needs, integrating massage therapy into mainstream healthcare is on the horizon. Expanding research capacity and the evidence base to support the integration of massage therapy into mainstream healthcare is a key and necessary foundation for the profession to continue to evolve as a recognized healthcare profession (Kania-Richmond et al., 2017, p. 275). The next section of this discussion is dedicated to discussing how education is a vehicle for change for integrating massage therapy and the uptake of research activities.

Future Directions

Engaging gatekeepers and operational leaders to better situate massage therapy research and in healthcare requires that opportunities exist to foster inclusion. This can be accomplished through education and collaborative activities both at the university level and the college level and will be explored in forthcoming sections.

Education as a catalyst for change

This discussion will finish by considering how education can foster change both institutionally and professionally. In fact, "the use of educational strategies to promote engagement with research is not unique to CAM and has been reported widely across a range of health disciplines" (Veziari et al., 2021, p. 7). In 2021, a scoping review by Veziari et al. addressing barriers to the conduct and application of research in complementary and alternative medicine was performed. Of the fifteen studies included in their scoping review, all pointed to two major enabling strategies: education and collaborative activities. Further, the collaborative activities enabling research included collaborations between TCAM institutions and traditional research intensive (TRI) institutions and the formation of practice-based research networks (PBRN). Strategies for

these included “crossinstitutional research training, a research mentorship for CAM students and evaluating best practice models for implementing curricular and culture change” (Veziari et al., 2021, p. 7). There were benefits reported by faculty, students, practitioners, and institutions, including improving culture and relationships, developing a better understanding among faculty regarding TCAM and traditional research paradigms, and developing future collaborations (Veziari et al., 2021). These evolving collaborations are what will help promote the uptake of research and strengthen the position of TCAM providers conducting research. CAM-TRI education exists in Canada, though sparse at best, is seen across the country and resides mainly in the western half of the country. For example, to name a few:

- University of Manitoba – Integrative Medicine in Residency Program
- University of British Colombia – Research and Experimental Development
- Trent University and Canadian College of Naturopathic Medicine
- University of Alberta – Complementary and Alternative Research & Education Program

While these programs are aimed at research within the scope of TCAM, they do not necessarily include TCAM practitioners themselves. The Ontario Universities’ Application Centre (OUAC) provides an overview of collaborative University and College programs, yet none exist in colleges where massage therapy is taught in the Ontario context (OUAC, 2023). Indeed, there exists an opportunity to improve the number of collaborations between TCAM institutions and Universities. This will improve knowledge generated about TCAM within and amongst future healthcare professionals

receiving university education and improve the opportunities for RMTs (Registered Massage Therapists) to conduct research.

Community colleges and polytechnic institutes are well-situated to involve students in research through applied research opportunities. In applied research, students work alongside employers or community partners and faculty to solve problems related to community needs. In March 2023, the importance of applied research in supporting business innovation and propelling growth was made abundantly clear by the Government of Canada. The Federal Budget for 2023 included $108.6 million in new funding for Canadian polytechnics and colleges (Polytechnics Canada, 2023). Industries interested in applied health research partnerships vary from natural resources, food service, advanced manufacturing, and healthcare, to name a few. Polytechnics Canada "is the voice of leading research-intensive, publicly supported polytechnics, colleges and institutes of technology" (Polytechnics Canada, 2023). Current members of Polytechnics Canada include British Columbia Institute of Technology, Kwantlen Polytechnic University, Northern Alberta Institute of Technology, Southern Alberta Institute of Technology, Saskatchewan Polytechnic, Red River College Polytechnic, Fanshawe College, Conestoga College, Sheridan, Humber, George Brown, Seneca, and Algonquin College (Polytechnics Canada, 2023). Considering that some massage therapists obtain their education through community colleges, opportunities exist to leverage relationships for conducting research or to develop ideas with community partners. Engaging in applied MT research may help close gaps within healthcare and act as a vehicle for educating healthcare partners and operational leaders about massage as a therapeutic intervention.

Building programs and opportunities for massage therapy students and faculty to engage in research at the community level will help increase the existing evidence base currently available. This will also serve to support and sustain research capacity within the profession and improve interprofessional collaborations and relationships.

Building and Sustaining Research Capacity

A formative evaluation was conducted in 2017, which highlighted what is needed within the massage therapy profession to sustain and build research capacity given that research activity and research-informed massage therapy practice within the field are more recent strategic developments and are a key priority of development (Kania-Richmond et al., 2017). By increasing the evidence-base of massage therapy research, the profession can continue to secure a place within the healthcare system. Kania-Richmond et al. (2017) evaluated the requirements needed to enhance research activity within the Canadian context and are based on the recommendations from a massage therapy special interest group (MT-SIG) associated with IN-CAM. IN-CAM is a Canadian non-profit interdisciplinary research network for complementary and alternative medicine (IN-CAM, 2023). Five themes were identified as necessary for the development of an infrastructure to support massage therapy research. Themes included: 1) core components, 2) variable components, 3) varying perspectives of stakeholder groups, 4) barriers to creating research infrastructure in the field of MT, and 5) negative metaphors that emerged in relation to initiating and/or advancing MT research (Kania-Richmond et al, 2017). In consideration of these themes, a variety of suggestions were made by the MT-SIG, which are discussed more broadly below.

Collaboration in Research and Education

In terms of building and supporting a research culture and infrastructure, the need to have appropriately trained researchers at the Master's and Ph.D. levels to produce reliable and methodologically sound research, with the ability to secure funding from large institutions, was a core component (Kania-Richmond et al., 2017). Having researchers with experience applying for national funding (i.e., the CIHR and the Social Science and Humanities Health Research Council) would help secure higher amounts of funding from high-profile government bodies (Kania-Richmond et al., 2017). This, in turn, will lead to positive attention being given to the work being done (Kania-Richmond et al., 2017). Until there is a larger community of massage therapy researchers, collaboration with established researchers and institutions will be necessary for rigorous research. The CAM-TRI education in place, as mentioned above, promotes research within the scope of TCAM but does not necessarily include TCAM professionals directly. It is thought by the MT-SIG that "collaborations with stakeholders within the MT profession are important to ensure validity, relevance, and effective knowledge translation of research findings" (Kania-Richmond et al., 2017, p. 279). In other words, "it should be led by research-trained MTs to reflect the perspectives and values of the profession" (Kania-Richmond et al., 2017, p. 279). Additionally, as one participant from the MT-SIG mentions, "development of a sustainable and productive research infrastructure needs to be aligned with or fit into established research and education systems, as these have established structures and processes to support rigorous and credible research activity" (Kania-Richmond et al., 2017, p. 278). In relation to credibility, these included factors such as "the individual conducting the research; (of) the organization(s) funding research; and the institution where the research is conducted,

which provides the structures and process to support and enable rigorous research activity" (Kania-Richmond et al., 2017, p. 278).

Reflecting on my own research process, having these factors in place does enable rigorous research to be created; however, it does not necessarily secure the enactment of research which the previous sections of this discussion allude to. Additionally, for RMTs to engage more in research, there needs to be a greater commitment to supporting them, such as tuition support, scholarships, and research project funding (Kania-Richmond et al., 2017). If massage therapy research is to truly create a research culture, it needs to also embed RMTs that have advanced research training into existing academic institutions. The MT-SIG suggests directly "supporting the establishment and funding of research positions, such as professorships, research chairs, and focused MT programs of research, which may lead to the development of structures such as institutes or "centers of excellence" (Kania-Richmond et al., 2017, p. 281). There have been several massage therapy research projects successfully completed in academic institutions under the supervision of non-RMTs; however, these research endeavors might be approached from a lens other than massage therapy. In fact, massage research is rarely conducted by a massage therapist and, if it does happen, is regarded as the exception rather than the norm (Green et al., 2009; Kania-Richmond et al., 2017; Rivera & Birnbaum, 2010).

Taking a Step Forward

Not only does there need to be a shift external to TCAM institutions that promote collaboration in research and education, but there also needs to be a shift within the culture and institutions that teach massage therapy to support research. In fact, "massage therapy education remains largely vocational rather than academically based and typically lacks a research curriculum" (Kania-Richmond et al., 2017, p. 282). While

outreach programs where students provide massage to community members are beneficial, opportunities exist for improving understanding of the educational requirements of RMTs, evidence related to massage, and opportunities for integrative healthcare beyond volunteer positions as part of an interdisciplinary healthcare team. Having meaningful conversations with key senior leadership personnel in health science about the needs within massage therapy programs and what might be done to achieve those needs is crucial. Strategies could include the development of a qualitative research course and fostering community partnerships which will allow students to demonstrate their research skills while advocating the benefits of massage therapy from an evidence-based perspective. This could further strengthen massage therapists' relationships with gatekeepers in various settings and can be viewed as an extension of what Polytechnics Canada supports through applied research. It would also be advantageous if training programs introduced students to implementation science. Implementation science knowledge can be used to help facilitate the implementation of interventions and by researchers as an a priori method to circumvent barriers to research in complex settings.

Chapter Five – Conclusions

"Every new beginning comes from some other beginning's end" – Seneca

Case studies are grounded in real-life situations, providing a comprehensive view of the environment, and playing an important role in expanding the knowledge base in a specified area, and, as such, is an appealing design for applied fields of study (Merriam, 2009). While this is a new study within the Canadian context, it is critically important to have the support of gatekeepers, operational leaders, and frontline professionals in the Level II NICU during all phases of research. Using the CFIR and the implementation climate construct to better understand the context and climate of the NICU has the potential to gauge gatekeeper needs which may lead to a positive researcher-gatekeeper relationship. Once gatekeeper access is secured and the research conducted, the likelihood of a Level II NICU being identified as a project champion increases. Acquiring knowledge concerning the implementation climate within the NICU will support four significant achievements:

- engage operational leadership and frontline providers
- gain support and commitment for research success
- develop a deeper understanding of the needs within a specific NICU environment
- advance professional collaboration

Acquiring knowledge about what is required to build and sustain a research culture within massage therapy rests on the following:

- improving opportunities for collaboration with research institutions and community partners
- incorporating education about TCAM into mainstream healthcare education

Using my research as an example, students and professionals can learn about the elements within case study methodology, not only for healthcare but for a variety of disciplines conducting case study research. Furthermore, by utilizing the CFIR framework to understand the implementation climate, new researchers will be better positioned to understand factors that influence the interest and support of their research by gatekeepers. Engaging operational leaders and gatekeepers in the local context of a research study is an instrumental component of success. Interprofessional collaboration and education are indispensable in dismantling barriers inherent in TCAM and massage therapy regarding research opportunities and improving relationships with key partners. For researchers operating independently without institutional affiliations, TRI-CAM collaborations can foster a positive research relationship and lead to improved conduct of rigorous research. For faculty and students associated with community colleges or polytechnic institutes, engaging with community partners to perform research and meet partner needs in healthcare will be beneficial to cultivating a rich research culture while also improving the conduct of rigorous and methodologically sound research.

Embracing vulnerability in the face of challenges experienced throughout the research process, facilitated by reflective practice, has enabled an authentic and transparent account of elements to be considered while undertaking research similar in nature. I hope that those reading this thesis are inspired to embrace their vulnerability to allow for an honest exploration of their experiences and challenges.

Chapter Six - Future Research

"Progress is impossible without change, and those who cannot change their minds cannot change anything" – George Bernard Shaw

In future research, particularly when aiming to conduct research in a large institution like that of a local hospital, and within a specific area like the level II NICU, it is crucial to understand the larger context that it resides within. This will require the need for a separate study. Given the novelty of NICU massage research in the Canadian context, a comprehensive understanding of the local context becomes essential in gaining support for research uptake and needs to be researched prior to developing a research proposal. The implementation climate construct within the Consolidated Framework for Implementation Science (CFIR) offers a valuable framework for exploring the sub-constructs shown to influence the successful implementation of research. By addressing factors related to the inner setting of a specific context, the researcher will have the opportunity to engage operational leaders and begin to develop positive relationships early in the research process. This will foster mutual understanding and collaboration between both parties. Engaging with operational leaders proactively in the early stages of research and comprehensively understanding the implementation climate prior to conducting research in a specific context introduces a crucial shift away from the notion that research follows a straightforward path. It allows researchers to navigate and negotiate the complexities of engaging in research in a complex care environment to better prepare their proposal and minimize the impact of barriers to research.

References

Albert, M., Laberge, S., Hodges, B. D., Regehr, G., & Lingard, L. (2008). Biomedical scientists' perception of the social sciences in health research. *Social Science & Medicine* (1982), 66(12), 2520–2531. https://doi.org/10.1016/j.socscimed.2008.01.052

Álvarez, M. J., Fernández, D., Gómez-Salgado, J., Rodrigues-González, D., Rosón, M., & Lapeña, S. (2017). The effects of massage therapy in hospitalized preterm neonates: Systematic Review. *International Journal of Nursing Studies, Apr (69),* 119-136 https://doi.org/10.1016/j.ijnurstu.2017.02.009

Bauer, M., Damschroder, L., Hagedorn, H., Smith, J., & Kilbourne, A. M. (2015). An introduction to implementation science for the non-specialist. *BMC Psychology*, *3*(1), 32–32. https://doi.org/10.1186/S40359-015-0089-9

Braun, V., & Clarke, V. (2013). Successful qualitative research: a practical guide for beginners. SAGE.

Braun, V., & Clarke, V. (2021). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research*, *21*(1), 37–47. https://doi.org/10.1002/capr.12360

Braun V., Clarke V., Hayfield N., & Terry G. (2019) Thematic Analysis. In: Liamputtong P. (eds) Handbook of Research Methods in Health Social Sciences. Springer, Singapore. https://doi.org/10.1007/978-981-10-5251-4_103

Quinn, F. M. (1988). Reflection and Reflective Practice. In A. Bullman, C. Davies & L. Finlay (Eds.), Changing Practice in Health and Social Care (pp. 81-90). Sage

CAMEO. (2023). *CAMEO at a Glance.* http://cameoprogram.org/about-cameo/

Canadian Institute for Health Information (2020). *Childbirth Indicators by Place of Residence*. https://www.cihi.ca/en/searchquery=childbirth+indicators+by+place+of+residence

Canadian Institute of Health Research. (2021). *Strategy for Patient-Oriented Research.* https://cihr-irsc.gc.ca/e/41204.html

Canadian Premature Babies Foundation. (2014). *Premature Birth in Canada: An Environmental Scan Recommendations for the Canadian Premature Babies Foundation – Fondation pour Bébés Prématurés Canadiens.* https://257b4d0e-209c4bf48fe6cb0197d405db.filesusr.com/ugd/97627d_790a4a14ff014c87a8c2c4a702fe2877.pdf

Chang, H., Mashimo, H., & Goyal, R. (2003). Musings on the wanderer: What's new in our understanding of vago-vagal reflex? IV. Current concepts of vagal efferent projections to the gut. American Journal Physiology and Gastrointestinal Liver Physiology, 284, G357–366. https://doi.org/10.1152/ajpgi.00478.2002

Children's Hospital London Health Sciences Centre. (2022). *Neonatal Intensive Care Unit: What is Family Integrated Care (FICARE).* *https://www.lhsc.on.ca/nicu/what-is-family-integrated-care-ficare*

Clark, D., Edwards, E., Murray, P., & Langevin, H. (2021). Implementation Science Methodologies for Complementary and Integrative Health Research. *Journal of alternative and complementary medicine (New York, N.Y.)*, *27*(S1), S7–S13. https://doi.org/10.1089/acm.2020.0446

Clark, T. (2011). Gaining and Maintaining Access: Exploring the Mechanisms that Support and Challenge the Relationship between Gatekeepers and Researchers. *Qualitative Social Work*, 10(4), 485–502 https://doi.org/10.1177/1473325009358228

College of Massage Therapists of Ontario. (2020). *Annual Report 2020 – Focusing on Client-Centred Care and Resilience in the Pandemic*. https://www.cmto.com/aboutcmto/corporatedocuments/#:~:text=2020%20Annual%20Report-,PDF%20Version,-Version%20fran%C3%A7aise

Collier, E. (2022, December 11). Champions in Healthcare: Role and Responsibilities. High Speed Training. https://www.highspeedtraining.co.uk/hub/champions-in-healthcare/

Consolidate Framework for Implementation Research. (2023). *Constructs.* *https://cfirguide.org/constructs/*

Consolidate Framework for Implementation Research. (2023). *Constructs: Inner Setting.* *https://cfirguide.org/constructs/inner-setting/*

Critical Care Services Ontario. (2023). Neonatal Intensive Care https://criticalcareontario.ca/about/neonatal-intensive-care/

Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science: IS*, *4*(1), 50–50. https://doi.org/10.1186/1748-5908-4-50

Damschroder, L., Reardon, C. M., Widerquist, M. A. O., & Lowery, J. (2022). The

updated Consolidated Framework for Implementation Research based on user feedback. *Implementation Science*: IS, 17(1), 1–75. https://doi.org/10.1186/s13012-022-01245-0

Das, U. G., & Sysyn, G. D. (2004). Abnormal fetal growth: Intrauterine growth retardation, small for gestational age, large for gestational age. *Pediatric Clinics of North America, 51*(3), 639-654. https://doi.org/10.1016/j.pcl.2004.01.004

De Laine, M. (2000) Fieldwork, Participation and Practice: Ethics and Dilemmas in Qualitative Research. Thousand Oaks, CA: SAGE

Dodge, J. R., Youles, B., Caldararo, J., Sears, E. D., Caverly, T. J., Michael Ho, P., Shimada, S. L., Kaboli, P., Albright, K., Robinson, S. A., McNeal, D. M., Damschroder, L., Saini, S. D., & Adams, M. A. (2023). Engaging Operational Partners Is Critical for Successful Implementation of Research Products: A Coincidence Analysis of Access-Related Projects in the Veterans Affairs Healthcare System. *Journal of general internal medicine*, *38*(Suppl 3), 923–930. https://doi.org/10.1007/s11606-023-08115-5

Dryden, T., Sumpton, B., Shipwright, S., Kahn, J., & (Findlay) Reece, B. (2014). Massage Therapy and Canadians' Health Care Needs 2020: Proceedings of a National Research Priority Setting Summit. *International Journal of Therapeutic Massage and Bodywork Research Education & Practice, 7(1)*, 3-10. http://dx.doi.org/10.3822/ijtmb.v7i1.228

Egeli, Bainbridge, L., Miller, T., & Potts, J. (2019). Interdisciplinary Perspectives on the Value of Massage Therapy in a Pediatric Hospice. Journal of Hospice and Palliative Nursing, 21(4), 319–325. https://doi.org/10.1097/NJH.0000000000000576

Esmail, N. (2017). *Complementary and Alternative Medicine: Use and Public Attitudes, 1997, 2006, and 2016*. The Fraser Institute. Retrieved from Politics Collection https://www.lib.uwo.ca/cgibin/ezpauthn.cgi?url=http://search.proquest.com/reports/complementary-alternative-medicine-use-public/docview/1918304842/se-2

Field, T., & Diego, M. (2008). Vagal Activity, Early Growth and Emotional Development. *Infant Behaviour and Development, 31(3),* 361-373. https://doi.org/10.1016/j.infbeh.2007.12.008

Field, T., Diego, M., & Hernandez-Reif, M. (2010). Preterm infant massage therapy research A review. *Infant Behaviour and Development, 33(2)*, 115-124. https://doi.org/10.1016/j.infbeh.2009.12.004

Field, T., Hernandez-Reif, M., & Freedman, J. (2004). Stimulation programs for preterm infants. *Social Policy Report, 18*, 1-19.

Finlay, L. (2008). Reflecting on 'Reflective Practice'. *Practice-based Professional Learning Paper 52*. The Open University.

Fournier, C., & Reeves, S. (2012). Professional status and interprofessional collaboration: A view of massage therapy. *Journal of Interprofessional Care*, *26*(1), 71–72. https://doi.org/10.3109/13561820.2011.606380

Glaser, B. G. (2002). Conceptualization: On Theory and Theorizing Using Grounded Theory. International Journal of Qualitative Methods, 1(2), 23–38. https://doi.org/10.1177/160940690200100203

Glaser, B., & Strauss, A. (1967). The discovery of grounded theory: Strategies for qualitative research (Reprinted 2006 ed.). London, UK: Aldine Transaction.

Gleeson, D., Arwyn-Jones, J., Awan, M., White, I., & Halse, O. (2020). Medical Student Schwartz Rounds: A Powerful Medium for Medical Student Reflective Practice. *Advances in medical education and practice*, *11*, 775–780. https://doi.org/10.2147/AMEP.S273181

Gómez-Cantarino, S., García-Valdivieso, I., Moncunill-Martínez, E., Yáñez-Araque, B., & Ugarte Gurrutxaga, M. I. (2020). Developing a Family-Centered Care Model in the Neonatal Intensive Care Unit (NICU): A New Vision to Manage Healthcare. *International Journal of Environmental Research and Public Health*, *17*(19), 7197–. https://doi.org/10.3390/ijerph17197197

Green, L., Ottoson, J. M., Garcia, C., & Hiatt, R. A. (2009). Diffusion Theory and Knowledge Dissemination, Utilization, and Integration in Public Health. *Annual Review of Public Health*, *30*(1), 151–174. https://doi.org/10.1146/annurev.publhealth.031308.100049

Guba, E.G., & Lincoln, Y. S. (1981). Effective evaluation. Jossey-Bass Publishers.

Guba, E.G., & Lincoln, Y.S. (1994). Competing paradigms in qualitative research. In N.K. Denzin & Y.S. Lincoln (Eds.), *Handbook of qualitative research* (1st edition) (pp.105-117). Thousand Oaks, CA: Sage.

Guillemin, M., & Gillam, L. (2004). Ethics, reflexivity and 'ethically important moments' in research. *Qualitative Inquiry, 10*(2), 261-280.

Hollenberg, D., Tsasis, P. & Kelley, N. (2011). CAM in Canadian Hospitals: The New Frontier? *Journal of Complementary and Integrative Medicine*, *8*(1), 1-20. https://doi.org/10.2202/1553-3840.1466

Høyland, Hollund, J. G., & Olsen, O. E. (2015). Gaining access to a research site and

participants in medical and nursing research: a synthesis of accounts. *Medical Education*, *49*(2), 224–232. https://doi.org/10.1111/medu.12622

Hunter, C. L. (2018). Gauging the Gatekeepers: Negotiating Anthropological Research in a Tertiary Level Australian Hospital: Failure, Fallout, and a Change in Direction for Paediatric Cardiac Research. *Zeitschrift Für Ethnologie*, *143*(2), 137–152. https://www.jstor.org/stable/26899768

IN-CAM Research Network (2023). https://www.incamnetwork.ca/

Juneau, A.L., Aita, M., & Heon, M. (2015). Review and critical analysis of massage studies for term and preterm infants. Neonatal Network, 34(3), 165-177. https://doi.org/10.1891/0730-0832.34.3.165

Kania-Richmond, A., Menard, M. B., Barberree, B., & Mohring, M. (2017). "Dancing on the edge of research"- What is needed to build and sustain research capacity within the massage therapy profession? A formative evaluation. *Journal of Bodywork and Movement Therapies*, *21*(2), 274–283. https://doi.org/10.1016/j.jbmt.2016.06.019

Kania-Richmond, A., Reece, B. F., Suter, E., & Verhoef, M. J. (2015). The professional role of massage therapists in patient care in Canadian urban hospitals - a mixed methods study. BMC Complementary and Alternative Medicine, 15(1), 20–20. https://doi.org/10.1186/s12906-015-0536-4

Kenny, M., & Fourie, R. (2015). Contrasting Classic, Straussian, and Constructivist Grounded Theory: Methodological and Philosophical Conflicts. Qualitative Report, 20(8), 1270–1289. https://doi.org/10.46743/2160-3715/2015.2251

Kilbourne, A. M., & Atkins, D. (2014). Partner or Perish: VA Health Services and the Emerging Bi-Directional Paradigm. *Journal of General Internal Medicine*, *29*, 817–819. https://doi.org/10.1007/s11606-014-3050-3

Kinsella, E. A. (2001). Reflections on Reflective Practice. *Canadian Journal of Occupational Therapy (1939)*, *68*(3), 195–198. https://doi.org/10.1177/000841740106800308

Kinsella E. A. (2007). Technical rationality in Schön's reflective practice: dichotomous or non-dualistic epistemological position. *Nursing philosophy : an international journal for healthcare professionals*, *8*(2), 102–113. https://doi.org/10.1111/j.1466-769X.2007.00304.x

Kirk, M.A., Kelley, C., Yankey, N. *et al.* A systematic review of the use of the Consolidated Framework for Implementation Research. *Implementation Sci* **11**, 72 (2015). https://doi.org/10.1186/s13012-016-0437-z

Lim, Tracey, J., Boom, N., Karmakar, S., Wang, J., Berthelot, J.-M., & Heick, C. (2009). CIHI Survey: Hospital Costs for Preterm and Small-for-Gestational Age Babies in Canada. *Healthcare Quarterly (Toronto, Ont.)*, *12*(4), 20–24. https://doi.org/10.12927/hcq.2013.21121

Lincoln, & Guba, E. G. (1985). Naturalistic inquiry. Sage Publications.

London Health Sciences Centre. (2022). *What is Family Integrated Care (FICARE).* Neonatal Intensive Care Unit. https://www.lhsc.on.ca/nicu/what-is-family-integrated-care-ficare

Lu, L., Lan, S.-H., Hsieh, Y.-P., Lin, L.-Y., Chen, J.-C., & Lan, S.-J. (2020). Massage therapy for weight gain in preterm neonates: A systematic review and meta-analysis of randomized controlled trials. *Complementary Therapies in Clinical Practice*, *39*, 101168–101168. https://doi.org/10.1016/j.ctcp.2020.101168

Marchini, G., Lagercrantz, H., Feuerberg, Y., Winberg, J., & Uvnäs-Moberg, K. (1987). The effect of non-nutritive sucking on plasma insulin, gastrin, and somatostatin levels in infants. *Acta paediatrica Scandinavica*, *76*(4), 573–578. https://doi.org/10.1111/j.1651-2227.1987.tb10523.x

Marecek, J. (2011). Numbers and interpretations: What is at stake in our ways of knowing? *Theory & Psychology*, *21*(2), 220–240. https://doi.org/10.1177/0959354310391353

Massage Therapy Act, 1991, S.O. 1991, c. 27. https://www.ontario.ca/laws/statute/91m27

McFadyen, J., & Rankin, J. (2016). The Role of Gatekeepers in Research: Learning from Reflexivity and Reflection. *GSTF Journal of Nursing and Health Care*, *4*(1), 82-88. http://dl6.globalstf.org/index.php/jnhc/article/view/1745

Merriam, S. (2009). Qualitative research: a guide to design and implementation (3rd ed.). Jossey- Bass.

Microsoft. (2022). *How OneDrive safeguards your data in the cloud.* https://support.microsoft.com/en-us/office/how-onedrive-safeguards-your-data-in-the-cloud-23c6ea94-3608-48d7-8bf0-80e142edd1e

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis : an expanded sourcebook* (Second edition.). Sage Publications.

Mokaberian, M., Noripour, S., Sheikh, M., & Mills, P. J. (2022). Examining the effectiveness of body massage on physical status of premature neonates and their mothers' psychological status. *Early Child Development and Care*, *192*(14), 2311–2325. https://doi.org/10.1080/03004430.2021.2006194

Mortari, L. (2015). Reflectivity in Research Practice: An Overview of Different Perspectives. *International Journal of Qualitative Methods, 14(5).* https://doi.org/10.1177/1609406915618045

Ontario Universities' Application Centre. (2023). *Collaborative University and College Programs.* https://www.ouac.on.ca/guide/collaborative-university-college programs/

Page, S., & Nyeboer, J. (2017). Improving the process of research ethics review. *Research Integrity and Peer Review*, 2(1), 14–14. https://doi.org/10.1186/s41073-017-0038-7

Patterson, C., & Arthur, H. M. (2008). A Model for Implementing Integrative Practice in Health Care Agencies. *Infectious Diseases*, 3(3), 13–19. https://doi.org/10.4137/117863370800300001

Polytechnics Canada. (2023, March 28). *Statements and Releases – Polytechnics Canada Applauds New Investments in Applied Research.* https://polytechnicscanada.ca/news-events/statements-releases/polytechnics-canada-applauds-new-investments-in-applied-research/

Polytechnics Canada. (2023). *Priorities – Research Innovation.* https://polytechnicscanada.ca/priorities/research-innovation/

Ponterotto, J. (2005). Qualitative Research in Counseling Psychology: A Primer on Research Paradigms and Philosophy of Science. *Journal of Counseling Psychology*, 52(2), 126–136. https://doi.org/10.1037/0022-0167.52.2.126

Richards, L. (2005). *Handling Qualitative Data.* London: Sage

Rivera, M., & Birnbaum, A. S. (2010). Health Promotion Practice and the Road Ahead: Addressing Enduring Gaps and Encouraging Greater Practice-to-Research Translation. *Health Promotion Practice*, *11*(6), 779–783. https://doi.org/10.1177/1524839910380248

Reeves, C. (2010). A difficult negotiation: fieldwork relations with gatekeepers. Qualitative Research: QR, 10(3), 315–331. https://doi.org/10.1177/1468794109360150

Registered Massage Therapist' Association of Ontario. (2023, May 12). Advocacy. *From the Desk of the CEO.* https://www.rmtao.com/about-rmtao/from-the-desk-of-the-ceo

Romm, N. (2013). Employing Questionnaires in terms of a Constructivist Epistemological Stance: Reconsidering Researchers' Involvement in the

Unfolding of Social Life. *International Journal of Qualitative Methods*, *12*(1), 652–669. https://doi.org/10.1177/160940691301200136

Rosenberg J., & Yates, P. (2007). Schematic representation of case study research designs. *Journal of Advanced Nursing*, 60(4), 447–452. https://doi.org/10.1111/j.1365-2648.2007.04385.x

Rozman, J., Bunc, M., & Zorko, B. (2004). Modulation of hormone secretion by functional electrical stimulation of the intact and incompletely dysfunctional dog pancreas. *Brazilian journal of medical and biological research = Revista brasileira de pesquisas medicas e biologicas*, *37*(3), 363–370. https://doi.org/10.1590/s0100-879x2004000300012

Saigal, & Doyle, L. W. (2008). Preterm Birth 3: An overview of mortality and sequelae of preterm birth from infancy to adulthood. *The Lancet (British Edition)*, *371*(9608), 261–. https://doi.org/10.1016/S0140-6736(08)60136-1

Sakulku, J. (2011). The impostor phenomenon. *International Journal of Behavioral Science, 6*(1), 75–97. https://doi.org/10.14456/ijbs.2011.6

Schneider, C. E. (2015). The censor's hand: The misregulation of human-subject research. Cambridge, MA: MIT Press.

Schoch, L. (2021). Reflections on the Parkinson's Project: learning experiences with the Gibb's Reflective Cycle [Bachelor's thesis, ZHAW Zürcher Hochschule für Angewandte Wissenschaften]. https://doi.org.10.21256/zhaw-23701

Schön, D.A. (1987). *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*. Jossey-Bass.

Shah, P., McDonald, S., Barrett, J., Synnes, A., Robson, K., Foster, J., Pasquier, J-C., Joseph, K S., Piedboeuf, B., Lacaze-Masmonteil, T., O'Brien, K., Shivananda, S., Chaillet, N., Pechlivanoglou, P., & Canadian Preterm Birth Network Investigators. (2018). The Canadian preterm birth network: A Study protocol for improving outcomes for preterm infants and their families. *Canadian Medical Association Journal, 6(1)*. https://doi.org/10.9778/cmajo.20170128

Shroff, F., & Sahota, I. S. (2013). The perspectives of educators, regulators and funders of massage therapy on the state of the profession in British Columbia, Canada. *Chiropractic & Manual Therapies*, *21*(1), 2–2. https://doi.org/10.1186/2045-709X-21-2

Stark, L. (2012). Behind closed doors: IRBs and the making of ethical research. Chicago, IL: University of Chicago Press.

Steward, B. (2006). Strategic choices in research planning. In L. Finlay & C. Ballinger

(Eds.), Qualitative research for allied health professionals: Challenging choices (pp.30-45). West Sussex, England: John Wiley & Sons.

Strauss, A., & Corbin, J. (1994). Grounded theory methodology: An overview. In N. K. Denzin & Y. S. Lincoln (Eds.), Handbook of qualitative research (pp. 273–285). Sage Publications, Inc.

Tabak, R., Khoong, E. C., Chambers, D. A., & Brownson, R. C. (2012). Bridging research and practice: models for dissemination and implementation research. *American Journal of Preventive Medicine*, 43(3), 337–350. https://doi.org/10.1016/j.amepre.2012.05.024

Therapeutic Touch Network of Ontario. (2023). *What is Therapeutic Touch? How Does it Work?* https://www.therapeutictouchontario.org/therapeutic-touch-2/therapeutic-touch/what-to-expect/?doing_wp_cron=1691537691.4891500473022460937500

Truant, T. L., Balneaves, L. G., & Fitch, M. I. (2015). Integrating complementary and alternative medicine into cancer care: Canadian oncology nurses' perspectives. *Asia-Pacific journal of oncology nursing*, *2*(4), 205–214. https://doi.org/10.4103/2347-5625.167233

University of Edinburgh. (n.d.). *Gibbs Reflective Cycle. Reflectors' Toolkit.* https://www.ed.ac.uk/reflection/reflectors-toolkit/reflecting-on-experience/gibbs-reflective-cycle

Uvnäs-Moberg, K., & Petersson, M. (2004). Oxytocin--biokemisk länk för mänskliga relationer. Mediator av antistress, välmående, social interaktion, tillväxt, läkning ... [Oxytocin--biochemical link for human relations. Mediator of antistress, well-being, social interaction, growth, healing...]. *Lakartidningen*, *101*(35), 2634–2639.

Veziari, Kumar, S., & Leach, M. (2021). Addressing barriers to the conduct and application of research in complementary and alternative medicine: a scoping review. BMC Complementary Medicine and Therapies, 21(1), 201–201. https://doi.org/10.1186/s12906-021-03371-6

Western University. (2022). Cybersmart. *Purpose of TRAC.* https://cybersmart.uwo.ca/for_it_support_providers/technology_risk_assessments/purpose_of_tra.html

Western University. (2022). *Qualtrics Security White Paper Lite: Defining our security Processes*. https://mysurveys.uwo.ca/

Western University. (2022). *Western Technology Services: PHIPA and Zoom*. https://zoom.us/docs/doc/PIPEDA_PHIPA%20Canadian%20Public%20Information%20Compliance%20Guide.pdf

Western University. (2022). *Western Technology Services: Privacy and Zoom.* https://wts.uwo.ca/zoom/privacy_considerations/privacy_and_zoom.html#:~:text=Western's%20contract%20with%20Zoom%20prohibits,better%20protect%20our%20private%20data.

Western University. (2022). *Western Technology Services: Security and Zoom*. https://zoom.us/docs/doc/Zoom-Security-White-Paper.pdf

Wilkinson, C. (2020). Imposter syndrome and the accidental academic: an autoethnographic account, *International Journal for Academic Development*, 25:4, 363374. https://doi/full/10.1080/1360144X.2020.1762087

Willison, Kevin D., Integrating Complementary and Alternative Medicine into Primary Healthcare in Canada: Barriers and Opportunities (June 1, 2005). Journal of Cancer Integrative Medicine, Vol. 3, No. 2, pp. 71-74, 2005, Available at SSRN: https://ssrn.com/abstract=1876635

Yazan, B. (2015). Three Approaches to Case Study Methods in Education: Yin, Merriam, and Stake. *Qualitative Report*, *20*(2), 134–152. https://doi.org/10.46743/2160-3715/2015.2102

Appendix A - Fanshawe College REB Approval

Approval Notification of Proposed Research Involving Human Participants at Fanshawe College

Protocol Number: 23-03-09-1

Principal Researcher(s): Dr. Denise Connelly (Amanda Winter)

Research Protocol Title: A Prospective Case Study to Assess the Nature of Massage Therapy Within an Ontario Level II NICU

Research Project Start Date: January 2023

Expected Date of Termination: April 27, 2024

Documents Reviewed:	Protocol; Email Script for Recruitment Follow up; Facebook and CPBF recruitment information - CPBF and London Ontario Mom to Mom Chat; Itemized Study Budget; Letter-of-Information-and-Consent – Caregiver; Letter-of-Information-and-Consent - Healthcare Worker copy; Observation Guide; Proposed Timeline; Rationale of Study - List of references; Recruitment brochure leaflet ; Recruitment email; Recruitment Poster for Level II NICU; Semi-structured Interview Guide – Caregivers; Semi-structured Interview Guide – Caregivers; Research Proposal Summary

Based solely on the ethical considerations raised by the research proposed in the application, the Research Ethics Board has completed its delegated review of the above research proposal and
Approved the project on April 27, 2023.

Comments and Conditions:

Please note that the REB requires that you adhere to the protocol reviewed and approved by the REB. The REB must approve any modifications to the protocol before they can be implemented.

Researchers must report to the Fanshawe REB:
a) any changes which increase the risk to the participants;
b) any changes which significantly affect the conduct of the study;
c) all adverse and/or unexpected experiences in the course of carrying out the study;
d) any new information which may adversely affect the safety of the participants or the conduct of the study.

Ethics approval of this protocol is for a period of one (1) year from the approval date above.
Researchers must submit an REB Amendment/Extension form if research continues beyond this period. · Upon completion, researchers must submit an REB Annual Review/Status Update form.

ETHICS APPROVAL DOES NOT CONSTITUTE PERMISSION TO CONDUCT THE RESEARCH; OTHER INSTITUTIONAL APPROVALS MAY BE REQUIRED TO CONDUCT THE RESEARCH PROJECT.

Members of the FCREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the FCREB.

Date: April 27, 2023

Chair, Research Ethics Board Fanshawe College

Appendix B – Western University Ethics Application

Western Research

Date: 9 June 2023

To: Dr. Denise Connelly

Project ID: 121477

Study Title: The Nature of Massage in a Level II NICU - 2022/2023

Application Type: HSREB Initial Application

Review Type: Delegated

Dear Dr. Denise Connelly

The Western University Health Sciences Research Ethics Board (HSREB) has reviewed the application for the study named above. Approval will be issued once the HSREB determines that there are satisfactory responses and/or revisions to the items outlined below. Satisfactory responses may require multiple rounds of follow-up recommendations as questions are answered, clarifications are made, and study documents are revised as applicable.

Title	Comment
1.10 *Upload the protocol/research plan for this study. NOTE: ALL HSREB submissions require a protocol/research plan:	1. Research Proposal. a. Please submit a clean copy. This version has comments. b. Please ensure the version date for this study document is the same as the version date entered into the REB application. They differ. c. Please reconcile the study title with what is stated within the REB application. There are four versions of the study title within this study protocol. 2. As this study is to be conducted in the CKHA NICU and involves the observation of staff and caregivers, please provide letters of support from applicable CKHA Administration allowing this research (observation sessions) to be conducted within the NICU. Upload the letters of support to this section of the REB application.
2.22 *Indicate your data collection tools/forms by selecting the relevant option(s) below:	3. Semi-structured Interview Guide - Caregivers. "Demographic Questions" section. STEGH is mentioned. Is this a mistake? Please clarify.
12.5 *Upload all advertising material(s):	4. Facebook and CPBF recruitment information - CPBF and London Ontario Mom to Mom Chat. a. This recruitment item mentions both CKHA and STEGH and that there is a "partnership" with STEGH. Please revise. b. This study will not be conducted in a "Canadian NICU environment". Please revise to be specific to this study. c. Please identify Dr. Connelly as the Principal Investigator of this project.
12.9 *How will initial contact be made with potential participants?	5. Email Script for Recruitment Follow up. Please submit a clean copy of this study document for REB review and approval. This version is tracked.
12.11 *Describe the consent process (for a patient and/or non-patient population). Please ensure that if you have multiple populations, the consent process for each is explained separately:	6. Consenting of study participants should not occur via Zoom. Participant identifiers should not be disclosed on this platform. If the interview is to be conducted via an online platform, please ensure study discussion occurs before recording of the interview occurs. Have the participant provide a signed copy of the signed informed consent to the study team (e.g. via email) before study procedures occur to confirm participation and for audit purposes, if applicable. 7. How will consent be obtained for the observation portion of the study? Please specify. If consent is not obtained from all applicable healthcare providers and caregivers present, observation cannot occur by the student.
12.13 *Which of the following will be used, select all that apply:	8. Letter-of-Information-and-Consent - Healthcare Worker Observation. Please ensure that all text is in black.
13.12 *Who will have access to the identifiable data?	9. Please also add Western University Health Sciences Research Ethics Board.

IMPORTANT RESUBMISSION NOTES:

- Ensure that you change Q1.1 from "Initial Submission" to "Response to REB Recommendations". Consult the "Help" tab in WREM for a guidance document on submitting responses.

- In a separate document, include each verbatim REB question/recommendation and your specific response to each. DO NOT refer to other documents and DO NOT simply state "done" ,"updated", or similar. Reviewers need to see thoughtful responses to questions posed, your justifications if recommendations are not followed, and itemized changes explained. **Response letters that do not follow these guidelines will be returned as incomplete.**
- Submit all revised documents (e.g. instruments, LOI etc.) in TRACKED and CLEAN copies. The TRACKED copies must only be uploaded when prompted (i.e., in the section called "Resubmission Information").
- When uploading the revised CLEAN copies, you MUST delete the old versions. Deleting the old versions will archive them and NOT permanently delete them.
- Ensure there is a version date (dd/mm/yyyy) in the footer of each revised document. This version date must be consistent with the version date entered when uploading the document.
- Please note that if a response is not received within 6-months of recommendations, this application will be considered stalled and be withdrawn.
- If the above instructions are not followed, the file will be sent back until this is done. Please note that once we receive your response, further questions generated by your response may be asked.

DO NOT begin any study related activities until you receive final notification of approval from the Office of Human Research Ethics (OHRE). If this study involves Lawson, you must also ensure you have received Lawson's Institutional Approval (IA).

Please submit your response through WREM at your earliest convenience.

Please do not hesitate to contact us if you have any questions.

Sincerely,

[redacted] Ethics Officer (psargean@uwo.ca)

Appendix C - Letter of Information and Consent – Healthcare Interview

Study Title

A Prospective Case Study to Assess the Nature of Massage Therapy Within an Ontario Level II Neonatal Intensive

Name of Principal Investigator

Dr. Denise Connelly, BScPT, MSc, PhD – School of Physical Therapy, Faculty of Health Sciences

University of Western Ontario

[redacted]

[redacted]

Co-Investigators

Mrs. Amanda Winter, BHSc, RMT

Dr. Amanda Baskwill, PhD, RMT

Dr. Sheila Moodie, PhD

Contact Information

Dr. Denise Connelly, BScPT, MSc, PhD – School of Physical Therapy, Faculty of Health Sciences

[redacted]

[redacted]

Amanda Winter, BHSc, RMT

[redacted]

Funding Received

Amanda Winter, co-investigator, was awarded the Fanshawe College Research and Innovation Grant for partial funding of this project.

Conflict of Interest

There is no conflict of interest to report.

Invitation to Participate/Eligibility Criteria

You are being invited to participate in this study because you have been a healthcare professional at the XXXXXX NICU (special care nursery) for over 1 year. You must speak fluent English to be considered for participation.

Why is this Research Being Done?

Infants who are born preterm and/or have low birth weight are at risk of several health complications, including gastrointestinal problems. Furthermore, long hospital stays for premature infants pose a significant financial burden to hospitals and the healthcare system. Studies of massage therapy with preterm infants have shown significant and safe weight gain (Field, Diego & Hernandez-Reif, 2007) leading to earlier hospital discharge. However, there is a major gap in research when it comes to examining the use of massage as a healthcare intervention within NICUs in the Canadian context. Through your participation as a qualified and experienced healthcare practitioner at XXXXXX, it will become possible to understand the use of massage as a healthcare intervention in a Level II NICU. Given that this study is new within the Canadian context, it is critically important to have the support of healthcare workers in the XXXXXX NICU. Your contribution to the health and wellbeing of your smallest patients is vital.

Study Design

A qualitative case study approach applied to the NICU is being used for this study because it will provide an opportunity to gather in-depth knowledge about massage within the culture of team-based healthcare (e.g., training, decision making, education). This study will be comprised of interviews, observation, and collection of materials that relate directly to massage at XXXXXX NICU.

If you agree to participate in an interview for this study, you agree to partake in 1-2 virtual or in-person interviews. Virtual interviews will either be conducted via Western University's corporate ZOOM platform or in-person depending on participant preference. The interviews will be conducted by co-investigator, Amanda Winter, on a day, time, and location agreed upon by both parties. Approximately 6-8 participants will be asked to answer various questions regarding their experiences in the NICU. Virtual and in-person interviews may be audio recorded on Zoom. All recordings will be subject to high levels of data storage security.

How Long Will You be in This Study?

If you agree to participate in this portion of the study, you agree to partake in 1-2 virtual or in-person interviews which will last approximately 30-60 mins each.

Voluntary Participation

Your participation in this study is completely voluntary and may be discontinued at any time you see fit.

Withdrawal from Study

If you decide to withdraw from the study, you have the right to request (e.g., by phone, in writing, etc.) withdrawal of information collected about you. If you wish to have your information removed, please let the researcher know and your information will be

destroyed from our records. Once the study has been published, we will not be able to withdraw your information. It should be noted that within qualitative research, analysis of data is ongoing, and your contributions will directly impact how the study in conducted. The information you provided is embedded in the researchers base of knowledge; however, direct quotes and interview responses will not be used should you choose to withdraw from the study.

It is important to note that a record of your participation must remain with the study as such, the researchers may not be able to destroy your signed letter of information and consent, or your name on the master list, however, all data collected will be withdrawn and securely destroyed.

If you wish to have your information removed, please let Amanda Winter ([redacted]know.

Risks

Participation in this study may bring about feelings of sadness, grief, anxiety, etc. that are a residual effect of your experience with a preterm infant. If you feel that this is the case, here is a list of resources that you may benefit from.

ConnexOntario Helpline

- Toll-free: 1-866-531-2600
- https://www.ontario.ca/page/find-mental-health-support

Canadian Premature Babies Foundation – Parent Care Program

- https://www.cpbf-fbpc.org/parentcare

Benefits

While there are no direct benefits to participating in this study, some participants may feel that vocalizing their experience and contributing to research might serve to embrace or heal from their experiences. Additionally, by participating in this study, you are directly impacting the acquisition of new knowledge in this area of research. This will in turn lead to a deeper understanding of the role that massage therapy might have within the NICU and will further strengthen massage therapy relationships within interprofessional teams and influence outcomes for preterm low birth weight infants.

Alternatives to Being in the Study

You may choose to not participate in this study.

Confidentiality

Delegated institutional representatives of Western University and its Health Science Research Ethics Board, as well as the XXXXXX hospital ethicist may look at the study to monitor the ethical conduct of the research and to ensure that the information collected is correct and follows the appropriate laws and guidelines in accordance with regulatory requirements for quality assurance. All study data (transcripts, audio/video recordings, interview notes) will be kept confidential and stored on the password protected computer of the Principal Investigator served by Western Institutional Servers, and the research team's Western One Drive. All deidentified data will be securely stored on Amanda Winter's device in a file that will be password-protected and encrypted. A master list of participants with their participant codes will be stored in a locked office in a locked filing cabinet in the PI's office on Western's campus. If results of the study are published, your name will not be used. The research committee will have access to recorded zoom meeting for the purpose of ensuring quality throughout data analysis.

It should be noted that nothing done over the internet is 100% risk-free. Additionally, as direct identifiers are being collected for this project, there is the risk of breach of privacy. All information will be kept for 7 years in compliance with Western Research guidelines. Your data may be retained indefinitely and could be used for future research purposes (e.g., to answer a new research question regarding massage in a Level II NICU environment). By consenting to participate in this study, you are agreeing that your data can be used beyond the scope of this present study by the researchers. Please note that if any study results are published, your name or any other personal identifier will be not be used.

Costs

There is no cost to participate in this study.

Compensation

You will be given a $25 Starbucks gift card for participating in this study.

Rights as a Participant

Your participation in this study is voluntary. You may decide not to be in this study. Even if you consent to participate you have the right to not answer individual questions or to withdraw from the study at any time. If you choose not to participate or to leave the study at any time it will have no effect on your employment status.

You do not waive any legal right by consenting to this study.

Questions about the Study

Please direct any additional questions or concern about this research project or your participation to Amanda Winter, co-investigator, ([redacted]or Dr. Denise Connelly, principal investigator ([redacted]. If you have any questions about

your rights as a research participant or the conduct of this study, you may contact The Office of Human Research Ethics (519) 661-3036, 1-844- 720-9816, email: ethics@uwo.ca. This office oversees the ethical conduct of research studies and is not part of the study team. Everything that you discuss will be kept confidential.

This letter is yours to keep for future reference.

Written Consent Form – In-person Interviews

Study Title

A Prospective Case Study to Assess the Nature of Massage Therapy Within an Ontario Level II Neonatal Intensive

Name of Principal Investigator

Dr. Denise Connelly, BScPT, MSc, PhD – School of Physical Therapy, Faculty of Health Sciences

Co-Investigators

Mrs. Amanda Winter, BHSc, RMT

Dr. Amanda Baskwill, PhD, RMT

Dr. Sheila Moodie, PhD

Contact Information

Dr. Denise Connelly, BScPT, MSc, PhD – School of Physical Therapy, Faculty of Health Sciences

Amanda Winter, BHSc, RMT

[redacted]

☐ I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate.

☐ All questions have been answered to my satisfaction.

I consent to the use of deidentified quotes obtained during the study in the dissemination of this research.

YES NO

I consent to the use of my data for future research purposes.

YES NO

I consent to be audio-recorded

YES NO

_____ Print Name of Participant

_____ Signature

_____ *Date (DD-MMM- YYYY)*

_____ Print Name of Person Obtaining Consent

_____ Signature

_____*Date (DD-MMM- YYYY)*

My signature means that I have explained the study to the participant named above. I have answered all questions.

Appendix D - Letter of Information and Consent – Caregiver Interview

Study Title

A Prospective Case Study to Assess the Nature of Massage Therapy Within an Ontario Level II Neonatal Intensive Care Unit

Name of Principal Investigator

Dr. Denise Connelly, BScPT, MSc, PhD – School of Physical Therapy, Faculty of Health Sciences

University of Western Ontario

[redacted]

[redacted]

Co-Investigators

Mrs. Amanda Winter, BHSc, RMT

Dr. Amanda Baskwill, PhD, RMT

Dr. Sheila Moodie, PhD

Contact Information

Dr. Denise Connelly, BScPT, MSc, PhD – School of Physical Therapy, Faculty of Health Sciences

[redacted]

[redacted]

Amanda Winter, BHSc, RMT

[redacted]

Funding Received

Amanda Winter, co-investigator, was awarded the Fanshawe College Research and Innovation Grant for partial funding of this project.

Conflict of Interest

There is no conflict of interest to report.

Invitation to Participate/Eligibility Criteria

You are being invited to participate in this study because you are the caregiver of an infant that was/is low birthweight (>1200g and <2500g) and born between 30-36 weeks gestation that received or is receiving care at XXXXXX NICU in the last 6-12 months. You must speak fluent English to be considered for participation.

Why is this Research Being Done?

Current research highlights the benefits of preterm infants receiving massage which includes safe and significant weight gain. This in turn, leads to earlier hospital discharge. However, in Canada, no research has been done to study what massage looks like in a NICU setting. The goal of this research is to understand what massage looks like in an Ontario Level II NICU environment as a healthcare option.

Given that this study is new within the Canadian context, it is critically important to have the support of caregivers who have first-hand experience in a neonatal intensive care unit. By contributing to this research, you can give the researchers a first-hand account of what that experience was like for you. This research has the potential to inform future direction within the hospital and enhance preterm infant care for families that may be going through a similar situation as you.

Study Design

A qualitative case study approach applied to the NICU is being used for this study because it will provide an opportunity to gather in-depth knowledge about massage within the culture of team-based healthcare (e.g., training, decision making, education). This study will be comprised of interviews, observation, and collection of materials that relate directly to massage at XXXXXX NICU.

If you agree to participate in an interview for this study, you agree to partake in 1-2 virtual or in-person interviews. Virtual interviews will either be conducted via Western University's corporate ZOOM platform or in-person depending on participant preference. The interviews will be conducted by co-investigator, Amanda Winter, on a day, time, and location agreed upon by both parties. Approximately 6-8 participants will be asked to answer various questions regarding their experiences in the NICU. Virtual and in-person interviews may be audio recorded on Zoom. All recordings will be subject to high levels of data storage security.

How Long Will You be in This Study?

If you agree to participate in this portion of the study, you agree to partake in 1-2 virtual or in-person interviews which will last approximately 30-60 mins.

Voluntary Participation

Your participation in this study is completely voluntary and may be discontinued at any time you see fit.

Withdrawal from Study

If you decide to withdraw from the study, you have the right to request (e.g., by phone, in writing, etc.) withdrawal of information collected about you. If you wish to have your information removed, please let the researcher know and your information will be

destroyed from our records. Once the study has been published, we will not be able to withdraw your information. It should be noted that within qualitative research, analysis of data is ongoing, and your contributions will directly impact how the study in conducted. The information you provided is embedded in the researchers base of knowledge; however, direct quotes and interview responses will not be used should you choose to withdraw from the study.

It is important to note that a record of your participation must remain with the study as such, the researchers may not be able to destroy your signed letter of information and consent, or your name on the master list, however, all data collected will be withdrawn and securely destroyed.

If you wish to have your information removed, please let Amanda Winter [redacted]) know.

Risks

Participation in this study may bring about feelings of sadness, grief, anxiety, etc. that are a residual effect of your experience with a preterm infant. If you feel that this is the case, here is a list of resources that you may benefit from.

ConnexOntario Helpline

Toll-free: 1-866-531-2600

https://www.ontario.ca/page/find-mental-health-support

Canadian Preterm Babies Foundation – Parent Care Program

https://www.cpbf-fbpc.org/parentcare

Benefits

While there are no direct benefits to participating in this study, some participants may feel that sharing their experience and contributing to research might serve to embrace or heal from their experiences. Additionally, by participating in this study, you are helping us gather new knowledge in this area of research. This will in turn lead to a deeper understanding of the role that massage therapy might have within the NICU and will further strengthen massage therapy relationships within healthcare teams and influence health outcomes for preterm low birth weight infants.

Alternatives to Being in the Study

You may choose to not participate in this study.

Confidentiality

Delegated institutional representatives of Western University and its Health Sciences Research Ethics Board, as well as the XXXXXX hospital ethicist will have access to study-related records to monitor the ethical conduct of the research and to ensure that the information collected is correct and follows the appropriate laws and guidelines in accordance with the regulatory requirements for quality assurance. All study data (transcripts, audio/video recordings) will be kept confidential and stored on the password protected computer of the Principal Investigator served by Western Institutional Servers, and the research team's Western One Drive. All deidentified data will be securely stored on the co-investigator's device in a file that will be password-protected and encrypted. A master list of participants with their participant codes will be stored in a locked office in a locked filing cabinet in the PI's office on Western's campus. The research committee will have access to recorded meetings for the purpose of ensuring quality throughout data analysis.

It should be noted that nothing done over the internet is 100% risk-free. Additionally, as direct identifiers are being collected for this project, there is the risk of breach of privacy.

All information will be kept for 7 years in compliance with Western Research Guidelines. Your data may be retained indefinitely and could be used for future research purposes (e.g., to answer a new research question regarding massage in a Level II NICU environment). By consenting to participate in this study, you are agreeing that your data can be used beyond the scope of this present study by the researchers. Please note that if any study results are published, your name or any other personal identifier will be not be used.

Costs

There is no cost to participate in this study.

Compensation

You will be given a $25 Starbucks gift card for participating in this study.

Rights as a Participant

Your participation in this study is voluntary. You may decide not to be in this study. Even if you consent to participate you have the right to not answer individual questions or to withdraw from the study at any time. If you choose not to participate or to leave the study at any time it will have no personal effect.

You do not waive any legal right by consenting to this study.

Questions about the Study

Please direct any additional questions or concerns about this research project or your participation to Amanda Winter, co-investigator, ([redacted] or Dr. Denise

Connelly, principal investigator ([redacted] If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Human Research Ethics (519) 661-3036, 1-844- 720-9816, email: ethics@uwo.ca. This office oversees the ethical conduct of research studies and is not part of the study team. Everything that you discuss will be kept confidential.

This letter is yours to keep for future reference.

Written Consent Form – In-person Interviews

Study Title
A Prospective Case Study to Assess the Nature of Massage Therapy Within an Ontario Level II Neonatal Intensive Care Unit

Name of Principal Investigator
Dr. Denise Connelly, BScPT, MSc, PhD – School of Physical Therapy, Faculty of Health Sciences

Co-Investigators
Mrs. Amanda Winter, BHSc, RMT
Dr. Amanda Baskwill, PhD, RMT
Dr. Sheila Moodie, PhD

Contact Information
Dr. Denise Connelly, BScPT, MSc, PhD – School of Physical Therapy, Faculty of Health Sciences
[redacted]
Amanda Winter, RMT, BHSc
[redacted]

☐ I have read the Letter of Information, had the nature of the study explained to me and I agree to participate.

☐ All questions have been answered to my satisfaction and I agree to participate in this research.

I consent to the use of de-identified quotes obtained during the study in the dissemination of this research.

YES NO

I consent to the use of my data for future research purposes.

YES NO

I consent to be audio-recorded

YES NO

_____ Print Name of Participant

_____ Signature

_____ *Date (DD-MMM- YYYY)*

_____ Print Name of Person Obtaining Consent

_____ Signature

_____*Date (DD-MMM- YYYY)*

My signature means that I have explained the study to the participant named above. I have answered all questions.

Appendix E - Research Brochure

Caregivers and Healthcare Professionals

- Are you a caregiver or healthcare provider to a child that was born prematurely and received health care from the Neonatal Intensive Care Unit (NICU) at [redacted] within the last year?
- Was the child born between 30-36 weeks gestation?
- Was the child considered to be low birthweight at birth (>1200g)?
- Caregivers: Did you spend 5 or more days in the Neonatal Intensive Care Unit at [redacted]?
- Healthcare Providers: Have you worked at [redacted] special care nursery for 1 year or more?
- Are you fluent in English?

If you answered yes to these questions, you may be eligible to participate.

IN PARTNERSHIP WITH:

Western University · Canada

FANSHAWE COLLEGE

CONTACT US

Dr. Denise Connelly, BScPT, MSc, PhD
Primary Investigator, Western University
Faculty of Health Sciences

Amanda Winter, BHSc, RMT
Graduate Student, Western University
Faculty of Health Sciences

[redacted]

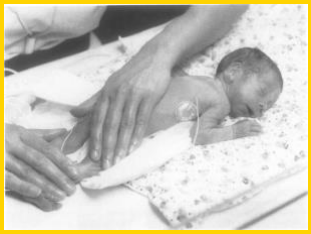
We will send you additional information and be able to answer any questions you have.

Version Date: 01/04/23 Version: 1

RESEARCH STUDY

A Prospective Case Study to Assess the Nature of Massage Therapy within an Ontario Level II Neonatal Intensive Care Unit

WE WANT TO HEAR FROM YOU ABOUT YOUR EXPERIENCE AT [redacted] DURING YOUR TIME IN THE NEONATAL INTENSIVE CARE UNIT/SPECIAL CARE NURSERY.



WHY IS THIS RESEARCH IMPORTANT?

Studies of massage therapy with preterm infants have shown significant and safe weight gain (Field, Diego & Hernandez-Reif, 2007) leading to earlier hospital discharge. However, there is a major gap in research when it comes to examining the use of massage as a healthcare intervention within NICUs in the Canadian context.

Given that this study is new within the Canadian context, it is critically important to have the support of the very people this research involves.

Your contribution to the health and wellbeing of the smallest patients is vital. Babies who are born prematurely and/or have low birth weight are at risk of several health complications, including gastrointestinal problems. Furthermore, long hospital stays for premature infants pose a significant financial burden to hospitals and the health care system.

Through your participation it will become possible to understand the use of massage as a healthcare intervention in a special care nursery.

You may be compensated for your time.

Commitment: 1-2 Interviews that will last approximately 30-60 minutes (Zoom call and in-person interviews are optional).

Version Date: 01/04/23 Version: 1

Appendix F - Pre-Screening Email Script for Recruitment Follow up

Subject Line: Invitation to participate in research

Hello,

We have received an email from you regarding your interest in participating in research that aims to understanding massage in the special care nursery at XXXXXX that Dr. Denise Connelly, Principal Investigator, BScPT, MSc, PhD, and Amanda Winter, Graduate Student, RMT, BHSc are conducting.

Since you have reached out to us**, we would like to ensure that you meet the eligibility requirements prior to setting up a meeting by answering a few questions**

(please answer each question in your reply email)

Pre-Screening Questions:

1) Did you receive care from the Special Care Nursery/NICU at XXXXXX in the last 12 months?
2) Was your baby born between 30-36 weeks gestation?
3) Did your baby weigh more than 1200g at birth?
4) Are you fluent in English?
5) Do you agree to participate in an interview?

Once we can confirm your eligibility, and you agree to participate in an interview, we will collect personal information such as your full name, your baby's date of birth, and your baby's weight. We will take reasonable steps to protect the confidentiality of your information. This information will be collected at the beginning of the interview prior to any recording.

Briefly, the study involves participation in 1-2 interviews that will last approximately 30-60 minutes where you will provide answers about your experience with massage while in the NICU. The interviews will be done either through ZOOM or at a location agreed upon by you and Amanda Winter. You may be compensated for your time.

A letter of information and consent will be sent to eligible participants indicating their interest in participating in an interview.

Thank you,

Amanda Winter
Western University
[redacted]

Appendix G - Semi-Structured Interview Guide – Healthcare Provider

Demographic Questions

1. I would like to know a little bit more about your role within the NICU here.
   Prompts:
   - What is your primary role in the NICU at XXXXXX?
   - What is your professional title?
   - How many years have you been practicing in the NICU at XXXXXX?

Introductory Questions

2. What is your experience as a healthcare professional in the NICU environment at XXXXXX?
   Prompts:
   - How would you describe the care you provide to infants in the NICU?
     - Are there different roles that you have?

General Questions

3. What is your experience surrounding massage or touch practices on preterm infants in the NICU at XXXXXX?
   Prompts:
   - Have you performed or taught massage or touch?
   - Have you seen anyone perform or teach massage or touch?
     - If yes, who were they?
     - If no, continue with questions
   - Have you ever been asked by a caregiver how they can massage their preterm infant?
     - If yes, what sort of things did you show them?
   - If no, continue with questions

4. What protocols or procedures are you aware of at XXXXXX that allows caregivers to bring in their own massage therapist into the NICU to treat a preterm infant?
   Prompt:
   - Can you describe what that entails?

5. What are the current practices surrounding massage or touch for preterm infants in the NICU at XXXXXX?
   Prompts:
   - Who is providing the massage or touch?
   - When might massage/touch be implemented? (i.e., time of day? How long? How often?)
   - Why is massage/touch implemented?
   - What are the intended outcomes of massage/touch?
   - What are the current protocols in place for massage/touch?
   - What is being monitored for the baby during the massaging/touching period? (i.e., blood pressure, nonverbal cues, temperature, etc.)
   - What methods of tracking are used when massage or touch is implemented?

6. Please tell me about any education, support, training or communications that exist to implement massage or touch in the NICU to caregivers?
   Prompts:
   - How is information about the program given to caregivers?
   - Pamphlets/brochures? Do you remember any of the details in the pamphlet/brochure?
   - Follow up for adherence/ability to perform?
   - How often is it offered?
   - Group/individual support?
   - Based on interest or based on need?
   - Who determines interest or need?
   - Who is doing the training?
   - What are the eligibility criteria?
   - What happens in terms of massage/touch with the infants whose parents are not present?

7. Please tell me about any education, support, training or communications that exist to implement massage or touch in the NICU to healthcare professionals?
   Prompts:
   - How is information about the program given to healthcare professionals?
   - Pamphlets/brochures? Do you remember any of the details in the pamphlet/brochure?
   - Follow up for adherence/ability to perform?
   - How often is it offered?
   - Group/individual support?
   - Based on interest or based on need?
   - Who determines interest or need?
   - Who is doing the training?
   - What are the eligibility criteria?
   - Ask about education to teach the HCPs

8. In your opinion, if massage has not been considered as a formal program, why do you think that is?

9. Can you tell me about the policies the NICU has in place when it comes to massage therapy for preterm infants.
   Prompt:
   - Who determines which therapeutic interventions are provided to infants while in the NICU? (Policy and decision making, program planning)

10. When it comes to discharging the infants, what resources, if any, are given to the caregivers that mention or support massage therapy for infants?
    Prompts:

- Who determines the interventions that are suggested prior to the infants' discharge from the NICU?
- If massage is being passed on to the parents, is there any follow up from the NICU that ensures effectiveness, compliance, outcomes?

11. If massage were a therapeutic intervention available for preterm infants, how would you feel about that and what would that look like from your point of view?
    Prompts:
    - What would be needed to effectively implement a massage therapy education program?
    - Are there barriers in implementing massage for preterm infants?
        - Training of staff/parent?
        - Confidence as an HCP?
        - Time commitment required by HCP?
        - Support for training
        - Other clinically relevant situations that might come up in the NICU?

12. Is there anything else you would like to share with me regarding massage/touch in the NICU?

Appendix H - Semi-Structured Interview Guide – Caregiver

Introductory Questions

1. Can you tell me a bit about your experience while you were in the XXXXXX NICU?

   Prompts:
   - Would you walk me through the daily care that you would engage in on a daily basis?
   - Who would you say did the majority of care for your baby while in the NICU?
   - How did staff encourage you to care for your baby?

Demographic Questions

2. I would like to know a little bit more about your connection to the baby that was in the NICU.

   Prompts:
   - What is your relationship to the baby in NICU?
   - How many days/weeks did you spend in the XXXXXX NICU?
   - What is the age of the baby now?

General Questions

3. What is/was your experience surrounding massage or touch in the NICU?

   Prompts:
   - Do you remember if you asked or were told that massage was available for your baby in the NICU? If yes, what was the reply?
   - Did you touch or massage your baby in the NICU?
     - If yes, how did touching/massaging your baby make you feel while in the NICU?
     - If not, did you want to touch or massage your baby in the NICU?
       - If yes, what prevented you from touching or massaging your baby?
   - Do you remember who on the healthcare team provided massage/touch in the NICU? If so, do you know who they were?

4. When someone other than a family member massaged (or touched) your baby, what words did they use to describe what they were doing?

5. Did anyone teach you how to massage your baby while you were in the NICU?
   - If yes:
   - what was that experience like for you learning about massage?
   - If no:
   - continue with questions

6. Please tell me about any programs that you heard about or attended in the NICU that trains parents on massage and/or touch for infants in the NICU at XXXXXX.

   Prompts:
   - Length of program?
   - Pamphlets/brochures? Do you remember any of the details in the pamphlet/brochure?
   - Hollow up for adherence/ability to perform?
   - How often is it offered?
   - Group/individual support?
   - Based on interest or based on need?
   - Who determines interest or need?
   - Who is doing the training?

7. Are you aware of anything in place that allows you to bring in your own healthcare provider to provide massage for your preterm infant in the NICU?

8. Prior to leaving the NICU to go home, what resources, if any, were you given that mentioned or supported massage for your baby?

9. How would you feel if **teaching** massage to caregivers for preterm infants was part of the care provided in the NICU?

10. From your perspective, what would be some of the barriers and benefits to having a healthcare provider teaching caregivers to massage their preterm infants?

    Prompts:
    - Ability of caregivers to learn massage?
    - Confidence as a caregiver?
    - Time by a caregiver? (Commitments with work, other children, other family)
    - Support from staff?
    - Other clinically relevant situations that might come up in the NICU?
    - Sense of engagement with healthcare of the child?

11. If there was a healthcare provider who **provided** massage to your preterm baby in the NICU, how would you feel about that?

12. Is there anything else you would like to share with me about your experience of massage for your baby in the NICU?

Appendix I - Observation Guide

1) Who is doing most of the touching to the baby?
2) Are there moments when massage is being practiced?
3) Are there moments when massage is being taught?
4) What does follow up look like for those that have been taught?
5) What resources are visible and available to caregivers regarding massage?
6) Which HCPs are treating infants regarding touch/massage?
7) When is massage/touch typically initiated by the caregiver/HCP?
8) (i.e., alertness of infant, before/after feeding/changing/holding/sleeping/)
9) Is there a protocol/steps that are followed when initiating massage?
10) Who are caregivers turning to when they have questions about massage?
11) When caregivers/HCPs are massaging their infants, what does that look like?
12) Is there downtime in the NICU when HCPs could be providing massage/education? Are there moments of unintentional massage?

Appendix I2 – Observation Documentation Guide

Research Question addressed	Observation item	Data to be collected Healthcare Providers (HCPs) will be identified by colour in order to maintain confidentiality
How is massage incorporated into daily care routines or as a healthcare intervention?	Who is doing most of the touching to the baby?	List whether providers/caregivers are providing touch (checkmark). Check boxes will allow for easy recording and for participants to remain deidentified. Babies will be assigned a letter based on location in the NICU *Room to expand chart*

HCP/caregiver (colour)	Baby A	Baby B	Baby C	Baby D	Baby E
Caregiver					

<table>
<tr>
<td><u>How is massage incorporated into daily care routines or as a healthcare intervention?</u></td>
<td><u>Are there moments when massage is being practiced?</u></td>
<td><u>Field notes documenting time of day and length of massage</u>
<table>
<tr><th>Start Time</th><th>End Time</th><th>Length of massage (mins)</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
</table>
</td>
</tr>
</table>

<table>
<tr>
<td><u>How is adherence, education, support, and training of massage managed within the NICU?</u></td>
<td><u>Are there moments when massage is being taught? >What does follow up look like for those that have been taught?</u></td>
<td>
<table>
<tr><th><u>Time of Day</u></th><th><u>HCP providing teaching (colour)</u></th></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
</table>
<u>Field notes regarding what happens following initial teaching opportunity</u>
</td>
</tr>
<tr>
<td><u>How is adherence, education, support, and training of massage managed within the NICU?</u></td>
<td><u>What resources are visible and available to caregivers regarding massage?</u></td>
<td><u>Field note documenting all visible and available resources regarding massage</u>
❑ Pamphlets
❑ Information sheets
❑ Handbook
❑ Signs
❑ Research
❑ Video
❑ Other:</td>
</tr>
</table>

<table>
<tr>
<td>How is massage incorporated into daily care routines or as a healthcare intervention?</td>
<td>Which HCPs are treating babies regarding touch/massage?</td>
<td>List of healthcare providers (checkmark)
Healthcare providers will be categorized by colour in order to maintain confidentiality.
<table>
<tr><th>HCP (identified by colour to maintain confidentiality)</th><th>Providing touch/massage?</th></tr>
<tr><td></td><td>❑</td></tr>
<tr><td></td><td>❑</td></tr>
<tr><td></td><td>❑</td></tr>
<tr><td></td><td>❑</td></tr>
<tr><td></td><td>❑</td></tr>
<tr><td></td><td>❑</td></tr>
<tr><td></td><td>❑</td></tr>
</table>
</td>
</tr>
</table>

<table>
<tr>
<td>How is massage incorporated into daily care routines or as a healthcare intervention?</td>
<td>When is massage/touch typically initiated by the caregiver/HCP?</td>
<td>Field note documenting the context which precipitates initiation of massage (alertness of infant, before/after feeding/changing/holding/sleeping/procedure)
<table>
<tr><th>Alertness</th><th>Before/After feed</th><th>Before/After change</th><th>Before/After /During holding</th><th>Sleeping Y/N</th><th>Before/After sleeping</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td>
</tr>
</table>

How is adherence, education, support, and training of massage managed within the NICU?	Is there a protocol/steps that are followed when initiating massage?	Field notes regarding any noticeable steps/protocols during massage

How is adherence, education, support, and training of massage managed within the NICU?	Who are caregivers turning to when they have questions about massage?	Field notes documenting who the caregiver asks questions of, prior to commencement, during the period of, or following the provision of massage. Healthcare providers will be assigned a colour in order to maintain confidentiality.

How is massage incorporated into daily care routines or as a healthcare intervention?	When caregivers/HCPs are massaging their infants, what does that look like?	Detailed field notes documenting the general techniques, positions, and tools used by the participant giving the massage. Information gathered here is based on the expertise of the researcher.

<table>
<tr>
<td><u>What role could RMT's have in the context of a level II NICU?</u></td>
<td><u>Is there downtime in the NICU when HCPs could be providing massage/education?</u></td>
<td><u>Field notes detailing times where it appears that there is downtime for HCPs in the NICU</u>
<table>
<tr><th>Start Time</th><th>End Time</th><th>Total Time</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
</table>
*Add more space if necessary</td>
</tr>
</table>

How is massage incorporated into daily care routines or as a healthcare intervention?	Are there moments of unintentional massage?	Field note detailing when touch by an HCP/caregiver may be interpreted as massage by the researcher (based on researcher expertise)

Appendix J - Timeline of Research Experiences under Reflection

Timeline of Research Experiences under Reflection

I first became interested in the concept that massage therapy could help preterm infants about nine years ago following an article published in our professional association journal (Massage Therapy Canada, 2012). From there, I read a variety of published papers on this topic to further explore what is known about the use of massage in caring for preterm infants. When it came time to investigate the professional training that I would need to pursue massage therapy specific to preterm infants, I came across multiple roadblocks. The training offered in my home province required 1,000 hours of NICU (Neonatal Intensive Care Unit) experience to enroll in the program. To obtain those NICU hours, I needed to be either a doctor, nurse, physiotherapist, occupational therapist or any other current member of the NICU team. After this realization, I contacted one organization in Canada and asked if my experience as an RMT (Registered Massage Therapist) for 14 years (at the time) would grant me the privilege to observe the course without obtaining a certificate, and the answer was no.

When I encountered this roadblock, I thought there must be another avenue that would provide me with the training I desired. I found similar courses in the United States as well as other courses abroad, so I thought I should reach out to my massage community to see who else was providing massage therapy for preterm infants. To my surprise, one person responded to my question, and her reply was that she had only been in the NICU two times at the request of the family. From there, I was curious to know if my local hospital had a policy in place that allowed patients or families to request

treatment from a massage therapist. Following a private conversation with a senior hospital administrator, I was pleased to learn that there were policies and documents available should a patient or family member wish to bring in an RMT not on staff to provide massage treatment. Immediately, my curiosity was sparked, and I had so many questions running through my mind:

- Did patients know about the option of bringing in their own regulated health practitioners while receiving treatment?
- Were there healthcare professionals in hospital contexts that had received the training certification to perform NICU massage?
- Where was NICU massage being provided in Canada?
- Would the practice of preterm infant massage be supported at the hospital level given the research currently available?
- What could I do to increase my knowledge about NICU massage and become an advocate, ambassador, and pioneer in my field for those families and RMTs that would follow in my footsteps?

I approached my academic coordinator at Fanshawe College and asked if he had any ideas that would help me in the pursuit of finding answers to my questions. Indeed, he did! I was put in contact with our (former) Associate Dean, who suggested that I apply for the faculty funding opportunity called "From Concept to Closeout," which would help me develop a proposal for a research grant. I attended the six-week course to develop my proposal, and when it came time for my (former) Associate Dean to sign off on my research, my request was denied, citing that I was not qualified to carry out this research.

This response was counter to the encouragement and enthusiasm I had received only a few months prior. Fortunately, I am a person of determination and was able to find someone who would sign off and who believed in my research ambitions as much as I did. A few weeks later, I was awarded the Fanshawe Research Grant to pursue my research. However, being the reflective person that I naturally am, I always seemed to come back to the idea that I may not have the research skills necessary to do a thorough and academically sufficient project, as communicated to me by my (former) Associate Dean. Perhaps they were right. Perhaps I needed to invest in myself and my career to further my profession and do it in a way that would be highly regarded and valued. After taking some time to reflect and weigh the options, I decided to go ahead and pursue a Master's degree in the Health and Rehabilitation Sciences Graduate Program at Western University. I was intent on proving that I could do the proposed and funded research project and that I was going to gain training in the needed research skills and knowledge. Even as a mature student, professional, business owner, and mother of three children, nothing was going to stand in my way.

My first year in 2021 as a graduate student at Western was seamless. I was taking my courses and had developed a new proposal based on the education I was receiving. I had made a connection with a Level II NICU that was extremely interested in my research, and everything was moving along well. Moving into my second year as a graduate student started out like the first, moving very well and applying for my ethics approval on my research, both at Fanshawe College and Western University, having productive meetings with my research committee and heading into the holiday season. January 2023 presented me with what was going to be the first of many roadblocks in my research

journey. I was devastated when Hospital 1 declined to participate in my research project, stating staffing issues and concerns over patient acuity. My research committee and I quickly decided I needed to move on to a different Level II NICU to support my research. After months of communicating with Hospital 2, they, too, declined to host the research project, stating concerns about unintentional messaging regarding the availability of treatment for preterm infants.

When Hospital 2 declined to participate in my research, and I was unsure of where that would leave me regarding my research, I did not yet have the perspective to realize that this entire experience had added so much value to what I have been able to learn about the research process. A perspective that few other students have the fortune of experiencing when their research projects are completed and "successful" in the traditional sense. Retrospective reflection has been an essential tool in examining this proposed project, aiding in my understanding of the complexities of this experience. Table 7 summarizes the historical timeline of events of my research experience.

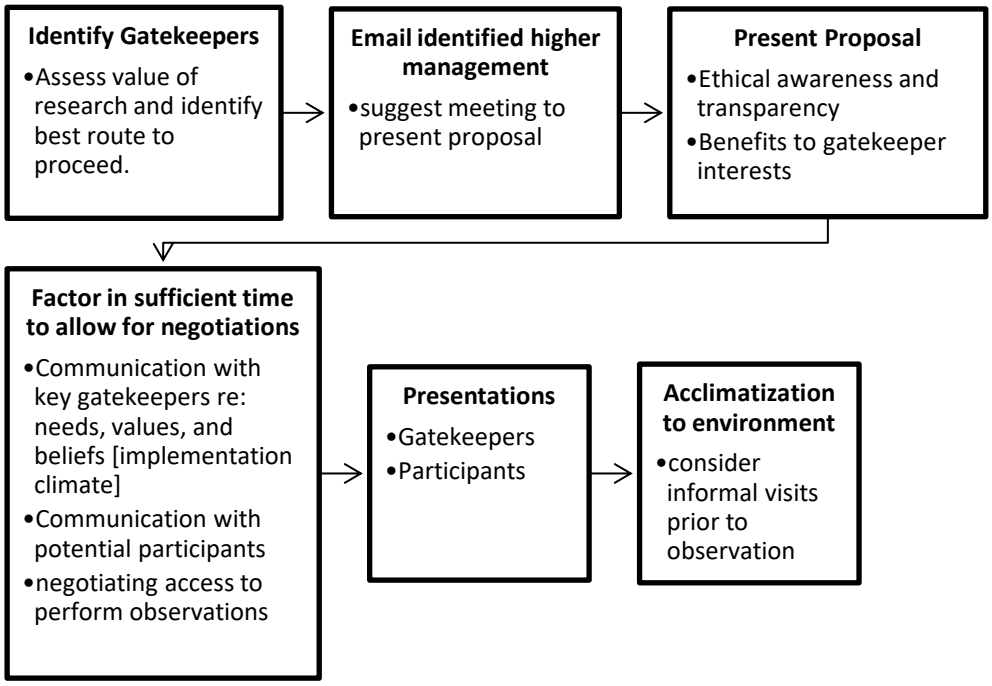
Table 7

Timeline of Events of the Researcher's Experience

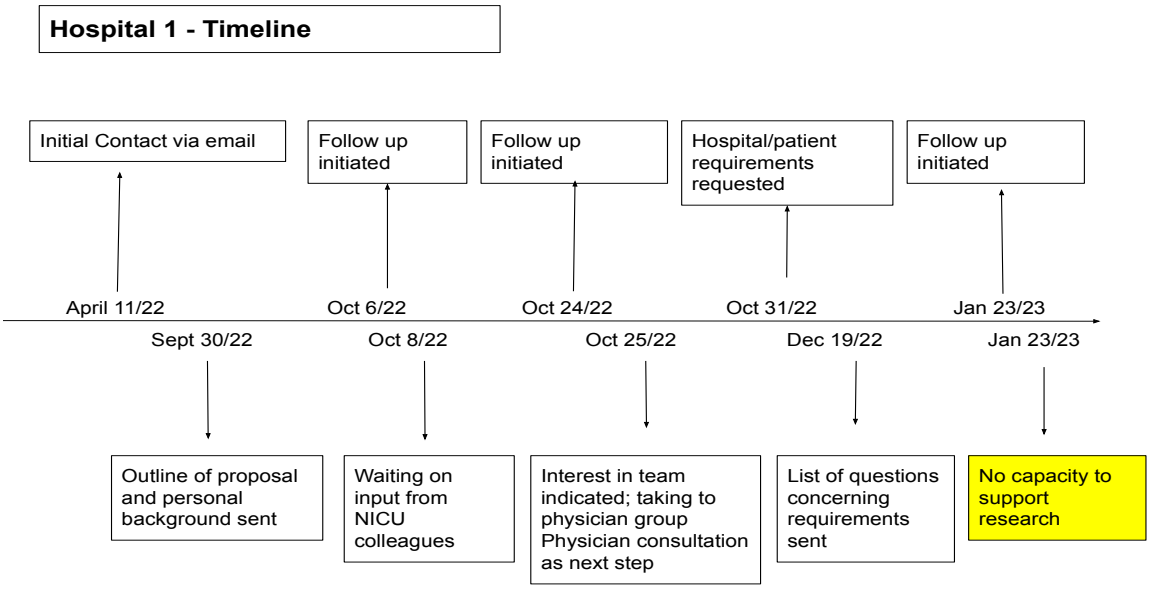
Time Period	Event
2012	Initial interest sparked in preterm infant massage
2012-2019	Extensive reading of published papers Roadblocks in pursuing professional training International exploration of training options Inquiry about hospital policies Curiosity sparks questions about NICU massage Contact with Fanshawe College for guidance Application for "From Concept to Closeout" grant
Fanshawe Research Grant 2020	Awarded Fanshawe Research Grant for NICU massage research
Decision to Pursue Master's Degree (2021)	Reflection on need for research skills
First Year as Graduate Student (2021)	Courses, new research proposal, connection with NICU
Second Year as Graduate Student (2022)	Progress, ethics approval from two institutions, setback with Hospital 1
January 2023	Hospital 2 declines to support research project
Final Months of Graduate Education	Decision to turn experience into something positive Reflective approach to challenges

Note. This table represents the historical timeline of events that the researcher experienced.

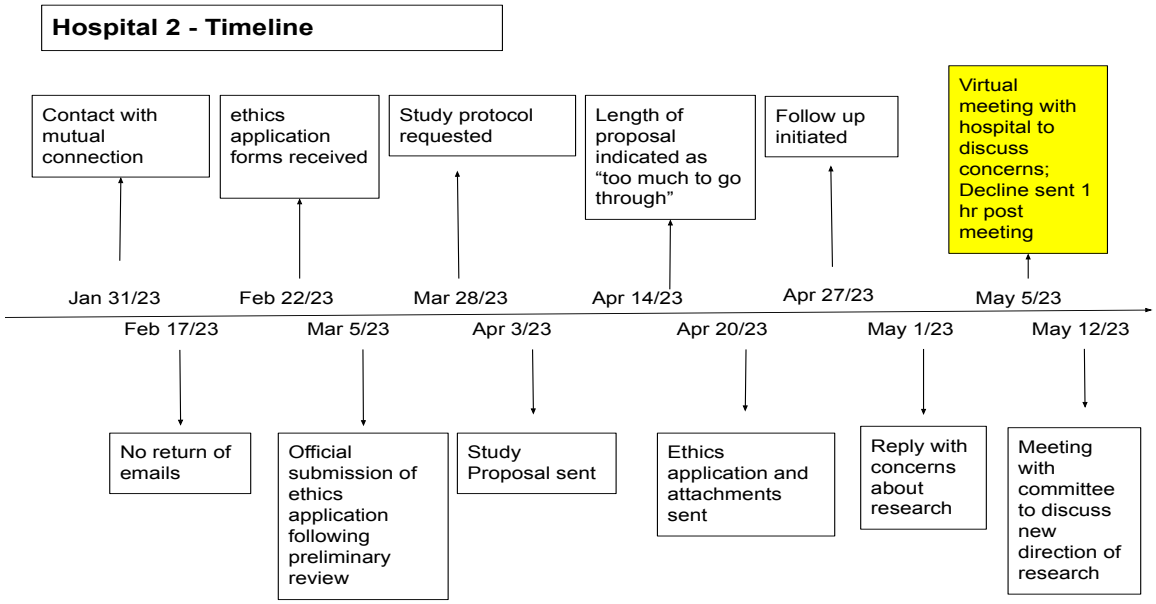
Appendix K – Høyland et al. (2015) Concept for Negotiating Gatekeeper Access



Appendix L1 – Hospital 1 Timelines for Research



Appendix L2 – Hospital 2 Timeline for Research



Curriculum Vitae

Name:	Amanda Winter
Post-secondary Education and Degrees:	BHSc. Hon Health Science – Western University September 1999-June 2003 Focus: Child and Youth Health, Health Promotion
	Diploma in Massage Therapy – Honors Graduate – D'Arcy Lane Institute January 2005-June 2006
Honours and Awards:	Fanshawe Research Fund Award, Centre for Research and Innovation Fanshawe College February 2020
	Nominated Canadian Registered Massage Therapist of the Year GoodLife Fitness 2008
Related Work Experience	Professor Fanshawe College 2016-Present
	Registered Massage Therapist Forest City Massage Therapy Clinic 2009-Present
	Research Supervisor Fanshawe College 2020, 2022-2023
	Research Co-Supervisor Fanshawe College 2021
	Registered Massage Therapist GoodLife Fitness 2006-2009