Practices and Perspectives of Music Therapists Working With Infants in Canadian Neonatal Intensive Care Units

Laura Hastings

A Thesis

in

The Department

of

Creative Arts Therapies

Presented in Partial Fulfillment of the Requirements

for the Degree of Master of Arts (Creative Arts Therapies, Music Therapy Option)

Concordia University

Montreal, Quebec, Canada

September 2019

CONCORDIA UNIVERSITY

School of Graduate Studies

This is to certify that the thesis prepared

By: Laura Hastings

Entitled: Practices and Perspectives of Music Therapists Working in Canadian Neonatal Intensive Care Units

and submitted in partial fulfillment of the requirements for the degree of

Master of Arts (Creative Arts Therapies, Music Therapy Option)

complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the final Examining Committee:

_____ Chair
Laurel Young

_____ Examiner
Guylaine Vaillancourt

_____ Examiner
Annabelle Brault

_____ Supervisor
Laurel Young

Approved by _____
Guylaine Vaillancourt, Chair, Department of Creative Arts Therapies

_____2019 _____
Rebecca Taylor Duclos, Dean, Faculty of Fine Arts

ABSTRACT

Practices and Perspectives of Music Therapists Working With Infants in Canadian Neonatal Intensive Care Units

Laura Hastings

This qualitative descriptive research investigated the current practices and perspectives of certified music therapists (MTA) working in neonatal intensive care units (NICUs) in Canadian hospitals. The Canadian context is important to consider because of this country's unique healthcare landscape, and because the use of NICU music therapy in Canada is relatively new. Three individual interviews were recorded, transcribed, and analyzed according to qualitative content analysis procedures. Results include nine overarching categories containing multiple themes. These categories include: weekly workload, referrals, assessment, evaluation, music therapy interventions, challenges of the job, rewards of the job, evolution of NICU music therapy practices, and recommendations for advancing Canadian music therapy practices. Implications for the music therapy profession, practice and continuing education, as well as implications for Canadian hospitals and recommendations for research are presented. Limitations of the study are identified. It is the researcher's hope that this study will help to promote the development of Canadian NICU music therapy programs, thus increasing Canadians' access to this type of innovative service.

ACKNOWLEDGEMENTS

To my creator who put a song in my heart.

To my parents for giving me deep roots and strong wings.

To my Granddad for always encouraging me to pursue higher education.

To my thesis supervisor, Dr. Laurel Young for her guidance in bringing this thesis to life.

To the three music therapy powerhouses who allowed me to glimpse into the important work they are doing. This research would not have happened without their contributions.

To my many music therapy champions and fellow music therapy gladiators for your inspiration, encouragement, and music.

Table of Contents

Chapter 1. Introduction

Significance and Need

NICU (neonatal intensive care unit) music therapy is a relatively new area of practice, not only in Canada, but also throughout North America (Standley, 2012). Several studies have been published on various benefits of music therapy for infants (Haslbeck, 2012; Loewy, Stewart, Dassler, Telsey, Homel, 2013; Whipple, 2000; Standley, 1998) and caregivers in NICU contexts (Loewey, 2015; Walworth et. al, 2012). These benefits will be discussed in chapter 2. However, it is important to note that I found only one study conducted within a Canadian music therapy NICU, which addressed nursing perceptions of music therapy in this context. The results of this unpublished study were presented at a conference and shared as a pdf online (Natarajan, Randel, Cameron, & Fraser, 2008). I found no publications that examine or describe Canadian NICU music therapy practices. However, I discovered 2 publications about NICU music therapy, authored by Canadian music therapist Clements-Cortès. One that described the use of the Pacifier Activated Lullaby (PAL) system (2012) and another that offered information about music therapy in the NICU (2015). At that time, Clements-Cortès (2012) stated that there were only two Canadian hospitals offering NICU-MT. Henning (2012) published an article in the *Canadian Journal of Music Therapy* that describes her experience with a music therapy pilot project at a children's hospital in Germany and presents practice guidelines for music therapists working in this environment.

Although valuable information can be gleaned from studies that have examined NICU music therapy practices in other countries, Canada has a unique healthcare landscape (described briefly in Chapter Two) and the use of NICU music therapy is relatively new as compared to other countries such as the United States. According to past discussions that I have had with Canadian NICU music therapists, they are the ones essentially developing the standards of practice within the hospitals where they are employed in various provinces, and doing so in relative isolation, as there are a limited number of people doing this work. I realized that it would be useful to understand more about the experiences of music therapists who are employed in Canadian NICUs. This information could serve as a valuable resource for Canadian music therapists who are currently doing or interested in doing this work. It could also help educate Canadian healthcare administrators and other relevant stakeholders about this music therapy

clinical specialization. Finally, this information could help to promote the development of more Canadian NICU music therapy programs thus increasing Canadians' access to this type of innovative service.

Personal Relationship to the Topic

At the time of this research, I had been practicing music therapy for six years. During my undergraduate studies in music therapy at Capilano University from 2010 until 2013 in Vancouver, British Columbia, I learned about the positive effects that music may have for premature infants and their families in NICU settings. After achieving my professional music therapy certification in 2013 (Music Therapist Accredited, MTA), I completed additional specialized training in NICU music therapy through a program developed by Dr. Jayne Standley and her team at Florida State University (Florida State University, 2019). After this training was completed, I co-founded a collaborative called West Coast NICU Music Therapy that endeavours to develop a network for Canadian music therapists working in NICUs as well as instigate NICU music therapy initiatives across Canada. At the time of this research, this collaborative had been a proponent in establishing three NICU music therapy pilot projects in British Columbia. In 2017, I decided to pursue a Masters degree in music therapy at Concordia University (Montreal, Quebec) where part of my studies included a 12-week advanced clinical practicum at a children's hospital. Here, I gained further experience working with patients and their families in the NICU under the supervision of Tanya Lavoie (MTA), who had also completed NICU specialized training. The more I learned about the nuances and intricacies of this work, the more I came to understand the high level of skill and care necessary in order to work safely and effectively with this unique and fragile population and their loved ones. I became curious about standards of best music therapy practice in Canadian NICU contexts and this led to my discussions and initial inquires outlined above. It had also come to my attention during my NICU training, that very few NICU music therapists were working in Canada.

Purpose Statement

Given the known benefits of NICU music therapy and the potential for growth of this specialized music therapy practice in Canadian healthcare contexts, as well as my personal interest in this area, the purpose of this research was to investigate the current practices and perspectives of Canadian NICU music therapists. It is my hope that the results of this research

will not only serve as a springboard for the development of more clinical NICU music therapy programs but also for more NICU music therapy research in Canadian healthcare contexts.

Research Questions

The primary research question of this study was: What are the practices and perspectives of three certified music therapists' (MTA) who work as NICU music therapists in Canadian healthcare contexts? Subsidiary questions included: How do these individuals describe the various components of their job? and What potential do they see for further development of NICU music therapy practice in Canada?

Key Terms

In Canada, a *certified music therapist* is referred to as a Music Therapist Accredited (MTA). According to the Canadian Association of Music Therapists (CAMT), "MTA Certification is granted from CAMT based on documentation of a successful intern evaluation, passing the board certification exam administered by the Certification Board for Music Therapists, and a signed statement of agreement to adhere to the CAMT Code of Ethics and Standards of Practice" (Canadian Association for Music Therapy, 2012). The CAMT defines *music therapy* as:

> a discipline in which credentialed professionals (MTA*) use music purposefully within therapeutic relationships to support development, health, and well-being. Music therapists use music safely and ethically to address human needs within cognitive, communicative, emotional, musical, physical, social, and spiritual domains. (Canadian Association of Music Therapists, 2017a; music therapy)

A clinician who identifies as a *NICU Music Therapist (NICU-MT)* is a certified music therapist who has completed a 30-hour specialized training course through the National Institute for Infant & Child Medical Music Therapy. This evidence-based program was developed by music therapy professor Dr. Jayne Standley of Florida State University (2010). The institute maintains a current list on their website of individuals who have completed the training (Florida State University, 2019). *NICU music therapy* is a specialized area of practice that requires specific training (identified below and described in Chapter Two) and is defined as "the use of music to enhance developmental care and promote maturation of preterm infants" (Standley, 2012a). *NICU-MTs* may use a variety of interventions with infants, parents, and staff in the NICU including the use of receptive auditory stimulus and kinesthetic stimulation (Haslbeck,

2012). Similar to standard clinical music therapy practice, NICU-MTs engage in individualized assessments, treatments, and evaluation of outcomes.

First Sounds: Rhythm, Breath, and Lullaby (RBL) is a training program currently being established in 13 countries that was developed by Dr. Joanne Loewy from the Beth Israel Medical Center in New York, which is a three-part training for certified music therapists (Nöcker-Ribaupierre, 2013). This training program involves "A NICU orientation, music therapy in the NICU—learning and observation (infant session observations; parent/infant session observations), and Integration and Intervention (music therapy and case studies with supervision)" (Nöcker-Ribaupierre, 2013, p. 92).

Summary of Chapters

This thesis is organized into five chapters. In chapter 1, I have described the significance and need for this research as well as my personal relationship to the topic. I have outlined the primary and subsidiary research questions and defined key terms. In chapter 2, I present a review of relevant literature. Chapter 3 describes the methodology and chapter 4 contains the research results. Chapter 5 discusses these results and identifies various implications.

Chapter 2. Related Literature

This chapter reviews literature relevant to the practices and perspectives of music therapists working with infants in Canadian NICUs. The first section presents an overview of the NICU and its challenges. The second section presents an overview of music therapy in the NICU.

An Overview of the Neonatal Intensive Care Unit

NICUs serve premature infants, meaning infants born prior to 37 weeks of gestation (Public Health Agency of Canada, 2017, p. 19), with complex medical needs. Approximately 15 million babies are born prematurely each year across the globe (Preterm Birth, 2018). In Canadian hospitals, the rate of prematurity is approximately 8.1% (Public Health Institution of Canada, 2017, p. 19). A report conducted by the Canadian Premature Babies Foundation in 2014 found that there are 30 NICUs in Canada and 135 Canadian hospitals with either a NICU or a special care nursery (Canadian Premature Babies Foundation, 2014). Globally, preterm complications are the leading cause of death in children under 5 years of age (Preterm Birth, 2018), and preterm children who survive are particularly vulnerable to various complications, including: neurodevelopmental impairments (Bieleninik, Ghetti, & Gold, 2016; Gooding, 2010), disability, and developmental delays (Bieleninik et al.).

The literature revealed that premature infants and their caregivers experience a variety of additional challenges while in a NICU environment, including engaging with the acoustic climate of the NICU (Nöcker-Ribaupierre, 2013) and stress (Gooding & Trainor, 2018; Shaw et al., 2013).

Acoustic environment. Infants require exposure to meaningful sounds to fine-tune the hair cells of the cochlea as well as their neuron connections to the spiral ganglion and cochlear nuclei (Graven & Brown, 2008). Additionally, positive auditory experiences are essential for early brain maturation and may be a contributing factor for healthy neurodevelopment (McMahon, Wintermark, & Lahav, 2012). The acoustic environment of the NICU may not offer the soundscape needed for healthy development thus adversely impacting infant wellness (Nöcker-Ribaupierre, 2013). Infants may hear a variety of aggravating sounds in the NICU, including acoustic alarms, and when patient incubators are within close proximity to each other it can be difficult to control sound pollution and privacy (Nöcker-Ribaupierre, 2013). Additionally, incubators can amplify environmental sounds to levels well above the 114 decibels that is

categorized as painful for infants in the NICU (Nöcker-Ribaupierre, 2013). In addition to being stressful for the infant, the experience of the NICU is also stressful for the infant's parents.

Parental stress. Having a premature infant in the NICU is tremendously stressful (Shaw, Bernard, Storfer-Isser, Rhine & Horwitz, 2013). Parents of an infant in the NICU may experience helplessness, depression, feelings of being overwhelmed, anxiety, anger, separation, exclusion, lack of control, and disappointment (McLean, 2019; Nöecker-Ribaupierre, 2013). They also may experience difficulties adapting to risk, oscillate between feelings of hope and hopelessness, and make attempts to preserve the family unit (McLean, 2019). The stress of having an infant in the NICU can cause parents to experience post-traumatic stress symptoms and put them at risk for acute stress disorder (ASD) or posttraumatic stress disorder (PTSD; Gooding & Trainor, 2018).

Financial costs of the NICU. Caring for premature infants poses a significant cost to Canadian healthcare systems (Public Health Agency of Canada, 2017). According to Shah et al. (2018), more than 25,000 infants are born prematurely in Canada each year. These preterm births affect the Canadian Health Care system more than any other chronic condition, costing over $8 billion per year (Shah et al., 2018). A study that explored the economic impact of prematurity in Canada found that "the total national costs are $123.3 million for early preterm infants, $255.6 million for moderate preterm infants, $208.2 million for late preterm infants, and $587.1 million for all infants" (Canadian Premature Babies Foundation, 2014, p. 16).

An Overview of NICU Music Therapy

NICU music therapy is "the use of music to enhance developmental care and promote maturation of preterm infants" (Standley, 2012a, p. 311). In NICU contexts, music therapists engage in individualized music therapy assessments, treatments, and the evaluation of outcomes (Standley, 2012a). To do this, music therapists use a variety of musical interventions with infants, parents, and staff in the NICU, including the use of receptive auditory stimulus and kinesthetic stimulation (Haslbeck, 2012).

Music therapy research in the NICU began almost 30 years ago amidst initial resistance from medical staff towards the possibility of music therapy benefiting premature infants (Standley, 2014). NICU music therapy is now well known in the United States, where over 300 music therapists have specialized training to work in NICUs (Standley, 2014). A 2015 survey of 52 current or former NICU music therapists in the United States found that the average number

of years that respondents had been practicing in a NICU was 3.06 years, and that on average, respondents spent three hours per week in the NICU seeing three to four infants per week (Trainor, 2015). In 2014, Standley noted that there were over 50 research studies published in refereed journals that "provide[d] evidence-based methodology for NICU-MT and document[ed] important and unique infant benefits from music" (para. 1).

Due to the fragile nature of infants in the NICU and the complex needs of their parents and families, there is a need for specialized training for music therapists practicing in NICUs (Standley, 2014; Haslbeck & Costes, 2011; Trainor, 2015). While some music therapists may receive NICU training through their hospital (Trainor) or through an adaptation of Creative Music Therapy (Haslbeck & Bassler, 2018), the two predominant NICU music therapy training programs in North America are the Standley training, known as NICU-MT (Standley, 2014) and the Loewy training, known as First Sounds: Rhythm, Breath, and Lullaby (RBL) (Haslbeck & Costes, 2011). Both trainings partner with "a music therapy institute (a hospital), a university, and the American Music Therapy Association (AMTA)" (Haslbeck & Costes, p. 22), and both require trainees to complete readings and successfully pass an examination prior to certification. Each training program encompasses a distinct philosophical stance and equips participants with specific interventions to meet unique goals.

Neonatal Intensive Care Unit Music Therapy (NICU-MT) training. NICU-MT training was formally established in 2005 (Florida State University, 2019) by music therapist Dr. Jayne Standley and her team in Florida, USA in cooperation with four universities and five medical centers (Standley, 2014). This training, which operates through The National Institute for Infant and Child Medical Music, prioritizes evidence-based research and draws upon medical and behavioural music therapy approaches (Standley, 2014). Once completed, this training awards a specialized certification through The National Institute for Infant and Child Medical Music, which is approved by the Certification Board for Music Therapists (CBMT; Florida State University, 2019). Acquiring this certification earns music therapists the NICU-MT credential and inclusion in the online registry of credentialed NICU-MTs (Standley). Over 300 music therapists from all over the world have been trained in this method, including music therapists from Canada (Standley, 2014).

Interventions unique to this training. In NICU-MT training, music therapists are taught to use Multimodal Neurologic Enhancement (MNE), formerly known as multimodal stimulation,

and Pacifier Activated Lullaby System (PAL) to address neurologic and feeding goals (Haslbeck & Costes, 2011). Both of these interventions are unique to NICU-MT training. MNE is an intervention that uses an auditory, tactile, vestibular, and visual protocol with infants starting between 30 and 32 weeks of age (Haslbeck & Costes, 2011). In MNE, infants are introduced to a gradual layering of stimulation that is neurodevelopmentally designed and layers stimulation according to each infant's responses (Gooding, 2010). Contrastingly, PAL uses music to reinforce nonnutritive sucking and improve feeding goals (Standley et al., 2010). PAL involves an infant sucking on a pacifier which is connected to a speaker that plays music in response to the infant's suck strength and rate, thus training the infant through contingent learning (Haslbeck & Costes, 2011). Music therapists trained in MNE and PAL understand the research that supports each intervention as well as how to administer the interventions without harm and to the greatest benefit.

Training components. NICU-MT training program offers certified music therapists a three-component training course that "consists of lectures, clinical fieldwork, and reading" (Nöcker-Ribaupierre, 2013, p. 91).

Cost and accessibility. To date, international participants interested in doing the practicum component of the NICU-MT training must pay $250 USD to register and can only receive this component in Louisville, Kentucky (Florida State University, 2019). The lecture component is held in conjunction with the American Music Therapy Association (AMTA) national conference (Nöcker-Ribaupierre, 2013), however it is not available at every AMTA National conference. Therefore, interested individuals may not have access to the lecture portion every year. Required readings and a final examination are completed after the lecture and fieldwork portions (Florida State University, 2019).

First Sounds: Rhythm, Breath, and Lullaby (RBL) training. Music therapist Joanne Loewy and her team developed a specialized NICU music therapy training program, known as First Sounds: Rhythm, Breath, and Lullaby (RBL) in 1994 (Louis Armstrong Centre for Music & Medicine, 2019a) in New York City at the Beth Israel Medical Center (Haslbeck & Costes, 2011; Nöcker-Ribaupierre, 2013). RBL training employs a medical music psychotherapy approach that stresses "a deep sensitivity, respect and concern for the premature infant, parents, families and NICU staff" (Haslbeck & Costes, p. 25). This training aims to address the needs of the infant while also involving family members in the care of the infants through the use of

family interviews and consultation (Haslbeck & Costes). A list of music therapists who have completed the RBL training is available online (Louis Armstrong Centre for Music & Medicine, 2019a).

Training components. RBL training has both practical and theoretical components, including 100 hours of clinical observation and hands-on training at Beth Israel Medical Center and St Luke's Roosevelt Hospital (Haslbeck & Costes, 2011). RBL training has three components: "NICU Orientation, Music Therapy in the NICU-learning and observation (infant session observations; parent/infant session observations), and Integration and Intervention (music therapy and case studies with supervision" (Nöcker-Ribaupierre, 2013, p. 92). Medical music psychotherapy topics explored include: "loss and grief, the role of attachment, and the impact of trauma on the experience of the premature infant" (Haslbeck & Costes, p. 26). Supervised practical experiences and an examination are completed prior to certification (Nöcker-Ribaupierre, 2013).

Interventions unique to this training. The RBL training teaches music therapists several unique interventions. For example, trainees learn to use an ocean drum to mimic the intrauterine auditory environment of the preterm infant, and to use a Gato box to mimic the sounds of the mother's heartbeat (Haslbeck & Costes, 2011). Music therapists are also trained to work with an infant's *song of kin*, a song that is special to the mother and/or the entire family unit. The music therapist and/or family sing or hum the song of kin, sometimes with guitar accompaniment (Haslbeck & Costes). Finally, environmental music therapy is also taught, which aims to reduce parental and staff stress by playing soothing lullabies in the NICU to create a nurturing and calming atmosphere (Haslbeck & Costes).

***Cost and accessibility*.** The rates for the various components of the RBL training are unknown, as they not listed online (Louis Armstrong Centre for Music & Medicine, 2019). At the time of this research, Canadians interested in receiving this training would need to contact someone who is listed as a grandparent on the training website and negotiate with them to see if they would provide the training (Florida State University, 2019). At this time, Canadians would be required to travel internationally to complete the practicum component of their study because no one is offering this training component in Canada at this time.

Differences between NICU-MT and RBL trainings. There are notable differences between the NICU-MT and RBL training programs. They differ in their approach as the NICU-

MT training uses a behavioural medical music therapy model (Standley, 2014) and the RBL training uses a music psychotherapeutic model (Haslbeck & Costes, 2011). Interventions used also differ, as Standley practitioners are trained in MNE and PAL interventions (Standley, 2014) and Loewy practitioners in EMT, the Gato box, ocean drum, and song of kin. Costs and accessibility also vary between trainings.

Benefits of NICU Music Therapy

There are many documented benefits of NICU music therapy for both the infants and their caregivers: including stabilization of physiological parameters, feeding and weight gain, shortened hospital stay, caregiver anxiety, attachment and bonding, and support for infants with Neonatal Abstinence Syndrome (NAS).

Stabilization of physiological parameters. NICU music therapy has been shown to stabilize oxygen saturation levels, heart rates, respiration rates, and pacification (Loewy, Stewart, Dassler, Telsey, Homel, 2013). NICU music therapy has also been shown to lower infant heart rates (Loewy, Stewart, Dassler, Telsey, & Homel, 2013). One study found live music to be most effective in slowing heart rates and facilitating deep sleep for NICU infants (Arnon et al., 2006).

Feeding and weight gain. Before being discharged from the NICU, infants need to demonstrate effective oral feeding skills (Chorna, Slaughter, Wang, Stark, & Maitre, 2014) and efficient suck-swallow-breathe behaviours (Standley, 2012b). The literature reveals that necessary weight gain and caloric intake improve with music therapy (Loewy et al., 2013; Standley, 1998; Standley, 2011; Whipple, 2000), as do feeding behaviours involving sucking patterns (Loewy et al., 2013).

Research investigating the use of Standley's (2010) Pacifier-Activated Lullaby (PAL) system found that infants who experienced PAL had significantly shorter lengths of gavage feeding (Palazzi, Nunes, & Piccinini, 2018) and significantly improved oral feeding outcomes (Chorna et al., 2014). Relatedly, researchers found that administering music therapy 15 minutes prior to and for 15 minutes during breast-feeding was associated with a significant increase in breast milk expression and less maternal stress (Jayamala, Lakshmanagowda, Pradeep, & Goturu, 2015).

Shortened hospital stay. A shortened hospital stay can be beneficial to both the infant and their caregiver(s). Shortened hospital stays also financially benefit Canadian health care systems and hospitals due to the expense of caring for premature infant needs. Two studies found

that infants who received the multimodal neurologic enhancement (MNE) music therapy intervention were discharged from the NICU sooner than their peers who did not receive MNE (Walworth et. al, 2012; Whipple, 2000). Similarly, researchers found that infants who participated in the developmental multimodal stimulation (DMS) music therapy intervention were discharged from the NICU sooner than their peers who did not receive DMS (Walworth et al., 2012).

Caregiver anxiety. The effectiveness of live music therapy interventions to lower maternal anxiety has been documented in the literature (Ranger et al., 2018; Loewy et al., 2013; Loewy, 2015). Music therapy combined with kangaroo care[1] has also been effective in decreasing maternal anxiety (Lai et al., 2006) and increasing feelings of relaxation and calm in both infants and parents (Teckenberg-Jansson, Huotilainen, Pölkki, Lipsanen, & Järvenpää, 2011). This dual treatment intervention combines individualized live music therapy and kangaroo care with the purpose of decreasing parental and infant stress, increasing the transcutaneous O2 saturation, and decreasing an infant's pulse (Teckenberg-Jansson, Huotilainen, Pölkki, Lipsanen, & Järvenpää, 2011).

Loewy (2015) found that the use of parent-preferred songs with parents as active participants in music therapy can help parents feel as though they have a role to play in their infant's care, which fosters resiliency. Similarly, MacLean (2016) found that early musical interactions may promote and facilitate "a parent's experience of deep human connection and intimacy with their baby in the NICU" (p. 9). In a medical environment rife with uncertainty, the facilitation of healthy and meaningful parent-infant interactions is essential.

Attachment and bonding. Forming positive emotional bonds between a parent and their newborn is "the basis for a nurturing parent-infant relationship and essential for the baby's long-term development" (Ettenberger & Ardila, 2018, p. 42). Given that "the first relationship has a strong musico-auditory basis," (Edwards, 2011, p. 11) music therapists can have a unique role in supporting positive attachment and countering attachment difficulties. According to Nöcker-Ribaupierre (2013), one of the main goals for NICU music therapy practice is to "engage and support the infant's parents by providing opportunities for culturally appropriate infant-parent interaction and bonding" (p. 78). Relatedly, research demonstrated that the live use of the song of

[1] Kangaroo care is "a technique developed by Dr. Rey Sanabria and Dr. Martinez Gómez in Colombia in the late 1970s, in which the baby is put upright on the chest of the caregiver and covered with a blanket, providing skin-to-skin contact and thermo-regulation" (Ettenberger, Beltrán Ardila, 2018, p. 43).

kin music therapy intervention enhanced bonding and decreased parental stress (Loewy et al., 2013).

Neonatal abstinence syndrome. Canadian NICUs are increasingly caring for infants with Neonatal Abstinence Syndrome (NAS) (Davies et. al, 2015). NAS affects infants exposed to opiates or illicit drugs while they are in their mother's womb. Infants with NAS can require longer hospital stays than infants without NAS (McMullen, Dulski, & Blobaum, 2014). Symptoms of NAS may last up to 6 months after birth (Sublett, 2013) and include respiratory, gastrointestinal, and autonomic symptoms as well as hyperirritability of the central nervous system (Cleary et al., 2010). Infants born with NAS are often treated with pharmacological interventions, however the safety and long-term effects of these treatments have been disputed (Sublett, 2013). Research has shown that almost half (42.31%) of the music therapists working in American NICUs work with infants with NAS (Gooding & Trainor, 2018, p. 3). Studies have shown that music therapy interventions can decrease agitation and promote sleep for infants with NAS (Sublett, 2013). Specific music therapy interventions, such as entrainment singing, are indicated to support infants with "high irritability [and] inconsolable crying" (Nöcker-Ribaupierre, 2013, p. 85).

NICU Music Therapy in Canada

As indicated in chapter 1, part of the need for this study is because Canada has a unique healthcare landscape. Canada's healthcare system provides publically funded universal coverage for "medically necessary health care services." (Government of Canada, 2018, para. 1). Provincial, territorial, and national governments administer and deliver services, including regulation, which varies across provinces and territories (Government of Canada, 2019). Although counseling and psychotherapy is regulated in some Canadian provinces, music therapy does not have title protection and is not currently considered as a regulated profession in and of itself in Canada (Canadian Counselling and Psychotherapy Association, n.d.). Due to this issue and because of the differences in regulation of health care practice among provinces and territories, it has been difficult to ascertain a comprehensive understanding of standardized practices of music therapists working in Canadian NICUs.

At the time this paper was written, there were few NICU-MT research studies originating in Canada. A survey study conducted in Nova Scotia that examined nurses' perceptions of music therapy in the NICU found that one 30-minute music therapy session positively affected the

mood of NICU nurses without interfering with their professional performance (Natarajan, Randel, Cameron, & Frager, 2008, Conclusions section). This study recommended exploring how music therapy may be incorporated into a wellness initiative for staff support and workplace satisfaction as well as the effect of music therapy on staff of disciplines other than nursing (Natarajan, Randel, Cameron, & Frager, 2008, Conclusions section).

Canadian music therapist Clements-Cortès has authored two articles about NICU-MT, one describing the Pacifier Activated Lullaby (PAL) (2012) and another offering "background information on premature infants and an overview of implications for music therapy in the NICU" (2015, p. 31). In 2012, Clements-Cortès stated that there were only two Canadian hospitals offering NICU-MT. Due to my professional involvement in this area, I am aware of at least eight music therapists working in Canadian NICU contexts at the time of writing this paper. Given the scarcity of Canadian research on NICU music therapy, further investigation is required in order to understand current approaches to music therapy in Canadian NICUs. Due to Canada's unique health care system and medical landscape, research is required to assess contemporary practices and perspectives of music therapists working in Canadian NICU contexts in order to advance music therapy practice in Canadian NICUs.

Chapter 3. Methodology

Design

This study employed a qualitative descriptive design, using content analysis techniques, which involved an "empirical, methodological controlled analysis of [interview] texts within their context of communication, following content analytical rules and step-by-step models, without rash quantification" (Mayring, 2000, paragraph 5). This study was not designed to produce generalizable results, rather, it was designed to compare, contrast, and collectively describe the practices and perspectives of three certified music therapists' (MTA) who work as NICU music therapists in Canadian healthcare contexts. Rather than searching for implicit meanings contained in the data, this study focused on explicit description of the content of communication in order to create a fundamental understanding of the topic under investigation (Vaismoradi, Jones, Turunen, & Snelgrove, 2016).

Participants

The research received approval from the Concordia Human Research Ethics Committee (UHREC) prior to initiating any recruitment or data collection procedures (see Appendix A). To the best of my knowledge, there are approximately eight music therapists working in Canadian NICUs. Due to the time limitations involved in a master's thesis, a purposive approach to sampling was employed, which targeted identified individuals who met the criteria for inclusion at the time of the interview: (a) certified music therapists in good standing with the CAMT (MTAs); (b) currently working or had worked in a Canadian NICU as a music therapist within the past five years; (c) completed training specialization in the Loewy and/or Standley NICU music therapy models (described in Chapter Two); and (d) English speaking. I identified potential participants who met the criteria for inclusion, based on my professional knowledge of certified music therapists who are working in NICU music therapy contexts in Canada. Emails were obtained through my professional contacts list. I sent the recruitment email (see Appendix B) to one person at a time, targeting individuals who lived in various parts of Canada until I had three confirmed participants. Once a participant agreed to be part of the study, an individual interview was scheduled at their convenience. They received a copy of the consent form via e-mail and returned a signed copy to me prior to their interview. This form outlined the purpose, procedures, and any potential risks associated with participating in this study (see Appendix C).

Participants had the option of choosing whether to remain anonymous or be identified within the context of this study. This allowed participants the possibility of being affiliated with their own unique professional practices and perspectives as well as the opportunity to be acknowledged for their contributions to this research. It is important to note that all three participants took part in this research as individual professionals and not as representatives of current or former workplaces; no identifying information related to their workplaces is included in this study.

It is also important to note that I had what could be perceived as dual relationships with the participants in that I have had varying degrees of previous collegial interactions with them because of my involvement in NICU music therapy practice. This was mitigated through non-coercive recruitment procedures (as outlined above). The consent form (see Appendix C) also indicated that they could contact my research adviser if they had any concerns and that they could withdraw from the research without penalty. I reiterated this information before conducting the interviews. Finally, the nature of the information being gathered was not particularly sensitive and participants had complete control over what they chose to share.

Materials

My password protected MacBook Air computer was used to email participants, save audio files, transcribe interviews, and write this paper. Two of the interviews were audio recorded using the application GarageBand on my password-protected iPad, as well as the application Voice Memos on my password-protected cellphone. The app Call Recorder, on my password protected cellphone, and GarageBand, on my iPad, were used to audio record the third interview. An external hard drive stored in a locked area in my home was used to save backup copies of all data.

Data Collection Procedures

I conducted three semi-structured qualitative interviews over the month of June 2019: one via phone, one in person (in a private location), and one via FaceTime. An interview template with sample guiding questions (see Appendix D) was sent via e-mail to participants prior to their interview so that they could take some time to reflect upon the areas to be addressed. Each interview lasted for approximately 30-minutes. As each interview unfolded, I asked additional questions if clarification was needed or if a relevant topic emerged (e.g., Can you say more about that?), being mindful of keeping the conversation focused on the research topic.

As noted above, all interviews were audio-recorded. Careful measures were taken to ensure no files were uploaded to the iCloud. After the interviews, the audio files were downloaded onto my computer and deleted from all audio recording devices. I wrote field notes to describe the context of the interviews and to record thoughts and ideas that emerged during and after the interview process as well as during the analysis of the transcripts.

Data Analysis Procedures

I transcribed the interviews and sent each individual a verbatim copy for review. Participants had ten business days to get back to me with any revisions. With the exception of one small factual correction, no revisions were requested by any of the participants. I created an individual description of each participant based on the demographic data that they provided. Questions on the interview template (see Appendix D) were re-worded and used as pre-determined theme categories. I then completed a coding process where I extracted relevant data from each individual's transcript and organized it in tables under the pre-determined categories. I then compared the data across participants to allow themes to emerge within each predetermined theme category. These themes were supported by participant quotes. I used my field notes to help verify and elaborate upon (i.e., describe) the themes. See Vaismoradi, Jones, Turunen, and Snelgrove (2016) which informed aspects of my approach to theme development.

When I reached the end of this process, I realized that the interview scripts contained additional data that was relevant to the research questions but that had not been accounted for by the pre-determined categories. Categorization and examination of this content was completed through open coding, which resulted in one additional category (Neuman, 2010). I then conducted an axial coding process where categories of data were labeled before completing the step of selective coding where I examined the previous codes to identify and select data that supported themes that emerged (Neuman, 2006; 2010). These themes were supported by participant quotes. I also used my field notes to help verify and elaborate upon the themes.

Member checking of the results was not performed mostly for practical reasons (i.e., time constraints). However, some literature suggests that there is "no evidence [to indicate] that routine member checks enhance the credibility or trustworthiness of qualitative research" (Thomas, 2017, p. 25).

Chapter 4. Results

The primary research question of the present inquiry was: What are the practices and perspectives of three certified music therapists' (MTA) who work as NICU music therapists in Canadian healthcare contexts? Subsidiary questions included: (a) How do these individuals describe the various components of their job?; and (b) What potential do they see for further development of NICU music therapy practice in Canada? To answer these questions, I conducted three individual interviews with music therapists who met the inclusion criteria (see Chapter Three). I compiled a brief description of each participant (presented below) based upon the demographic and contextual information that they provided. I used a pseudonym for one research participant who wished to remain anonymous. The other participants chose to be identified. The participant descriptions are followed by descriptions of themes that emerged within predetermined and newly identified theme categories through a cross case analysis process (see data analysis procedures in Chapter Three). I used quotes and direct examples from the participants' interviews to verify my analysis.

Participant Descriptions

At the time of our interview, Christelle Jacquet had been a music therapist for 13 years. She was working part time (28 hours a week) in a foundation funded hospital position with approximately 75% of her time being spent in the NICU. The remainder of her time was mostly spent doing follow up work with NICU graduate babies (i.e., those who have moved to other areas of the hospital).

Christelle began her work in NICU music therapy at the beginning of her professional career. She joked that she was drawn to NICU music therapy because she was "the stereotype of a woman who likes babies." However, the main reason she decided to pursue this work was that she realized that "there was so much more that we could do [with music therapy] than just work on infant development." She felt that music therapy could have a systemic impact where premature infants, families, and staff members could all benefit in various ways. When Christelle was hired, a music therapy colleague was already working at the hospital with premature infants in the NICU to address developmental goals of older infants. Soon after starting her job, Christelle pursued specialized trainings that allowed her to deepen her practice and "develop more strategies to target the younger ones and to see other interventions that could be done in different settings." Christelle became a certified NICU-MT through the National Institute for

Infant & Child Medical Music Therapy based out of Florida State University (see Chapter Two). She subsequently completed the First Sounds: Rhythm, Breath, & Lullaby (RBL) training developed by Dr. Joanne Loewy (see Chapter Two). Both trainings were funded by her workplace. She is the only Canadian music therapist with the "grandparent" title (acquired through RBL training), meaning that she is qualified to train certified music therapists seeking specialization in the RBL approach.

At the time of our interview, Joan (pseudonym) had been a music therapist for 8.5 years and had been working full time in a foundation funded position at a children's hospital for three years—37.5 hours per week in pediatrics, with approximately 6-10 hours being spent in the NICU.

During her first weeks on the job, both Joan and the NICU staff saw a need and opportunity for music therapy in the NICU. "The NICU coordinators were actually the first, one of the first, people to walk into the door for the in-service [I offered] and they were really excited to hear more about how music therapy could help their patients." Soon after, she pursued NICU-MT certification and Level I of the RBL training with financial support from her facility. She hopes to complete the RBL training, however, "it's quite a big commitment, not only financially because you have to stay in New York City, but also time-wise."

At the time of our interview, Carol Weidemann had been a music therapist for 18 years. She had been working in a NICU since October of 2018 (7.5 hours per week) as part of a 6-month foundation funded music therapy pilot project working with premature infants in complex care. This made up about 20% of her total private practice that occurred in a variety of other community and clinical contexts.

Carol described her journey to working in a NICU as a "natural evolution" as throughout her career, she had worked with closely related populations/contexts including: high-risk maternity, women (from pregnancy to postpartum), children's hospitals, and paediatric nursery and intensive care units. She had received Neonatal Abstinence Training (NAS)[2] within the context of her high-risk maternity work and specialized training relating to the Pediatric Intensive Care Unit (PICU) prior to working in the NICU. She also shadowed NICU staff in preparation for the music therapy pilot project. Carol received her NICU-MT credentials through

[2] "Neonatal abstinence syndrome (NAS) is a withdrawal syndrome that infants exposed to opioids may experience in the first few days of life" (Rodríguez & Smith, 2018, p. 23).

the National Institute for Infant & Child Medical Music Therapy in February 2018, which she pursued out of a long-standing personal interest. Her tuition and travel were partially funded by the hospital's auxiliary fund.

Cross Case Categories and Themes

Category 1: Weekly workload.

Theme A: Client contact. Due to the complexities experienced by premature infants and the unpredictability of medical environments, all three participants indicated that their daily schedules have to be very flexible in terms of when they can see patients. All participants indicated being able to see 100% of their referred patients. Based on referrals, Christelle tries to see between 3-6 patients for individual sessions per workday. She sees "who's available, where the needs are, depending on their state, also if they're on their own or if the parents are there… So I don't really have fixed times with most of them." Carol sees every infant in her designated NICU pod at least once per week. Joan said she: "go[es] wherever my referrals go or where I need to be in order to support a patient in a procedure." Her sessions are scheduled specifically around times in which staff members are providing cluster care[3] to infants. This differs from Carol and Christelle who work with infants and families on a more flexible schedule based on various factors including: when infants are awake, when care is being provided, when family members are present, and when their schedule allows.

Theme B: Meetings. All participants attend multidisciplinary rounds, though only Christelle and Carol indicated that these rounds are NICU-specific. Christelle attends multidisciplinary meetings once every 3 weeks with Child Life workers, a developmental care team, and a research team to discuss events, protocols, and next steps. Because Joan's position includes several other units, she also attends rounds in various other departments. Christelle was the only participant who participates in meetings at her workplace for the purpose of professional clinical supervision. These occur weekly with a peer/music therapy colleague.

Theme C: Administrative tasks. All participants are required to complete documentation as part of their job. Documentation may include writing progress notes in patient charts and completing assessment forms. The average amount of time spent on administrative tasks per week fluctuates depending on how many clients they see and how many meetings they attend.

[3] Cluster care is a developmental care intervention (DCI) in which care providers "modify the treatment processes provided to preterm infants in the NICU for longer sleep periods without interruptions" (p. 4, Lavallée, et al., 2019).

Administrative tasks may also include responding to emails, printing resources for families, maintaining a music library, and submitting hours for workload measurement purposes.

Theme D: Education. Both Joan and Christelle attend educational in-services as part of their weekly schedules. Joan had offered in-services to staff and families since she first started working in the NICU and also indicated that she had received additional training via hospital in-services. Christelle also reported attending and offering weekly NICU in-services and workshops for both staff and NICU families. Carol did not indicate receiving or offering education services as part of her weekly workload.

Theme E: External advocacy. All participants indicated that they participate in advocacy ventures to promote the work they do in the NICU. This includes fundraising events, media projects, and meetings with donors. Christelle said, "We do videos because they [the donors] have to understand what we do and then see what we do with their money." Carol indicated she had participated in advocacy work with hospital staff prior to working in the NICU. Joan also participates in advocacy endeavours with her hospital's foundation, which includes meeting with donors.

Category 2: Referrals.

Theme A: Formal written referrals. Both Christelle and Joan's places of work require written referrals to be made through the hospital's electronic system prior to seeing specific patients. These forms include a section in which staff may indicate their reasons for referral. Contrastingly, Carol does not require written referrals.

Theme B: Formal verbal referrals. Carol was the only participant where verbal referrals were the established procedure prior to working with infants. Hospital staff members make these verbal referrals during medical rounds at the start of each week. "Because I'm the only one on the unit right now, I'm basically seeing all the babies on that unit so there isn't really much need for [a more formalized] referral [system]."

Theme C: Informal parental consent. Christelle prefers to receive familial consent prior to working with infants. "I tend to feel like parental consent is very important because if that was me I would like to know and just to have an understanding of what it [music therapy] means." Christelle receives verbal consent by communicating directly with the families, though she may proceed to see infants if timely communication with the families is not possible. The other two participants do not normally seek out parental consent prior to working with patients.

Theme D: On-call/immediate referrals. Carol was the only participant to report getting calls from other staff on her paging device to provide immediate support for patients. Physiotherapists and nurses would call her "to bring my attention to a specific baby for a specific timing." The other two participants did not mention having or using a system of this kind. Staff members reach out to Joan and Christelle in person if they are needed for immediate referrals.

Theme E: Challenges. Both Christelle and Joan noted that one of their greatest challenges is educating and re-educating staff regarding music therapy referral criteria. Christelle reported that, due to a high staff turnover, not all staff members are aware of the referral process. For example, when nursing staff questioned why she had not seen a particular infant, Christelle encouraged them to submit a referral through the hospital system so she could provide service to that patient. Joan reported experiencing similar challenges regarding educating hospital staff members as to which patients met the criteria for music therapy referrals. A social worker once said to her, "I could refer you to every patient that I have because it's so beneficial to all the patients." Though this kind of recognition was welcomed, Joan told the social worker, "everyone can have an MRI or a CT to make sure that everything is functioning well in their body, but we only prescribe those when it's necessary."

Theme F: Other considerations. Joan listed reasons staff referred infants to her, which included "whether the baby has NAS (Neonatal Abstinence Syndrome), or parents are not present, or they need support with bonding, or the baby needs some developmental support." She indicated the most likely individuals to make music therapy referrals are residents, physicians, nurses, or social workers. The other two participants did not provide specific reasons for referral. All participants are able to see 100% of their referred NICU patients.

Category 3: Assessment.

Theme A: Assessment preparation. All participants practiced similar assessment preparation protocols, which included consulting with nursing staff, reading patient charts, and meeting with parents prior to working with patients. Prior to formally assessing an infant, Joan consults with the nurse in charge to "get an update on what's going on with them and anything I should be aware of." She then reads the infant's chart and spends time speaking with the infant's parent(s) or caregiver(s) to involve them in the assessment process. Joan also involves parents in the assessment process in order "to know what songs they'd like to do or the language they speak because I do songs in all different languages and take that into account as well." All three

participants indicated that their assessment protocols include consulting parents whenever possible. Carol and Joan reported that parental consultation is particularly important for the song of kin intervention (described below), which all three participants utilize. Joan said, "I do song of kin, so I need to know songs that they'd like to do or the language they speak because I do songs in all different languages and take that into account as well."

Theme B: Assessment tools. All three participants utilized assessment forms and protocols that reflect their specialized training experiences and therapeutic frameworks. Christelle and Joan use assessment forms that they adapted to suit their population and work environment. Christelle's assessment form combines elements of the RBL and NICU-MT assessment forms. Christelle and her colleagues developed an assessment form that reflects their work "and the different type[s] of interventions that we do, especially the ones related to parents and emotional states and musical details." Joan uses an assessment form she adapted from the NICU-MT assessment forms she received during her training. Carol uses the NICU-MT assessment form without any alterations.

Theme C: Assessment protocols. Each participant indicated using slightly different assessment protocols that suit their particular environment and therapeutic framework. Carol uses the assessment protocol from the NICU-MT training she received, which involves consultation with the infant's nurse, observations of the infant's responses to musical stimuli, and observations of the infant's monitors (Standley, 2016). Joan uses the assessment criteria outlined in her adapted assessment form to guide her assessment protocol, which involves elements from both the NICU-MT and RBL training. Christelle's assessment protocol combines elements of the NICU-MT and RBL protocols. Her protocol begins with observing the infant's environment, vital signs, and physical behaviours. She then "stay[s] in tune with body language to make sure that the baby is receptive and that it's an appropriate level of stimulation." Next, she offers a layering of stimulation, which may include eye contact, breathing, humming, singing, containment, touch, guitar, instruments depending on the infant's level of development and responses.

Theme D: Other considerations. All participants keep their assessment forms for their own professional use and do not add them to patient charts, as this requires formal approval from administration. During the interview, Christelle expressed interest in advocating for the inclusion of assessments in patient charts. Christelle's motivation for this is that "people would also get a

different perspective of our work because they don't always realize what we work on because all they hear is us singing and playing depending on the condition [of the infant] and so they don't see me doing procedural assistance or… how wide the services and interventions can be."

Category 4: Evaluation.

Theme A: Formal documentation. All participants indicated that they document their evaluations of each music therapy session in the form of progress notes, which go in patients' charts. These evaluations are written as narrative accounts of their observations of the infant's state before, during, and after the session. These notes may or may not include elements of parental involvement. Christelle reported, "I always state the difference between the original state of the child and [the infant's state] at the end."

Theme B: Informal evaluation process. Each participant described their informal evaluation processes differently. Joan described evaluation as both an immediate and continuous process that reveals her patients' progress and guides her subsequent treatment plan. "It doesn't have to be at the… necessarily at the conclusion of our time together, but throughout." She added, "I have documentation from session to session so I can see the progress, if there is any." If infants are "tolerating what we've been doing for x amount of sessions, then maybe it's time to up the ante a little bit and introduce them to more." Christelle described evaluation as an opportunity to observe how infants interact with her, the music, and family members. She looks specifically for signs of engagement such as "smiles and reaching out and exploration." She recognized that the session's success does not depend on active infant engagement because "we know that it's going to be more receptive than active and that's okay because it's not about always being active, it's more about having the time for the baby to just listen and be accompanied in a transitioning state." Carol indicated that her evaluation process involves documentation and charting after every session.

Category 5: Music therapy interventions.

Themes described in this category are either specific standard interventions that participants learned in their NICU trainings (e.g., Multimodal Neurologic Enhancement) or interventions that in combination fall within an overarching theme (e.g., developmental interventions).

Multimodal Neurologic Enhancement (MNE). All participants listed MNE as one of their most commonly used interventions (MNE is described in Chapter 2). Christelle noted that

she tends to offer this intervention for infants "early on, especially when babies are still premature."

Developmental interventions. All participants indicated commonly using developmental interventions in their practice. Carol frequently uses developmental interventions "because a lot of these babies that I'm working with are a little bit older." Christelle uses musical stimulation to support developmental goals by using instruments and singing to promote alertness and cognitive and physical development. She often partners with physiotherapists and occupational therapists to support goals such as "muscle tone, head control, movement ability, and tracking." Joan uses developmental interventions to introduce infants "to a more multi-sensory environment" and to promote visual tracking and tactile stimulation.

Song of kin. Both Joan and Carol reported commonly using song of kin in their practice (song of kin is described in Chapter 2). Joan reported that this intervention specifically encourages parental participation because "if it's songs that they [the parents] like then they're more likely to participate." Christelle reported using this intervention occasionally.

Voicework & containment. Christelle was the only participant to report that she often uses a combination of voicework and containment in her work. Contingent singing is a vocal intervention wherein the music therapist consciously manipulates "melody, register, dynamics, tempo, timbre, attack, and silence to provide the infant with contingent interaction and a balance between stimulation and support in the moment" (Malloch, et al., 2012, p. 390). Christelle was the only participant to report using a combination of vocal breathing songs, toning, and containment because, as she said, "I found that they're more effective together." She often involves the parent(s) or a volunteer for this intervention; "whether it's from me or from the parent, or from the volunteer." She uses this intervention in the context of procedural support "to help the baby cope with everything that's happening to [them]."

Joint kangaroo care and music therapy. Joan was the only participant to list joint kangaroo care and music therapy as one of her most common interventions. This dual treatment is described in Chapter 2.

Category 6: Challenges of the job.

Theme A: Lack of understanding of music therapy. All participants reported experiencing challenges with NICU staff members regarding a lack of understanding of what music therapy is and how it can be used in the NICU to benefit patients and families. Carol

indicated that one of her primary challenges is "building trust with the NICU team." She explained, "because they [the staff] are incredibly committed and protective of these very, very vulnerable infants. I think it took quite a lot of time and discussions and evidence to show them that I could be [a] part of that team." Her ongoing challenge includes ensuring NICU staff members understand the components of her work such as referral, assessment, evaluation, and interventions. Christelle indicated similar challenges: "for people that aren't familiar with music therapy and NICU music therapy in particular, it might seem counterintuitive to have music therapy in that environment when they're trying to keep it so quiet and calm." Christelle reported not receiving referrals for all eligible infants because of high staff turnover. "That's why some babies sort of fall through the cracks because they don't necessarily get identified … [staff] don't necessarily think about it because they don't know about it." Joan listed educating staff as one of her main challenges in the NICU.

Theme B: Communication challenges with families. Only Christelle stressed the challenge of communicating with families who are not always present during her work hours. Christelle explained, "it's challenging to connect with them and gain valuable insight into their family's values." She added, "I can't witness, I can't model, I can't give suggestions." She felt that these missed connections prevent her from learning their "whole family story." She values having parents introduce their infants to her because those moments empower parents to feel like the specialists. One of Christelle's particular areas of interest in research is understanding how to support the unique needs of fathers in the NICU, which she feels unable to do if she does not see them. The other two participants did not list communication with families as a challenge of their practice.

Theme C: Communication challenges with staff. Christelle was the only participant to report specifically on experiencing challenges in navigating communication with NICU staff members. For example, after particularly successful sessions with infants while parents are absent, she often asks the infant's nurse to pass on a verbal report to the parent(s), which would not always happen. These missed communications present a challenge for Christelle because she values parents being informed of how music therapy sessions uniquely "bring[s] [out] a different side of these babies."

Theme D: Time limitations. Christelle was the only participant to indicate that the size of the NICU, large number of patients, and schedule of her hours prevent her from providing

services for every referred infant as often as she would like. Her fixed work hours often prevent her from connecting with, supporting, and equipping families who come to visit the NICU after her shift ends.

Theme E: Personal health challenges. Christelle was the only participant to list maintaining physical and vocal health as a challenge she faced in her work. She explained, "If I'm sick, it's really difficult for me to work with that population." Vocal fatigue was also a challenge for her because protective parents or staff members occasionally refused her services if she was coughing or if her voice sounded tired. "It's challenging when I want to be present but, physically, I'm limited."

Theme F: Funding. Carol was the only participant to indicate that securing funding was a challenge she faced. Before her pilot project was started, she reported that "even though there was interest, there wasn't funding."

Category 7: Rewards of the job.

Theme A: Impact on infants. All participants reported feeling rewarded by observing the positive impact that music therapy had on the infants they worked with. Christelle indicated one reward of her job was "helping babies be more comfortable."

Theme B: Impact on families. All participants noted the benefit of witnessing the positive impact music therapy had on NICU families. Joan said, "I get feedback from the families saying they could really see the impact that the program had on their babies and on themselves and how they couldn't imagine their time in the hospital without music therapy." She explained, "it's wonderful to see the carry-over effect that the sessions are having." When graduate NICU families would return to visit the NICU staff during routine follow-up care, Joan indicated that she would hear feedback like: "You taught us this and we still do this at home and they love it and it's something so special for us." Christelle explained that one of the rewards of her job is "putting more positive moments in the family's days because there's never too many of them." She noted that she loves seeing families empowered by the tools she offers to them. Carol said she felt rewarded "seeing families feeling more confident and having interactions with their baby that they know are positive and having things that they can do with their baby when their baby is such high risk and needing such complex care." Personally witnessing "the reactions from the infants and the connection with the parents" was a definite reward of the job for Carol.

Theme C: Impact on staff. Christelle noted the reward of seeing music therapy have a positive impact on staff members. She enjoys "seeing the global impact" her service has on not only the infant and family, but also the entire system of care. She described feeling rewarded seeing staff members able to provide care in a "faster and more efficient way" because of the work she was doing. She described a scenario in which a nurse expressed relief that Christelle had come because an infant in the nurse's care had been awake and unstable for the last three hours. After one 15-minute music therapy session, the infant was asleep. Christelle said the nurse was so relieved because she had been so worried since the infant's alarms kept ringing and requiring constant care. "I could improve the baby's state and improve the job for my colleague who can then have more energy for the other babies that she's taking care of and then she'll be able to report to the parents."

Theme D: Professional recognition. Carol mentioned that her greatest challenges were also the greatest rewards because, even though it was an initial challenge for NICU staff to trust her and her work, "when staff see it [NICU music therapy] in action … they are incredibly amazed and really supportive."

Category 8: Evolution of NICU music therapy practices.

Theme A: Changes in environmental factors and scope of practice. Christelle was the only participant to report experiencing changes in NICU music therapy practices over her 13 years in the NICU. These changes relate environmental factors and scope of practice. With regards to environmental factors, when Christelle started practicing music therapy, she worked in a NICU with just under 30 beds in 3 open rooms. This environment meant that Christelle was "working with one baby but the whole room was involved in the session so we had to adapt to that. (...) It was a different way of working because there were many babies together with different needs." Contrastingly, the NICU site she worked in at the time of this research has individual single-family rooms so she no longer faces the same environmental challenges. Christelle also described how her scope of practice shifted after she received specialized training: "[I] started to develop more strategies to target the younger ones and to see other interventions that could be done in different settings than just a pure music therapy session for development and self-expression."

Category 9: Recommendations for advancing Canadian NICU music therapy practices.

Theme A: Accessible training for Canadian music therapists. Every participant recommended that music therapists who are interested in pursuing work in the NICU should receive specialized training. For example, Carol recommended "doing one or two of the trainings that are offered in the US for NICU music therapy." Joan expressed the same sentiment saying, "education is absolutely key." In addition, every participant recognized the need for more accessible and specialized NICU music therapy training opportunities in Canada. Christelle acknowledged, "we need to train our music therapists and not everybody can afford to go to the States." She recognized the uniqueness of Canadian practice saying, "we have our own ways too." Carol suggested, "having [Canadian] music therapists that are experienced enough in this area" to train others would be a benefit to the creation of Canadian NICU music therapy training programs. Joan proposed, "if the trainings were a little more accessible to us in Canada, I think more people would want to do it and be encouraged to do it."

Theme B: Creating a network. All participants highlighted the need for the creation of a network to connect Canadian NICU music therapists. Christelle saw the potential for, and benefit of, a network of Canadian NICU music therapists "to really build that community of therapists who focus with that clientele so that we can support each other and share resources and share our concerns, or worries, or ideas. (...) Anything to help us because it's such a specific field." She proposed that a network of this kind could also equip NICU music therapists "throughout the country, not just in the extremities [i.e., urban centres]" with support and strategies as new training techniques and research are developed. Joan explained that an informal network of pediatric music therapists exists in Canada in which individuals are connected through an emailing list. However, she said that she is only in touch with two other NICU music therapists and she was curious as to how many other music therapists were practicing in Canadian NICUs.

Theme C: Canadian research. Carol recommended "seeing Canadians doing research in NICU music therapy" as one of the ways in which NICU music therapy could be advanced in Canada. The other two participants did not mention research as one of their recommendations.

Theme E: Collaborative partnerships. Carol suggested that one way to move Canadian NICU music therapy forward is through international partnerships with relevant pre-existing training and research initiatives in the United States. She explained that these partnerships could help Canadians "because they are so experienced in doing that research and then, that would be a stepping stone in allowing Canadians to hopefully do their own research as well."

Theme F: Job creation for current and future NICU music therapists in Canada. All participants made recommendations for current and future NICU music therapists in Canada. Christelle advised music therapists who are interested in doing this kind of work to form strong partnerships with hospital foundations to allow for more flexibility and security in terms of program budget and continued funding: "get in touch with the [hospital's] foundation because it is not the best to be relying on donations." She explained that strong partnerships with hospital foundations allow music therapists to have more personal and professional flexibility. She added that when a hospital's administration and foundation see the benefits of music therapy, they are more likely to protect a music therapy program if the program is threatened due to necessary budget cuts. Christelle advised music therapists to find and connect with allied health professionals working in specific NICUs "to learn more about the NICU environment to see who could be your ally." She explained that Joanne Loewy, music therapist and founder of the RBL NICU music therapy training, calls these allies *champions*. Champions could be "doctors, they could be nurse practitioners, or any level of nurses," along with occupational therapists or physiotherapists. Carol said that one of her champions was the head administrator for the NICU. Joan recommended offering in-services for hospital staff members to show how music therapy in the NICU is evidence-based and supported by the research. In-services are especially valuable to offer to nursing staff "because they're the people you're going to be working with" and, "if they're not on board, they're not going to refer you to anybody… if they don't see that it's helpful."

Christelle recommended finding a NICU without music therapy that has "a level of care that necessitates, or sets the context for music therapy," specifically a NICU with a level of care that serves long-term patients. "If it's just an intermediary care, they [infants] won't stay long enough to justify having somebody paid for sessions that will be one session." In her opinion, one-off sessions have their benefits but they do not necessarily justify a hospital paying for a music therapy position. Christelle also recommended finding a NICU that is not too small (i.e., serves a larger number of patients) because one would encounter similar resistance with regards to budget justification.

Carol recommended creating a pilot project proposal with short-term, small-scale parameters. For example, her pilot project included 6 months of preparation consisting of many

presentations and strategic meetings followed by 6 months of hands-on NICU music therapy work in a small area of the NICU.

Chapter 5. Discussion

In the present chapter, I make links between the findings presented in Chapter 4 and related literature in order to explain new understandings and/or insights that emerged in relation to the research questions. I then present limitations of the current study, followed by implications of this research for the music therapy profession in Canada, Canadian NICU music therapy practices and continuing education, and Canadian hospitals. The chapter concludes with recommendations for future research.

Links Between Findings and Literature

This section contextualises the findings within relevant literature and is organized around the following main topics: training; interventions, protocols, and tools; supporting fathers; and self-reporting by NICU music therapists.

Training. Study participants recommended that Canadian music therapists who want to work in the NICU complete specialized training. Participants noted that such training would ensure that NICU music therapists adhere to best practice standards and would ultimately prevent harm to the fragile NICU infants. This aligns with the need and rationale for specialized NICU training outlined in the literature (Haslbeck & Costes, 2011; Standley, 2014; Trainor, 2015). The current study's participants also agreed upon the need for the NICU music therapy training to be more accessible in Canada so that more Canadian music therapists can be properly equipped to work with this population. Findings suggested that both trainings (RBL and NICU-MT) are applicable to Canadian NICU contexts and can be adapted to various NICU environments and personal music therapy approaches. Similarly, Haslbeck and Costes (2011) conducted research on two American training programs in order to develop NICU music therapy training programs in Europe, indicating that they also perceived a need for locally accessible NICU music therapy training.

Interventions, protocols, and tools. The interventions, protocols, and tools that participants employed for referrals, assessment, and evaluation generally aligned with those described in the literature review (Gooding, 2010; Haslbeck & Costes, 2011; Standley et al., 2010), with some adaptations being made by two participants (Christelle & Joan). Participants did not indicate why they made these adaptations. Participants did not regularly use interventions that were not part of the RBL and NICU-MT trainings. All participants used either original or

adapted interventions, forms, and protocols that they learned from their NICU-MT training, with one participant (Christelle) blending the NICU-MT interventions, forms, and protocols with her knowledge of these within the RBL method. All participants used the song of kin intervention, though only one participant had received specialized training in this intervention.

Supporting fathers. One participant (Christelle) uses music therapy to help fathers of infants in the NICU "feel more at ease because if they do feel more at ease, then they'll feel better about visiting and they'll know what to do." She supports fathers by educating them about the medical equipment in their child's room and by encouraging them to engage in music therapy sessions. Christelle's practice can be seen as aiming to repair the elements that Caine (2016) noted were disruptive to family bonding in the NICU, including: the hospital environment, the infant's fragile state, and ineffective communication between medical staff and parents.

Self-reporting by NICU music therapists. A recent study by Gooding and Trainor (2018) explored American music therapists' experiences with parents of children in the NICU by surveying 54 Board-Certified Music Therapists who were or had been practicing in the NICU. The findings of the present research have both similarities and differences with Gooding and Trainor's findings.

Similarities. Both this research and Gooding and Trainor's (2018) study found that music therapists working in NICUs reported challenges of connecting with parents due to various factors including scheduling and work hours. Additionally, both this research and Gooding and Trainor's survey found that music therapists reported the medical staff's lack of understanding about the benefits of music therapy to be a barrier.

Differences. Participants in the Gooding and Trainor (2018) study reported that neonatal abstinence syndrome was one of the most common conditions or issues facing the infants they worked with. Conversely, only one participant in this study (Joan) reported working with infants with neonatal abstinence syndrome. Reports of the NICU music therapy referral process also differed between the two studies. While Gooding and Trainor found that 71.15% of participants reported receiving referrals to work with parents (p. 3), none of the participants in the current study reported receiving such referrals.

Limitations

As a novice researcher, my limited experience conducting qualitative interviews influenced the quantity and quality of data collected. Due to the time limitations of completing a

master's thesis, the results reflect the perspectives of only three Canadian NICU music therapists, all of whom are women. A larger number of participants would have given a richer understanding of the perspectives and practices of music therapists working in Canadian NICUs, and may have led to greater transferability. The varied methods of data collection (i.e., telephone, Facetime, and in person) may have resulted in varying comfort levels among participants and subsequently affected participants' responses. My own experiences with NICU training, practicum, and program development may also have influenced the data collection and analysis processes.

Implications

This research has implications for the following areas: the music therapy profession in Canada, Canadian NICU music therapy professional networking, music therapy continuing education, and Canadian hospitals.

Implications for the music therapy profession in Canada. The main implication for the Canadian music therapy profession is the recommendation to create national professional guidelines for NICU music therapy, thereby establishing NICU music therapy as a recognized speciality in the Canadian landscape. All participants noted that NICU staff had a general lack of understanding of what music therapy is and how it can be used in NICUs. One participant (Carol) indicated the need for music therapists working in NICUs to be professionally recognized. Cumulatively, these results indicate that national guidelines for NICU music therapy practice could support Canadian music therapists in promoting the highest level of care in the areas of referral, assessment, evaluation, and treatment. Guidelines that have been suggested for other countries (Henning, 2012; Haslbeck & Costes, 2011) could inform Canadian music therapy practitioners in that they discuss policies and action steps to facilitate nation-wide NICU music therapy guidelines (Standley, 2014; Haslbeck & Costes, 2011). As one participant (Carol) suggested, music therapists working in NICUs could also partner with professional associations like the Canadian Association of Music Therapists (CAMT) to ensure that the specialized NICU music therapy guidelines align with existing professional guidelines and best practice models, and are adapted for Canada's NICU and health-care contexts.

NICU music therapy guidelines could also be used to equip hospitals with a list of expectations and job descriptions for current or future music therapists working in their NICUs. This would also help to enhance the hospital staff's understanding about the use of music therapy

in the NICU context. Furthermore, since all participants discussed the importance of providing in-services to educate staff on music therapy in the NICU, including elements of education for staff members on how to use music effectively in the guidelines may be valuable. In my experience, well-intentioned medical staff and volunteers may offer music at decibel levels and/or durations that the literature indicates are counter-productive to a premature infant's positive development and which may negatively impact NICU infants (Nöcker-Ribaupierre, 2013; Cassidy, 2009). Specially trained NICU music therapists and best music therapy practice guidelines could therefore reduce the potential for harm to infants and increase music therapy "acceptance by the medical profession, allied therapies, and developmental specialties" (Trainor, 2015, p. 51).

Implications for Canadian NICU music therapy professional networking. The results indicated that Canadian NICU music therapists are interested in connecting with each other to exchange resources, information, and support. Creating a Canadian NICU music therapy network would be especially useful for music therapists working in NICUs where there are no other music therapists and/or for music therapists who are unable to attend team meetings. A website with a secure members' area could facilitate connecting, equipping, resourcing, and supporting current and future Canadian NICU music therapists. As discussed in Chapter 1, I am a member of the *West Coast NICU Music Therapy Collective,* a group working toward several NICU music therapy initiatives, including the development of a Canadian NICU music therapy network. The results of this research affirm the value and need for the work being done by the West Coast NICU Music Therapy Collective.

Implications for music therapy continuing education. Findings of this study indicated that these Canadian NICU music therapists desired more opportunities for affordable and local NICU music therapy training. The RBL and NICU-MT training programs are primarily offered in the United States and can be cost prohibitive for Canadians who wish to pursue certification in either method. Level I of the RBL training was last offered in Canada in Toronto in May of 2015 (Louis Armstrong Centre for Music & Medicine, 2019c). At the time of this research, Levels II and III of the RBL training had not been offered in Canada. One participant (Christelle) reported being the only qualified trainer in the RBL method in Canada. Though she has not yet trained anyone in this method, there is potential for her to do so. At the time of this research, the practicum component of the NICU-MT training has never been offered in Canada. The lecture

component of the NICU-MT training was offered once in Canada in Vancouver in November of 2016 when the West Coast NICU Music Therapy Collective invited and hosted Dr. Standley to facilitate this training. In total, 19 Canadian music therapists, myself included, registered for the lecture, some of whom traveled from out-of-province to take the training. Due to the apparent interest in receiving specialized training in NICU music therapy, provincial and national music therapy associations could create learning opportunities for Canadian music therapists to receive NICU music therapy training locally, such as at provincial and national workshops and conferences.

It could also be helpful for national and provincial associations to offer continuing education bursaries and/or scholarships for Canadian music therapists interested in pursuing specialized NICU training abroad. Mentorship opportunities could additionally propel NICU music therapy in Canada forward as current music therapists transfer their knowledge to music therapists who are interested in this field. It would also be useful for more music therapists working in NICUs to offer CAMT internship opportunities or practicums for Canadian music therapy students – I found my practicum experience in NICU music therapy to be invaluable.

Implications for Canadian hospitals. The results of this study reinforce that specialized training for music therapists working in NICUs is needed. All participants recognized the benefits of their specialized training, which both equipped and enabled two participants (Christelle and Carol) to offer evidence-based interventions and protocols with a wider scope of practice. The results of this study may encourage Canadian hospitals to employ music therapists with NICU training to work in the NICU. Additionally, more hospitals could consider paying for NICU music therapy training for qualified music therapists working in the NICU, like some hospitals discussed in this paper have done. The cost of such trainings could be factored into the budgets of pilot project or continuing NICU music therapy positions. Hospitals could also consider bringing in NICU music therapy educators to train music therapists currently employed in other hospital units as well as those who are employed in NICUs. Finally, it is recommended that hospital administrators intending to start a NICU music therapy program consult and align with the future NICU music therapy guidelines that I recommended earlier in this chapter.

Recommendations for Future Research

This research captured the current practices and perspectives of three music therapists working in Canadian NICUs and indicates opportunities for further research in this area. More

research is needed to explore the perspectives of music therapists who work in the NICU, particularly as the profession further grows and develops in Canada. Participants suggested that Canadian researchers could benefit from partnering with international research projects as a way of gaining broader perspectives in this relatively new and unexplored area of Canadian research and practice. Research on the effectiveness of music therapy programs and interventions (e.g., PAL, song of kin, & MNE) in Canadian NICU contexts is also needed. Since Canadian health care services/systems vary amongst provinces and territories, it would also be valuable to examine the differences in NICU music therapy practices and perspectives amongst various regions of Canada.

While the Pacifier Activated Lullaby System (PAL) has been identified as an evidence-based intervention tool that positively impacts the hospital, infants, and families (Standley et al., 2010; Palazzi, Nunes, & Piccinini, 2018), it is interesting to note that the participants did not report it as one of the most common interventions that they used. Future research could examine why this intervention is not more commonly used and/or how it might be effectively integrated into Canadian NICU contexts.

This research included one participant (Carol) who worked in a NICU as part of a pilot project, while the other two participants were employed as staff in continuing positions. Noticeable differences in practices and perspectives were found between the music therapist who worked in a pilot project and the two who had established positions. These included: referral procedures, scope of practice, security of funding, and acceptance by other professionals. Further research could explore differences among NICU music therapists on contract versus those in secure positions and how these employment situations may impact issues such as job satisfaction and treatment outcomes.

Finally, music therapists interested in piloting NICU music therapy programs may consult previously published guidelines for initiating NICU music therapy programs (Hanson-Abromeit, 2004, 2012, Standley & Walworth, 2010), though these studies do not address Canada's unique health care context or funding opportunities. Research in the domain of job creation for NICU music therapy program initiatives in Canada would therefore also be useful.

Closing Remarks

As the first study to explore the perspectives of Canadian NICU music therapists, I believe that this research offers valuable insight into an emerging specialized area of Canadian

music therapy practice. The research process, including the passion that the research participants shared for their work, has further motivated me to support the development of NICU music therapy in Canada. It is my hope that this research contributes to an understanding of how music therapy can help tiny humans see giant results in Canada.

References

Arnon, S., Shapsha, A., Forman, L., Regev, R., Bauer, S., & Litmanovitz, L. (2006). Live music is beneficial to preterm infants in the neonatal intensive care unit environment. *Birth-Issues in Perinatal Care, 33*(2), 131-136. https://doi.org/10.1111/j.0730-7659.2006.00090.x

Bieleninik, L., Ghetti, C., & Gold, C. (2016). Music therapy for preterm infants and their parents: A meta-analysis. *Pediatrics*, *138*(3). https://doi.org/10.1542/peds.2016-0971

Caine, J. (1991). The effects of music on the selected stress behaviors, weight, caloric and formula intake, and length of hospital stay on premature and low birth weight neonates in a newborn intensive care unit. *Journal of Music Therapy, 28*(4), 180-192. Retrieved from http://0search.ebscohost.com.mercury.concordia.ca/login.aspx?direct=true&db=eue&AN=61019259&site=eds-live

Caine, K. (2016). *A conceptual framework for a music-based bonding intervention for fathers with premature infants in the NICU* (Master's thesis). Retrieved from ProQuest Dissertations and Thesis database. (UMI No. 10139239).

Canadian Association of Music Therapists. (2019a). About music therapy. Retrieved From https://www.musictherapy.ca/about-camt-music-therapy/about-music-therapy/

Canadian Association of Music Therapists. (2019b). Canadian association of music therapists homepage. Retrieved from http://www.musictherapy.ca/

Canadian Counselling and Psychotherapy Association. (n.d.). Retrieved from ccpa-accp.ca/profession/

Canadian Premature Babies Foundation – Foundation pour Bébés Prématurés Canadiens. (2014). *Premature birth in Canada: An environmental scan.* Retrieved from http://cpbf-fbpc.org/wp-content/uploads/2017/05/2014-07-23-CPBF-Premature-Birth-environmental-scan_Final.pdf

Cassidy, J. W. (2009). The effect of decibel level of music stimuli and gender on head circumference and physiological responses of premature infants in the NICU. *Journal of Music Therapy, 46*(3), 180-190. Retrieved from http://0-

search.ebscohost.com.mercury.concordia.ca/login.aspx?direct=true&db=rih&AN=A635287&site=eds-live

Chapman, J. S. (1978). The relationship between auditory stimulation and gross motor activity of short gestation infants. *Research in Nursing and Health, 1*(1), 29-36.

Cheng, M. L. Tseng, Y. H., Hodges, E., & Chou, F. H. (2016). Lived experiences of novice male nurses in Taiwan. *Journal of Transcultural Nursing, 29*(1), 46-53. https://doi.org/10.1177/1043659616676318

Chorna, O. D., Slaughter, J. C., Wang, L., Stark, A. R., & Maitre, N. L. (2014). A pacifier-activated music player with mother's voice improves oral feeding in preterm infants. *Pediatrics, 133*(3), 462-468. https://doi.org/10.1542/peds.2013-2547.

Cleary, B. J., Donnelly, J., Strawbridge, J., Gallagher, P. J., Fahey, T., Clarke, M., & Murphy, D. J. (2010). Methadone dose and neonatal abstinence syndrome: Systematic review and meta-analysis. *Addiction, 105,* 2071-2084. https://doi.org/10.111/j.1360-0443.2010.03120.x

Clements-Cortès, A. (2012). The pacifier activated lullaby device. *Canadian Music Educator / Musicien Educateur au Canada, 54*(2), 55-57. Retrieved from http://0-search.ebscohost.com.mercury.concordia.ca/login.aspx?direct=true&db=eue&AN=85112641&site=eds-live

Clements-Cortès, A. (2015). Music therapy with premature infants in the NICU. *Canadian Music Educator / Musicien Educateur au Canada, 56*(3), 31-32. Retrieved from http://0search.ebscohost.com.mercury.concordia.ca/login.aspx?direct=true&db=eue&AN=109155615&site=eds-live

Cohen, N. S. (2016). Principles of objectivist research. In B. L. Wheeler & K. Murphy (Eds.), *Music therapy research* (3rd ed.) [Electronic version]. Retrieved from http://web.a.ebscohost.com.libezproxy.concordia.ca/ehost/ebookviewer/ebook/bmxlYmtfXzEyODk1OTdfX0FO0?sid=63ac9c37-7f6e-481a-a4ce-bee82612c92d@sdc-v-sessmgr01&vid=0&format=EK&rid=1

Corbin, J., & Strauss, A. (2014). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). Thousand Oaks, CA: Sage.

Dudley, A. (2017). *Exploring Canadian music therapy graduates' experiences of transitioning into professional practice* (Master's thesis). Concordia University, Montréal, QC. Retrieved from https://spectrum.library.concordia.ca/982982/1/Dudley_MA_F2017.pdf

Edwards, J. (2011). The use of music therapy to promote attachment between parents and infants. *The Arts in Psychotherapy, 38*(3),190-195. https://doi.org/10.1016/j.aip.2011.05.002

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107-115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Ettenberger, M., & Ardila, Y. M. B. (2018). Music therapy song writing with mothers of preterm babies in neonatal intensive care unit (NICU) – A mixed-methods pilot study. *The Arts in Psychotherapy, 58*, 42-52. https://doi.org/10.1016/j.aip.2018.03.001

Florida State University. (2019). National institute for infant & child medical music therapy. Retrieved from https://www.music.fsu.edu/NICU-MT

Gooding, L. F. (2010). Using music therapy protocols in the treatment of premature infants: An introduction to current practices. *The Arts in Psychotherapy, 37*, 211-214. https://doi.org/10.1016/j.aip.2010.04.003

Gooding, L. F., & Trainor, B. (2018). Working with parents in the neonatal intensive care unit: An analysis of music therapy practices in the United States of America. *The Arts in Psychotherapy, 59*, 1-6. https://doi.org/10.1016/j.aip.2017.12.005

Government of Canada (2018). *Canada's health care system.* Retrieved from https://www.canada.ca/en/health-canada/services/health-care-system/reports-publications/health-care-system/canada.html

Graven, S. N., & Browne, J. V. (2008). Auditory development in the fetus and infant. *Newborn and Infant Nursing Reviews*, *8*(4).

Hanson-Abromeit, D. (2004): A resource guide for establishing a neonatal music therapy program. In M. Nöcker-Ribaupierre (Ed.), *Music therapy for premature and newborn infants* (pp. 177-190). Gilsum, NH: Barcelona.

Hanson-Abromeit, D. (2012). Aufbau eines Musiktherapie-Programms für neugeborene Kinder [A resource guide for establishing a neonatal music therapy program]. In M. Nöcker-Ribaupierre (Ed.), *Hören—Brücke ins Leben. Musiktherapie mit früh- und neugeborenen Kindern* (pp. 209-218). 2.akt.Aufl. Wiesbaden: Reichert.

Haslbeck, F. B. (2012). Music therapy for premature infants and their parents: An integrative review. *Nordic Journal of Music Therapy, 21*(3), 203-226. https://doi.org/10.1080/08098131.2011.648653

Haslbeck, F. B., & Bassler, D. (2018). Music from the very beginning – A neuroscience-based framework for music as therapy for preterm infants and their parents. *Frontiers in Behavioral Neuroscience, 12*(112). https://doi.org/10.3389/fnbeh. 2018.00112

Haslbeck, F., & Costes, T. (2011). Advanced training in music therapy with premature infants: Impressions from the United States and a starting point for Europe. *British Journal of Music Therapy, 25*(2). 19-31. https://doi.org/10.1177/ 135945751102500203

Henning, I. (2012). Music therapy with premature infants: Insights and recommendations from the current literature and a German pilot project. *Canadian Journal of Music Therapy, 18*(1), 26-44. Retrieved from http://0-search.ebscohost.com.murcury/. concordia/ca/login.aspx?direct=true&db=a9h&AN =76385632&site=eds-live

Hiller, J. (2016). Epistemological foundations of objectivist and interpretivist research. In B. L. Wheeler & K. Murphy (Eds.), *Music therapy research* (3rd ed.) [Electronic version] (pp. 362-418). Retrieved from http://web.a.ebscohost.com.libezproxy.concordia.ca/id=63ac9c37-¶ 7f6e-481a-a4cxlYmtfXzEyODk1OTdfX0FO0?sid=63ac9c37-7f6e-481a-a4ce-bee82612c92d@sdc-v-sessmgr01&vid=0&format=EK&rid=1

Jayamala, A. K., Lakshmanagowda, P. B., Pradeep, G. C.M., & Goturu, J. (2015). Impact of music therapy on breast milk secretion in mothers of premature newborns. *Journal of Clinical and Diagnostic Research*, *9*(4).

Lai, H. L., Chen, C. J., Peng, T. C., Chang, F. M., Hsieh, M. L., Huang, H. Y., & Chang, S. C. (2006). Randomized controlled trial of music during kangaroo care on maternal state anxiety and preterm infants' responses. *International Journal of*

Nursing Studies, 43(2), 139-146. https://doi.org/10.1016/j.ijnurstu.2005.04.008

Lavallée, A., De Clifford-Faugère, G., Garcia, C., Fernandez Oviedo, A. N., Héon, M., & Aita, M., (2019). Part 1: Narrative overview of developmental care interventions for the preterm newborn. *Journal of Neonatal Nursing, 25*(1), 3-8. https://doi.org/10.1016/j.jnn.2019.03.008

Loewy, J. (2015). NICU music therapy: Song of kin as critical lullaby in research and practice. *Annals of the New York Academy of Sciences, 1337*(1), 178–185. https://doi.org/10.1111/nyas.12648

Loewy, J., Stewart, K., Dassler, A. M., Tesley, A., & Homel, P. (2013). The effects of music therapy on vital signs, feeding, and sleep in premature infants. *Pediatrics, 131*(5).

Louis Armstrong Centre for Music & Medicine. (2019a). *Grandparents/Training roster.* Retrieved from http://nicumusictherapy.com/Nicumusictherapy/Grandparents_Training_Roster.html

Louis Armstrong Centre for Music & Medicine. (2019b). *About us.* Retrieved from http://nicumusictherapy.com/Nicumusictherapy/About_us.html

Louis Armstrong Centre for Music & Medicine. (2019c). *Upcoming trainings.* Retrieved from http://nicumusictherapy.com/Nicumusictherapy/Upcoming_trainings.html

Malloch, S., Shoemark, H., Črnčec, R., Newnham, C., Paul, C., Prior, M., Coward, S., & Burnham, D. (2012). Music therapy with hospitalized infants: The art and science of communicative musicality. *Infant Mental Health Journal, 33*(4), 386-399. https://doi.org/10.1002/imhj.21346

Maryring, P. (1983). *Qualitative Inhaltsanalyse* [Qualitative content analysis]. Weinheim, Germany: Beltz.

McMahon, E., Wintermark, P., & Lahav, A. (2012). Auditory brain development in premature infants: The importance of early experience. *Annals of the New York Academy of Sciences, 1252*(1), 17-24. https://doi.org/10.1111/j.1749-6632.2012.06445.x

McLean, E., McFerran, K. S., Thompson, G. A. (2019). Parents' musical engagement with their baby in the neonatal unit to support emerging parental identity: A grounded theory study. *Journal of Neonatal Nursing, 25*(2), 78-85. https://0-doi-org.mercury.concordia.ca/10.1016/j.jnn.2018.09.005

McMullen, N. J., Dulski, L. A., Blobaum, P. (2014). Evidence-based interventions for neonatal abstinence syndrome. *Pediatric Nursing, 40*(4), 165-203. Retrieved from http://0-search.ebscohost.com.mercury.concordia.ca/login. aspx?direct= true&db=eue&AN=101121081&site=eds-live

Mizutani, N. (2016). *Parents' experiences of music therapy in the neonatal intensive care unit (NICU)* (Master's thesis). Molloy College, Rockville Centre, NY. Retrieved from https://pdfs.semanticscholar.org/3277/df082e8663dfdbd1d99d80fe8067d c1f5cbf.pdf

Natarajan, M., Randel, P., Cameron, D., & Frager, G. (2008, October). *The effect of music therapy on neonatal intensive care (NICU) nurses*. Poster session presented at the 34th Annual Canadian Association of Music Therapists Conference, Quebec City, QC. Retrieved from https://www.cdha.nshealth.ca/system/files/sites /101/documents/effect-music-therapy-nicu-nurses_0.pdf.

Neuman, W. L. (2006). Analyzing qualitative data. In W. L. Neuman (Ed.), *Social research methods: Qualitative and quantitative approaches* (6th ed., pp. 457-489). Needham Heights, MA: Allyn & Bacon.

Neuman, W. L. (2010). *Social research methods: Qualitative and quantitative approaches* (7th ed.). London, England: Pearson.

Nöcker-Ribaupierre, M. (2013). Premature infants. In J. Bradt (Ed.), *Guidelines for music therapy in pediatric care* (pp. 66-115). Gilsum, NH: Barcelona.

Palazzi, A., Nunes, C. C., Piccinini, C. A. (2018). Music therapy and musical stimulation in the context of prematurity: A narrative literature review from 2010-2015, *Journal of Clinical Nursing, 27*(1-2), E1-E20. Accessed July 22, 2019. doi:10.111/jocn.13893.

Preterm Birth. (2018, February 18). Retrieved July 22, 2019, from https://www.who.int/news-room/fact-sheets/detail/preterm-birth

Public Health Agency of Canada. (2017). *Perinatal health indicators for Canada 2017: A report from the Canadian perinatal surveillance system.* Retrieved from: http://publications.gc.ca/collections/collection_2018/aspc-phac/HP7-1-2017-eng.pdf

Purvis, T. C. (2010). Interprofessional education in mental health: Implications for music therapy. *Canadian Journal of Music Therapy, 16*(1), 95-116. Retrieved from http://0-search.ebscohost.com.mercury.concordia.ca/login.aspx?direct=true&db=a9h&AN=51693327&site=eds-live

Rodríguez, J. J., & Smith, V. C. (2018). Prenatal opioid and alcohol exposure: Understanding neonatal abstinence syndrome and fetal alcohol spectrum disorders to safeguard maternal and child outcomes. *Zero to Three, 38*(5), 23-28. Retrieved from http://0-search.ebscohost.com.mercury.concordia.ca/login.aspx?direct=true&db=eue&AN=131428287&site=eds-live.

Schwartz, F. J., Ritchie, R., Sacks, L. L., & Phillips, C. E. (1999). Music, stress reduction, and medical cost savings in the neonatal intensive care unit. In R. R. Pratt & D. E. Grocke (Eds.), *MusicMedicine vol. 3: MusicMedicine and music therapy: Expanding horizons* (pp. 120-129). Victoria, Australia: University of Melbourne.

Shah, P. S., McDonald, S. D., Barrett, J., Synnes, A., Robson, K., Foster, J., … Canadian Preterm Birth Network Investigators 2018. The Canadian Preterm Birth Network: A study protocol for improving outcomes for preterm infants and their families. *CMAJ open, 6*(1), E44-E49. doi:10.9778/cmajo.20170128

Shaw, R. J., Bernard, R. S., Storfer-Isser, A., Rhine, W., & Horwitz, S. M. (2013). Parental coping in the neonatal intensive care unit. *Journal of Clinical Psychology in Medical Settings, 20*(2), 135-142. doi:10.1007/s10880-012-9328-x

Standley, J. (1998). The effect of music and multimodal stimulation on responses of premature infants in neonatal intensive care. *Pediatric Nursing, 24*, 532-538.

Standley, J. M. (2002). A meta-analysis of the efficacy of music therapy for premature infants. *Journal of Pediatric Nursing, 17*(2), 107-113. https://doi.org.mercury.concordia.ca/10.1053/jpdn.2002.124128

Standley, J. (2012a). A discussion of evidence-based music therapy to facilitate feeding skills of premature infants: The power of contingent music. *The Arts in Psychotherapy, 39*(5), 379-382. https://doi.org/10.1016/j.aip.2012.06.009

Standley, J. (2012b). Music therapy research in the NICU: An updated meta-analysis. *Neonatal Network, 31*(5), 311-316.

Standley, J. (2014). Premature infants: Perspectives on NICU-MT practice. *Voices: A World Forum for Music Therapy, 14*(2). https://doi.org/10.15845/

Standley, J. (2016, November). *NICU-MT*. PowerPoint slides presented at the West Coast NICU Music Therapy Collaborative NICU-MT Training, Vancouver, BC.

Standley, J. M., Cassidy, J., Grant, R., Cevasco, A., Szuch, C., Nguyen, J., … Adams, K. (2010). The effect of music reinforcement for non-nutritive sucking on nipple feeding of premature infants. *Pediatric Nursing, 35*(3), 138-145. Retrieved from http://0-search.ebscohost.com.mercury.concordia.ca/login.aspx?direct=true&db+a9h&AN=51841370&site=eds-live

Standley, J., & Walworth, D. D. (2005). Cost/benefit analysis of the total program. In J. Standley (Ed.), *Medical music therapy* (33-40). Silver Spring, MD: American Music Therapy Association.

Standley, J., & Walworth, D. (2010). *Music therapy with premature infants: Research and developmental interventions* (2nd ed.). Silver Spring, MD: American Music Therapy Association.

Sublett, J. (2013). Neonatal abstinence syndrome: Therapeutic interventions. *MCN, The American Journal of Maternal/Child Nursing, 38*(2), 102-107. Retrieved from http://nursing.ceconnection.com/ovidfiles/00005721-201303000-00008.pd

Taheri, L., Jahromi, M. K., Abbasi, M., & Hojat, M. (2016). Effect of recorded male lullaby on physiologic response of neonates in NICU. *Applied Nursing Research, 33*, 127-130. https://doi.org/10.1016/j.apnr.2016.11.003

Teckenberg-Jansson, P., Huotilainen, M., Pölkki, T., Lipsanen, J. & Järvenpää, A-L. (2011). Rapid effects of neonatal music therapy combined with kangaroo care on prematurely-born infants. *Nordic Journal of Music Therapy, 20*(1), 22-42. doi:10.1080/08098131003768123

Thomas, D. R. (2017). Feedback from research participants: Are member checks useful in qualitative research? *Qualitative Research in Psychology, 14*(1), 23-41. https://doi.org/10.1080/14780887.2016.1219435

Trainor, B. (2015). *Addressing parent needs in the neonatal intensive care unit: A survey of music therapists* (Master's thesis). Retrieved from ProQuest Dissertations and Thesis database. (UMI No. 1590292).

Viasmoradi, M., Jones, J., Turunen, H., Snelgrove, S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal of Nursing Education and Practice, 6*(5), 100-110. doi:10.5430/jnep.v6n5p100

Walworth, D., Standley, J. M., Robertson, A., Smith, A., Swedberg, O., & Peyton, J.J. (2012). Effects of neurodevelopmental stimulation on premature infants in neonatal intensive care: Randomized controlled trial. *Journal of Neonatal Nursing*, *18*(6), 210-216.

Wheeler, B. L., & Kenny, C. (2005). Principles of qualitative research. In B. L. Wheeler (Ed.), *Music therapy research* (2nd ed., pp. 59-71). Gilsum, NH: Barcelona.

Whipple, J. (2000). The effect of parent training in music and multimodal stimulation on parent-neonate interactions in the neonatal intensive care unit. *Journal of Music Therapy, 37*(4), 250-268. Retrieved from: https://0-doiorg.mercury.concordia.ca/10.1093/jmt/37.4.250

Appendix A

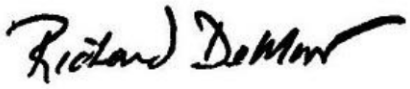
Ethics Approval

CERTIFICATION OF ETHICAL ACCEPTABILITY
FOR RESEARCH INVOLVING HUMAN SUBJECTS

Name of Applicant:	Laura Hastings
Department:	Faculty of Fine Arts / Creative Arts Therapies
Agency:	N/A
Title of Project:	Practices and Perspectives of Music Therapists Working With Infants in Canada
Certification Number:	30011374

Valid From: May 23, 2019 To: May 22, 2020

The members of the University Human Research Ethics Committee have examined the application for a grant to support the above-named project, and consider the experimental procedures, as outlined by the applicant, to be acceptable on ethical grounds for research involving human subjects.



Dr. Richard DeMont, Chair, University Human Research Ethics Committee

Appendix B

Participant Recruitment Email

Practices and Perspectives of Music Therapists Working With Infants in Canadian Neonatal Intensive Care Units

Hello, my name is Laura Hastings. I am a Master's student in the MA Creative Arts Therapies (Music Therapy option) program at Concordia University. My Concordia faculty thesis supervisor is Laurel Young, PhD., MTA. I am seeking music therapists who work in Canadian Neonatal Intensive Care Units (NICUs) to participate in one 30-minute interview (by phone, videoconference, or in person) about their practices and perspectives on working in Canadian NICUs. The aim of this study is to understand how this specialized practice is currently being realized within our Canadian healthcare landscape and how it might evolve. This study has received ethics approval from Concordia University's Human Research Ethics Committee (protocol #3011374).

A foreseeable benefit of participating in this research is gaining a sense of satisfaction from contributing to the development of specific music therapy practice in NICUs, which will in turn benefit the field of music therapy and potentially the Canadian medical community with more knowledge about how music therapy can support and enhance patient care in the NICU. Potential risks or harms for this research are minimal, with an inconvenience of time spent for the interview, and possible use of Internet conferencing applications (such as FaceTime or Skype) as the only known factors. There is a risk that participants may be identifiable given the specific nature of the population and the limited amount of hospitals in Canada who have music therapy services provided in their NICUs. Thus, participants will be given the opportunity to decide how much of their personal identifying information is included in the findings, and how much is altered.

Due to the limited scope of this project, only English-speaking participants will be included in the study. If you are interested, please contact me directly at laurahastingsmusic@gmail.com. Please feel free to contact me, or my research supervisor, with any further questions.

Sincerely,

Researcher:
Laura Hastings, MTA
Department of Creative Arts Therapies
Concordia University
1395 Blvd. Rene Levesque Ouest
Montreal, QC H3G 1M8
Email: laurahastingsmusic@gmail.com
Phone: 514-891-3978

Faculty Research Supervisor:
Laurel Young, P.H.D., MTA
Department of Creative Arts Therapies
Concordia University
1395 Blvd. Rene Levesque Ouest
Montreal, QC, H3G 1M8
Email: laurel.young@concordia.ca
Phone: 514-848-2424 ext 4682

If you have any questions regarding your rights as a research participant, you may contact Karen Gregg, Research Ethics Coordinator: Karen.Gregg@concordia.ca 848-2424 ext 7481

Appendix C

Information and Consent form

INFORMATION AND CONSENT TO PARTICIPATE IN A RESEARCH STUDY (protocol # 30011374)

Study Title: Practices and Perspectives of Music Therapists Working With Infants in Canadian Neonatal Intensive Care Units (NICUs)
Researcher: Laura Hastings, MTA, Master's Student, Creative Arts Therapies (Music Therapy Thesis Option) Concordia University
Researcher's Contact Information: laurahastingsmusic@gmail.com (514) 891-3978
Faculty Supervisor: Dr. Laurel Young, MTA (Associate Professor of Music Therapy)
Faculty Supervisor's Contact Information: laurel.young@concordia.ca(514) 848-2424 ext 4683

You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please ask the researcher.

A. PURPOSE

The purpose of the research is to investigate the current practices and perspectives of certified music therapists' (MTA) who work as Neonatal Intensive Care Unit (NICU) music therapists in Canadian healthcare contexts. This qualitative study will explore this topic by interviewing three music therapists in Canada who have worked in a Canadian NICU within the past five years and who have completed specialized training in either the Loewy and/or Standley NICU music therapy models. This research hopes to not only serve as a springboard for the development of more NICU music therapy programs in Canada but also to promote more NICU music therapy research in Canadian healthcare contexts.

B. PROCEDURES

If you express interest in participating, the researcher will contact you to provide a written informed consent form for your review and to arrange a mutually convenient interview time (provided informed consent has been granted) via videoconferencing, telephone, or in person. The interview is expected to last no longer than 30 minutes. Please note that the interview will be audio recorded, transcribed, and analyzed using a qualitative content analysis methodology.. The audio recordings will be used solely for the purpose of analysis and there will be no public presentation or publications using the audio recordings themselves in any way.

You will receive a sample interview question template in advance of the interview, to allow time to reflect on the topic and prepare your answers. As the researcher will use a semi-structured qualitative interview format, other questions relevant to the research topic may emerge during the interview. You may also ask questions, refuse to answer particular questions, and express any concerns you may have.

Once your interview has been completed, the researcher will transcribe the interview and send it to you via email for review. You will have 10 business days to return the transcript with any revisions. These revisions will be incorporated into the transcript and included in the analysis.

C. RISKS AND BENEFITS

A foreseeable benefit of participating in this research is gaining a sense of satisfaction by potentially contributing to the development of music therapy practice in Canadian NICUs. This could benefit the field of music therapy, the Canadian healthcare community, and most importantly, enhance patient and family care in the NICU.

Potential risks of this research are minimal. There is a small inconvenience of time spent for the interview and in reviewing your interview transcript.

D. CONFIDENTIALITY

Each participant will have the choice of whether or not they would like to have their identity revealed within the context of this study. There is potential risk that participants who choose to not have their identity revealed may be still be identifiable given the limited number of music therapists in Canada provide service in NICUs. To address this risk, the researcher will make every effort possible to anonymize the information (i.e., remove all identifiers). Although direct quotes may be used to support the themes that emerge in the data analysis, they will contain no identifying information. It is important to note that participants will take part in this research as individual professionals and not as representatives of their workplaces; no identifying information related to their workplaces will be included in this study.

The researcher will not allow anyone other than her faculty supervisor to have access to the raw interview data. The researcher will only use this information for the purposes of the research described in this form. The researcher will protect the data by:

1) Using two digital recorders to audio-record interview data on a password-protected SD card.
2) Transferring interview data within 12 hours from the SD card to the researcher's password-protected MacBook laptop, then backing up this data using a password-protected external hard drive. Data will not be saved to the iCloud. Following the data transfer, both SD cards will be reformatted, so all interview data will be erased.
3) Being the only person to have access to and passwords for the storage devices mentioned above. The back up storage devices and any hard copy transcripts will be kept in a locked cabinet in the researcher's home when not in use.
4) Transcribing the recordings which will be saved as Word documents to the researcher's password-protected MacBook laptop and backed up using a password-protected external hard drive. Data will not be saved to the iCloud.

To verify that the research is being conducted properly, regulatory authorities might examine the information gathered. By participating, you agree to let these authorities have access to the information.

The researcher intends to publish the results of this research. Please indicate below whether you accept to be identified in the publications:

[ ] I accept that my name and the associated information I provide appear in publications of the results of the research.

[ ] Please do not publish my name as part of the results of the research.

The researcher will destroy all raw data 5 years after the completion of the study (i.e., the study is considered to be complete once the thesis has been deposited in Concordia's Spectrum online research repository).

E. CONDITIONS OF PARTICIPATION

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time. You can also ask that the information you provided not be used, and your choice will be

respected. If you decide that you don't want us to use your information, you must tell the researcher by the time you indicate approval of your interview transcript. If you withdraw before this time, your data will be destroyed and not be included as part of the research. There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information.

F. PARTICIPANT'S DECLARATION

I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described.

NAME (please print)_____

SIGNATURE _____

DATE _____

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher. Their contact information is on page 1. You may also contact their faculty supervisor.

If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

Appendix D

Sample Interview Template

1. How many years have you been a music therapist?
2. (a) How long have you been working in Neonatal Intensive Care Unit in Canada/elsewhere? (b) What brought you to this work?
3. What special training relevant to your NICU music therapy work have you done?
4. (a) Approximately how many hours do you work a week in the NICU? (b) How are these hours funded?
5. What does your typical weekly schedule look like?
6. Can you describe: (a) referral; (b) assessment; (c) evaluation processes?
7. Can you identify and/or describe the three most common music therapy interventions that you use?
8. What challenges have you encountered in your job?
9. What are the greatest rewards of your job?
10. How do you see NICU MT practice moving forward in Canada? What do you think is needed to make this happen?
11. What advice do you have for music therapists who are interested in developing a NICU MT program and/or doing this work?