

Postpartum Depression and Parent-Infant Attachment: A Music Therapy Program  
Intervention Research

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## ABSTRACT

### Postpartum Depression and Parent-Infant Attachment: A Music Therapy Program Intervention Research

Christina Sciascia

This study proposes a music therapy intervention program designed to promote the early attachment of parent-infant dyads that are affected by postpartum depression (PPD). Step one and part of step two of Fraser and Galinsky's (2010) approach to intervention research design was used to develop the program framework. The student-researcher reviewed 13 published Music Therapy articles and 12 published articles from related literature regarding early attachment. Other seminal works were included for context, definitions and theoretical underpinnings. The student-researcher used a directed content analysis approach to extract and analyze data necessary for developing and implementing the program. Results are presented through tables and a proposed intervention program. The findings show that the symptoms of PPD could impair parents' well-being and relational abilities which likely compromises parent-infant attachment and has negative effects on infant development in the short and long term. This music therapy program is designed to act upon identified variables in order to prevent and/or mitigate the potentially damaging effects of PPD on attachment and infant development. The main actions used to achieve these goals are group music therapy and coaching of wellness techniques and parenting skills. Future research and recommendations are presented.

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## Chapter 1. Introduction

It has long been acknowledged that early experiences in life play an important role in shaping our sense of self and the quality of our relationships across the lifespan (Ainsworth et al. 1978; Gerhardt, 2004). The care an infant receives as they enter this world is of critical importance, and is highly dependent upon their primary caregivers' ability to sensitively respond to their needs (Bowlby, 1988). According to the World Health Organization (WHO, 2015), about 13% of women experience postpartum depression (PPD). Parents experiencing PPD suffer from impaired interaction with their infants, displaying withdrawn and/or intrusive behaviors (Horowitz et al., 2019). These impaired interactions are likely to hamper their abilities to foster a healthy attachment style with their infants (Edwards, 2011).

Attachment theories (Ainsworth et al., 1978; Bowlby, 1969, 1988; Schore & Schore, 2008; Shiller, 2017) recognize attentive and affectionate primary relationships as being fundamental for the healthy development of children (Holmes, 1993). Although attachment in infancy is determined by many factors, including the infants' own internal systems and environment (O'Gorman, 2007; Takács et al., 2020), the quality of first attachments in life can have a significant impact on future well-being (Edwards, 2011). Gerhardt (2004) argues that children raised by parents struggling with depression are more likely to suffer from depression themselves. She advocates for the development of preventative social programs and services to address attachment in infancy, as it could benefit infants, parents, and society at large. Furthermore, based on elaborate collaboration between developmental and neurobiological research, Schore and Schore (2017) advise the creation of more early intervention attachment programs and stress that these would be an investment into the social emotional intelligence and wellness of society. In light of these theoretical and scientific findings, it is my opinion that a responsible society should be proactive in identifying and screening for postpartum depression; and in providing therapeutic services designed to support families as they struggle with postpartum issues. It is upon these research findings and philosophical positions that this research endeavours to create a music therapy intervention program

designed to address the relational and emotional needs of parents and infants affected by PPD.

### **Relevance to Music Therapy**

In seeking to establish a music therapy program for PPD, this research explores the rationale for the use of music therapy. To my knowledge, there has been no research conducted to inform the design of music therapy intervention programs for the treatment of PPD. Few studies examine music therapy in the context of PPD (de l'Étoile, 2012; de l'Étoile & Leider, 2011; Levinge, 2011; Robertson & Detmer, 2019) fewer still address attachment behaviors specifically (Levinge, 2011; Robertson & Detmer, 2019). Early parent-infant interactions have musical qualities to them, for instance speaking to a baby, trying to excite them, trying to soothe, hush and rock them to sleep. These behaviours are characterized by melodic and prosodic fluctuations of the voice and rhythmic movements of the body (Malloch, 1999). Also, akin to music, these behaviours feature inherent relational qualities including synchronizing, harmonizing, and responding (Levinge, 2011; Malloch, 1999). Supporting these types of parent-infant interactions could help foster healthy attachment behaviors while mitigating the detrimental effects of compromised attachment (Gerhardt, 2004). Judging by the theories cited and results of related studies, it seems evident that a music therapy intervention program could prove effective in helping depressed parents respond to, stimulate, soothe, and interact with their infants, thereby improving the quality and frequency of positive parent-infant interaction.

### **Personal Relationship to Topic**

Becoming a mother was a greater transformation than I could have ever imagined. For whatever reason, because the cause is not easily understood, I experienced many of the symptoms that I later discovered were hallmarks of postpartum depression. Sometimes I felt in a fog, my movements slowed, thoughts delayed. Sometimes I felt nervous doing everything too quickly feeling like I could never do it all. I had insomnia, pain, anxiety and lost interest in things that used to interest me. For instance, I had been a singer and performer for years, but suddenly I no longer wanted to sing. I explained away my symptoms as a normal part of becoming a new mother when in fact I was overwhelmed.



In trying to help, friends and family normalized and dismissed what I was experiencing. On several occasions, doctors told me to get more rest and/or that as a new mother lack of sleep and feeling anxious were typical. It took me three years, after my second child was born, to finally have a doctor investigate the possibility that I may be depressed.

With the rate of occurrence of PPD as high as 13% (WHO, 2015), I wondered why it was so difficult for me to understand that I was depressed; why it took so long for my doctors to screen for depression; Why, as I write this, I still feel the sting of shame. Would the first years of motherhood have been less stressful if I had had more awareness and treatment? Furthermore, and perhaps most importantly, did my reduced abilities to cope and interact during that time compromise the development of my children? I feel cheated from having been able to fully appreciate those years and wish that there were more resources available for parents and less stigma associated with PPD. Fortunately, I had a supportive partner, a network of friends, and extended family to help. I am aware that not everyone is that privileged.

As a professional music therapist, my practice is informed by the fundamentals of attachment theory (Ainsworth et al., 1978; Bowlby, 1969, 1988; Schore & Schore, 2008; Shiller, 2017). On a personal note, through my lived challenges with symptoms of depression in the postpartum period, my struggles with parenting, and my connection with others who have had similar struggles, I have come to understand attachment through a whole new lens. I know firsthand the shame and guilt that can come with PPD, the psychological barriers and obstacles that can hinder positive interactions and communication, and the physiological toll that depression exacts on the nervous system. These issues can make it difficult to seek help, particularly when the social climate diminishes the stress, anxiety and mood alterations that a new parent may experience.

Given how many parents and infants are negatively affected by PPD (WHO, 2015), and the natural relational qualities of music-making (Bargiel, 2004; Edwards, 2011; Levinge, 2011; Malloch, 1999) the main purpose of this study was to design a music therapy program to promote parent-infant attachment in cases of postpartum depression. Unlike *Band-Aid* solutions that are applied after harm is already done, a

preventative music therapy program for postpartum depression is a roots-up strategy to promote individual, familial and societal well-being.

### **Research Questions**

The primary research question is: “How can a music therapy program be designed to promote parent-infant attachment in cases of postpartum depression?” Secondary research questions are: (1) What are the needs of the parents with PPD in relation to attachment with their infant? and (2) Which music therapy interventions can be used to address those needs within a program structure?

### **Assumptions**

By developing and providing more diverse and widely accessible services for the treatment of PPD, we can increase awareness, decrease stigmatization, and have a positive effect on the well-being of parents, children and society.

This study, was situated within a humanistic, resource-oriented approach to music therapy with a constructivist epistemological foundation. I began my research with the following assumptions: That early attachment issues will impact an individual’s well-being throughout their lifespan; that there is a real and significant potential for PPD to negatively affect attachment; and, that music therapy programs for PPD would help mitigate the potential negative effects on attachment. I assumed that the musical nature of our early relationships and that music therapy is a successful and cost-effective treatment option. It was also my assumption that the need exists for this type of treatment and that this type of treatment program could provide support and guidance to parents with PPD and thus help to reduce the severity and consequences of their symptoms.

### **Terms and Definitions**

*Postpartum Depression* is defined as depression experienced by women within a year of giving birth “.... symptoms are the same as in general depression and must meet the same criteria for diagnosis. However, the symptoms of PPD often focus on motherhood or infant care.” (Center for Addiction and Mental Health, 2019).

*Depression* is a mental illness causing feelings of sadness, lack of enjoyment, diminished energy levels, and/or loss of interest in things; and lasting for a period of longer than two weeks. (American Psychiatric Association, 2020)

*Attachment* refers to our interpersonal connections to others (Holmes, 1993). Early theories of Attachment focus on parent/infant interactions and demonstrate how these interactions create and shape the affectional bond or attachment between the dyad (Ainsworth et al., 1978, Bowlby, 1952, 1969, 1988; Holmes, 1993). Attachment behaviours include seeking or offering proximity and comfort, sensitivity to the needs of the other, and responding to those needs in a timely manner (Bowlby, 1969). Modern theorists have elaborated on these concepts and demonstrate how attachment serves not only as a function of security and safety for the infant, but also is intertwined and vital for an infant's regulatory and neurological development (Schore & Schore, 2008).

*Music Therapy* "...is a discipline in which Certified Music Therapists (MTAs) 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, 2016).

*Infant* is defined as children from birth to the age of three years old for the purpose of this research paper in order to target studies done between parent/infant dyads in the period shortly after birth. (Abad & Williams, 2007)

### **Delimitations**

Studies, articles, book chapters and dissertations relevant to attachment and PPD in the field of, or related to, music therapy were delimited to those published in the English language beginning in 2000. Seminal works that do not fit this description were included to provide sufficient contextual and historical foundations upon which to build the intervention program. Furthermore, the scope of this thesis encompasses only 1.5 out of the 5 steps of Fraser and Galinsky's Intervention Design model (2010), lacking the model's implementation, testing and standardization steps.

### **Chapters Summary**

Chapter one introduces the topic and highlights the need for this research; describes the researchers' personal relationship to the topic, the statement of purpose and the research questions. The chapter goes on to situate the researchers' assumptions, define the key terms, and list the delimitations of the study. Chapter two details the literature referenced in this study, and provides a description and summary of major

ideas. The main topics include: Postpartum Depression (PPD), The Importance of Early Attachment, Musical Characteristics of Early Interactions, Music Therapy to Promote Attachment, and The Use of Music and Music Therapy to treat Postpartum Depression. Chapter three describes the research intervention design methodology (Fraser & Galinsky, 2010) used for this study, and its epistemological foundations; tools and theories used for intervention designs; along with the search methods, and procedures for data collection and analysis. Chapter four presents the coded results based on data extracted from the literature, and a proposed intervention design based on thorough analysis of these results. Chapter five discusses the study findings and limitations, along with suggestions or implications for areas of future research.

## Chapter 2. Literature Review

This literature review examines the effects and outcomes of music therapy treatment in the context of postpartum depression (PPD) and attachment. In adherence to the norms of contemporary literature the terms *parent* and *parental* will herein refer to the primary caregiver. To begin, the review provides a description of PPD and its etiology. The next section highlights expert opinions on early attachment and the musicality of early communication as these theories provide the groundwork or foundation from which the rationale for a music therapy program for PPD is built. Because very few music therapy studies deal specifically with treating PPD, and because compromised attachment is a serious consequence specific to PPD (Field, 1998; 2010), music therapy studies and expert opinions that look at early parent-infant attachment are examined (Abad & Williams, 2007; Bargiel, 2004; Edwards, 2011; 2014; Levinge, 2011; Nicholson et al., 2008; Oldfield & Bunce, 2001; Pasiali, 2012; 2014; Reilly et al., 2019; Robertson & Detmer, 2019). Additionally, parent-infant studies from related fields that use musical intervention are highlighted as they can contribute to the understanding of music and its effects depending on the quality of the research. When distinguishing between music therapy and music interventions, the difference is the direct involvement of a certified music therapist. There are often misleading labels where the term *music therapy* is attached to research lacking the expertise of a trained music therapist. To become a music therapist, extensive educational courses and supervised internships must be completed to develop knowledge and skills in how to administer and select appropriate musical interventions for therapeutic treatment in various types of settings and with diverse populations (Davis et al., 2008). Music therapists follow a code of ethics established by their professional association. They are also qualified as musicians and as therapists and understand that for therapy to be successful, the necessity of a therapeutic alliance between the therapist and client is central. Certification also requires that they adhere to continuing education and professional development goals set by their association.

Finally, music therapy and related studies that specifically examine parent-infant interactions in cases of PPD are summarized. The literature review concludes with a

summary of the research presented and how it provides support for the creation of a music therapy program for PPD.

### **Postpartum Depression**

Postpartum depression is defined as mental health disturbances associated with a depressed mood beginning within weeks or a few months after birth and lasting longer than two weeks (Anderson, 2017). The Canadian Mental Health Association (2014) describes depression as a mental disorder that affects a person's mood. This in turn will affect the way the depressed persons see themselves and relate to others. If treatment is not sought and received promptly, or if the person is lacking in support, depression can persist and worsen.

Statistics demonstrate that postpartum depression is quite common, affecting many women, children, and families. Ratios of up to 20% of women who give birth are affected in less-developed countries (WHO, 2015). The etiology of the disease is not clearly understood, but contributing risk factors include genetics, hormonal effects, experiential and environmental influences; hence supporting the rationale for a treatment approach realized within a biopsychosocial model (Robertson et al., 2005).

Depression has also been identified during pregnancy, according to the Public Health Agency of Canada (2012), afflicting approximately 10% of expectant mothers. Left untreated, pre-natal depression may deepen post-partum, affecting how the mother interacts with her infant. Their website specifically advocates treatment of depression in pregnancy to reduce the risk of PPD.

Symptomatically, postpartum depression presents the same as general depression, thus the same diagnostic criteria are used to diagnose and assess its severity (Ross et al., 2005). Symptoms commonly associated with depression may be so distressing, creating such feelings of sadness, helplessness, and decreased ability to enjoy life or cope, that the depressed person may even have difficulty asking for help (Levinge, 2011; Public Health Agency of Canada, 2012). Other symptoms of postpartum depression are changes in appetite and weight, fatigue, sleep disturbances, agitation, brain fog, feelings of negative self-esteem and self-worth, difficulties with attention and concentration, and disturbing

thoughts and/or ideations. Extreme cases of untreated depression may result in harm or death to the infant and/or suicide of the parent. (Ross et al., 2005; WHO, 2015).

A physician can diagnose postpartum depression based on clinical assessment, observations, informal interviews, and/or by using established depression scales to identify symptoms and grade their severity (Ross et al. 2005; Anderson, 2017). Many obstacles to diagnosis have been identified; such as feelings of guilt and/or shame mothers may have regarding mental health issues, or their belief that their symptoms are typical of the *normal* postpartum experience. Likewise, many physicians may not be well-versed in recognizing and assessing for postpartum depression (Ross et al., 2005, Public Health Agency of Canada, 2012).

Given the special circumstances of giving birth and subsequent demands placed on the parent, the treatment and assessment of postpartum depression emphasizes both the parental implications and the infant's well-being (Ross et al., 2005). Tiffany Field (1998, 2010), a prominent researcher into the effects of postpartum depression on infant development, notes that depressed mothers typically display disorganized interaction styles, oscillating between withdrawn to intrusive behaviors which may include abrupt interactions, becoming easily angered, and irritability. This can have a disorienting effect on infants, contributing to the dysregulation of arousal and biochemical markers of stress. Further summarizing her research findings, Field (1998) states that parental depression has negative effects on infants as early as at birth, noting a disoriented regulation style that negatively affects sleep and arousal levels. She supports the use of music therapy programs that combine the use of music interventions and coaching. She explains that the mood-altering effect of music can support healthier parent-infant interactions and make the pair more responsive to coaching by improving their regulating capacities (Field, 2010). Studies have found that infant behavioural responses to disorganized parental interaction include increased crying, sleep difficulties, issues with responsiveness and even neurological delays (Field, 1998, 2010; Horowitz et al., 2019). These behaviours in infants have been shown to compromise primary attachment bonds and reduce perceived parental satisfaction (Robertson & Detmer, 2019; Takács et al., 2020).

Research also sheds light on some positive findings that show how other caregivers involved can act to moderate the negative effects associated with maternal

depression (Bintas et al., 2019; Field, 1998). As well, early intervention therapies focused on improving mood—notably touch, interaction coaching, and music therapy—showed improvements in parental responsiveness, dyadic interactions and the infant’s emotional, responsive, and social behaviours (Field, 1998).

### **The Importance of Early Attachment**

Since the 1950s, psychology theory and practice has shifted in emphasis from a psychodynamic to a more humanistic orientation (Holmes, 1993). Born from this shift, attachment theory was first postulated by researchers such as John Bowlby and Mary Ainsworth (Simpson & Rholes, 2015).

Bowlby was a pioneer in recognizing separation anxiety and the importance of a secure base in the healthy development of a child (Bowlby, 1952, 1969, 1988; Holmes, 1993). Mary Ainsworth elaborated on Bowlby’s work through the ‘strange situation’ (Ainsworth et al., 1978, p. 282) studies she conducted, and concluded that for a secure attachment to develop between the infant and mother, the mother must be able to respond to her infant in a timely and sensitive manner (Ainsworth et al., 1978). An abundance of research in the decades that followed demonstrated how important the primary caregiver’s role is in shaping children’s development (Holmes, 1993; Shiller, 2017).

It has become clear that a nurturing primary attachment is of utmost importance to the healthy development of children (Gerdhart, 2007). Various studies indicate that in infancy, a healthy attachment plays a central role in regulating the infant’s states of arousal and affect (O’Gorman, 2007; Nakata and Trehub, 2004; Shenfield et al., 2003); and the effects of one’s first attachment relationship extend throughout life influencing relationships in all other areas (Field, 2010; Pasiali, 2014; Shiller, 2015).

Early attachment theories have been criticized for blaming mothers and ignoring other influences such as genetics, hormones and environment (Holmes, 1993). Although the mother’s role in developing this first attachment bond is crucial, it is equally important not to stigmatize those who struggle with PPD. Women giving birth undergo complicated biochemical and psychological changes—even as they must work through their own past experiences that could complicate their ability to form effective attachment bonds (Holmes, 1993). Other factors shown to influence attachment include the infant’s



biochemical system and the environment in which the infant is raised (de l'Étoile & Leider, 2011; O'Gorman, 2007; Takács, et al., 2020).

Instead of judgment and stigmatization, awareness and support should be made available to struggling families (Holmes, 1993). Gerhardt (2004) emphasizes the urgency of a nurturing environment in infancy and explains that many problems seen in later childhood—from aggression, hyperactivity, obesity, depression, and academic difficulties—are shaped in infancy. Gerhardt highlights depression as a risk factor contributing to negative outcomes, noting that the children of depressed parents are six times more likely to suffer from depression themselves.

Edwards (2014) supports similar ideas. She argues that more attention should be paid to music therapy in the context of attachment to understand the techniques and methods that would serve this purpose the most. She stresses the importance of research to unravel the detrimental impact of poor attachment on individuals and families, as well as to understand the ripple effects extending to society at large.

### **Musical Characteristics of Early Interactions**

#### ***Infant Directed Speech and Infant Directed Singing***

One of the first forms of music experienced by infants during their earliest period of development is 'communicative musicality': a term coined by Stephen Malloch (1999) to describe the particularities of speech from primary caregivers, particularly the mother when communicating with their infant. Malloch identifies three fundamental parameters of this type of speech as 'pulse,' 'quality,' and 'narrative.'

Pulse refers to the rhythmic expression of the speech, quality refers to the melodic contours of the pitch, and narrative refers to the communicative intent of the speech which is at the heart of sharing and interpersonal connection. This type of communication is also known as Infant Directed Speech (IDS), 'motherese', and/or 'parentese' and is identified as being a phenomenon that exists globally (Malloch, 1999). Infant Directed Speech is typified by higher pitches, slower tempos and exaggerated prosodic contours that adults use when communicating with their infants (Edwards, 2011, 2014; Vlismas, et al., 2012); the sing-song quality that we use when we speak to babies and young children. It is thought that IDS, which will herein will be referred to as *parentese* enhances interactions between the parent and infant by serving as a regulatory function and an

empathic tool (de l'Étoile & Leider, 2011; Malloch, 1999). As well, the increase in pitch and longer durations of speech in parentese improves and lengthens the infant's attention to the parent. Thus, it is hypothesized that improving the use of parentese could improve the quality and quantity of meaningful parent-infant interactions (Vlismas et al. 2013).

There have been associations made between flatter and fewer presentations of parentese in people diagnosed with PPD. This is viewed as an impairment in the person's abilities to communicate affectionately which could have a detrimental effect on the early dyadic communication necessary to form strong attachment bonds (Kaplan et al., 1999; de l'Étoile and Leider, 2011). The following studies have examined the use of parentese, parental singing, and the effects they have on infant behavior. The findings demonstrate that impairments in this area have a direct effect on the parent's ability to soothe and/or stimulate their infants.

Infant Directed singing (ID singing) has demonstrated the same regulatory and empathic functions as parentese (de l'Étoile 2006, 2012; de l'Étoile & Leider, 2011) and been found to sustain the infant's attention longer (de l'Étoile & Leider, 2011; Nakata Trehub, 2004; Vlismas et al., 2012). Although parentese has higher and greater fluctuations of pitch thereby initially attracting the attention of the infant more quickly than ID singing, the longer sustained attention of ID singing makes this more effective as a means to communicate emotional information from parent to infant, and to increase interaction time between the two (de l'Étoile & Leider, 2011; de l'Étoile, 2006, 2012). It is believed that parentese and ID singing serve important regulatory functions for the developing infant. If these interactions are impaired or less frequent due to depression, the consequence could be that the infant may not receive enough quality experiences of interaction and arousal modulation to assist them in developing their own regulatory system and healthy attachment style (de l'Étoile & Leider, 2011; de l'Étoile, 2012).

Nakata and Trehub (2004) reinforced the finding that ID singing maintains the infant's attention longer than parentese, observed in their study by the decrease in movement of the infants during the singing condition indicating heightened focus or interest. As well, by examining spikes in arousal and gaze aversion in the two conditions, their findings indicate the possibility that singing has a more moderating effect on arousal than speech. They conclude that the rhythmic pulse of music is an advantage of singing

over speech potentially acting as an emotional coordinator between the mother-infant pair (Nakata & Trehub, 2004).

Furthermore, Shenfield, Trehub, and Nakata (2003) conducted a study examining the regulatory function of ID singing. By measuring levels of the stress hormone cortisol in the saliva of infants, they confirmed that ID singing has a bidirectional effect on the arousal levels: ID singing increases cortisol in babies with low initial levels and subtly decreases cortisol when the initial level is high. Hence, a playful singing style may support arousal levels favorable to sustaining the infant's attention and contrarily, softer forms of singing may reduce arousal levels and even induce sleep, as with lullabies. These findings demonstrate that ID singing has a regulating effect on the infants and can both stimulate or sooth when used accordingly.

As noted above with parentese, factors that adversely affect ID singing include PPD. Parents suffering from depression may be missing the affectionate quality in their ID singing, which is needed to help regulate the infant's arousal levels (de l'Étoile and Leider, 2011). De l'Étoile and Leider (2011) examined the acoustic parameters of the ID singing and found that ID singing of parents with depression was impaired. This study examined the relationship between the parent's depressive symptoms and the quality of their ID singing. The authors found that parents with depressive symptoms were not synchronizing their ID singing with their infants' affective state. Specifically, they found a positive relationship between symptoms of depression and the tempo of ID singing, indicating the former may cause either a deficiency in the parent's sensitivity to their infant's needs, or a reduced awareness of the infant's responses to their vocalizations. They suggest the use of interventions combining coaching and ID singing to help depressed parents interact in greater synchronicity with their infants (de l'Étoile and Leider, 2011).

The following year, de l'Étoile (2012) looked at infant responses to ID singing of parents with depressive symptoms. They compared the results of sixteen parent/infant pairs affected by depression in the experimental group, to sixteen asymptomatic pairs in the control group by measuring the length of infant gaze during ID singing in both groups. The findings indicate that the infants did not show a depressed interaction style with either condition. Infant Direct singing seemed to enhance face-to-face (F2F) time

and afford an opportunity for the infant to self-regulate, despite the parent's depression. These results imply that the parent's singing could provide opportunities for their infant to self-regulate even when the voice is impaired. As well, it could reassure the parents that their skills are sufficient to promote self-regulation. The findings also support the notion of interventions combining coaching and ID singing for depressed parents (De l'Étoile, 2012).

Likewise, Bargiel (2004) argues that the widespread use of lullaby and the musicality evident in newborns point to areas for research and practice that are underdeveloped. In her theoretical considerations of the use of music therapy for infants at risk of difficulties with attachment, Bargiel hypothesizes that the therapeutic use of lullaby singing could help in supporting healthy affect, regulation, and arousal in both infants and parents; and potentially reduce symptoms of pathology that may exist within a family, and by extension, in society. She argues the necessity of more research to support this theory and underscores the cost effectiveness of this type of treatment.

A more recent study by Persico et al. (2017) reinforces these ideas, providing evidence that parents who are coached to use lullaby singing with their infants report higher levels of well-being and their infants display less crying and colic overall. The researchers conclude that lullaby therapy could significantly benefit infant and maternal well-being, and the affectional bond between the two.

### ***Music and Movement***

In addition to the use of voice in early communication with infants, rhythmic movement such as rocking and swaying has been identified as playing important communicative and interactive functions between parent/infant dyads (Malloch, 1999). Vlismas, Malloch and Burnham (2013) published the results of an interesting study following two experiments that set out to examine the effects of music and movement (M&M) on parent-infant interactions. The first part of this experiment included 96 healthy first-time parent-infant pairs, who attended weekly sessions over a five-week period. Candidates were split into four groups: the first received a M&M program and face-to-face time (F2F); the second only M&M; the third only F2F; the fourth, a control group, received neither intervention. Using the Maternal Postnatal Attachment Scale (Condon & Corkindale, 1998) pre- and post-test to measure the results, the researchers

found that both groups receiving M&M generally featured increased maternal interactions with, and perceived attachment to, their infants. F2F time alone resulted in no such increase. The authors indicated that the results were statistically significant. (Vlismas et al., 2013).

The next experiment within the same study set out to investigate how M&M influences the behaviours of parentese and parent-infant reciprocity (Vlismas et al., 2013). Forty-four parent-infant pairs participated in this study. M&M was found to produce parentese with increased duration, pitch, and range. As well, parents who did not receive M&M showed diminished reciprocal interactions with their infants and flatter speech characteristics. Acknowledging the study's limitations, including a lack of longitudinal follow-up research as well as the need for more objective measures, the authors nevertheless concluded that M&M activities could benefit the parent/infant relationship.

Similarly, Puyvelde et al. (2014) used dance as a metaphor for the dynamics of the early parent-infant relationship. This study was conducted in a residential parent-infant unit specializing in PPD. The parents were seen alone for 90 minutes per week, and additionally attended a weekly 30-minute group music therapy session consisting of four parent-infant pairs. Interventions included singing and movement. By micro-analyzing and contrasting approximately 25 minutes of the first and fifth sessions, researchers found a significant increase in the number and total time of meaningful shared experiences between parents and infants over time. Interestingly, both studies concluded by advocating greater use of music and movement both as therapeutic treatments for postpartum depression, and to enhance early attachment. The studies also acknowledged that more research is needed in this area (Puyvelde et al., 2014; Vlismas et al., 2013)

### **Music Therapy to Promote Attachment**

Rare music therapy programs exist for at-risk families to improve their interactions through musical interventions. One notable example is Sing & Grow, established in 2001 by the Australian Government Department of Family, Community and Indigenous Affairs, which funded a large early-intervention music therapy project for 683 participating disadvantaged families (Abad & Williams, 2007). Studies over the

course of that project have provided strong evidence for how music therapy can support establishing and developing attachment bonds within at-risk families. Parent-child music interventions were offered to families with children between the ages of 0-3 years old, in the form of one-hour sessions, weekly, for 10 weeks. Registered music therapists were the session leaders for these group interventions, which aimed to strengthen family bonds, contribute to the healthy development of the children, and establish a network of social support and resources for the participating families (Abad & Williams, 2007; Nicholson et al., 2008). The therapists' role focussed on reinforcing parenting strengths, coaching awareness of child responses, and placing emphasis on attachment through music-based play and by modelling, explaining, and developing tools for positive interactions in infancy. Data from the project was collected using pre- and post- surveys filled out by participants, as well as through observations documented by the music therapists. The survey results showed that 70% of parents had improved their perception of attachment to their child, while 100% reported enjoyment. Observations made by the music therapists suggested that the project was successful in increasing parent-child interactions and in providing opportunities for playful interactions.

Another article describing two short-term music therapy groups for mothers and young children focused on improving the parent/child relationship (Oldfield & Bunce, 2001) and showed how early intervention could help prevent future difficulties for the children and the families. The article stresses the inherent musical nature of early interactions as a strong rationale for the use of music therapy and draws interesting parallels between parent/infant interactions and the playful musical interactions between a music therapist and their clients. Oldfield and Bunce (2001) described the interactions during sessions as a metaphorical microcosm of parenting: the sessions provided a safe space for parents to learn and practice the affectional and non-verbal communications that are the essential for developing the parent/infant attachment bond. Similarly, parents are meant to provide their infants a safe space in order to nurture and support their development. The authors explain that the sessions offered the parents an opportunity to acquire the personal and parental skills needed to form and repair healthy relationships which in turn provided the infant with the types of interactions and care needed to form healthy attachment bonds (Oldfield & Bunce, 2001).

Furthermore, reviewing and synthesizing theories and literature from the fields of psychology, social neuroscience, and music therapy, Pasiali (2012) proposed a conceptual model for five main ways that music therapy and music-based interventions can foster attachment, as follows:

- (1) supporting parent-child co-regulation and mutual responsiveness, (2) rebuilding capacity to form or restore relationships, (3) reducing stress and mood disturbances, (4) supporting healthy partner interactions by enhancing communication skills, and (5) providing social support and building coping skills among families and individuals who are facing challenging life circumstances. (Pasiali, 2012, p.202)

Music therapy-specific interventions and techniques to achieve these objectives will be further examined in a subsequent chapter in the context of their use with parent/infant dyads during the postpartum period. Although research in the area of music therapy and attachment remains limited, the results are promising and merit attention. (Edward, 2011; Pasiali, 2012)

### **The Use of Music and Music Therapy in the treatment of Postpartum Depression**

In two separate studies (Perkins et al., 2018; Reilly et al., 2017), group singing is shown to be a promising vocal intervention to treat PPD. Results from those studies have demonstrated reductions in the self-reported symptoms of depression after parents participated together in weekly singing groups. Participants themselves gave the group-singing interventions positive reviews. Both studies recommend more research to explore how group singing may reduce PPD symptoms and foster healthy attachment.

Research by Robertson and Detmer (2019) has demonstrated that the purposeful use of lullaby singing may reduce infant crying times during the first six weeks of life and enhance dyadic interactions. Over forty parent/infant dyads participated in this study to completion. They were instructed by researchers on how to write and sing a meaningful lullaby by personalizing the lyrics to a familiar song. Following this step, the parents were coached on using the lullaby to reward infants during quiet and alert states, but to discontinue singing when the infants were crying. Their results suggest that if given coaching on how and when to use lullaby music, the mother can reduce some of the

negative behavioural responses of her infant, which, in turn, may alleviate stress and promote attachment.

Levinge (2011) offers some examples and reflections of her work in the area of music therapy and PPD. She describes the nature of sessions between herself as the music therapist and the parent/infant dyad as well as work done in group contexts with multiple dyads participating. She stresses the value of using music in a therapeutic context for repairing difficult relationships and creating moments of attachment between the parent-infant dyad. Furthermore, she highlights the use of modeling techniques to help parents who may not have had good role models in their own early childhood. In her considerations, clinical improvisation is noted as being an important and meaningful intervention for developing or repairing the parent's ability to play and relate in affectionate and meaningful ways. Like the above-mentioned observations by Oldfield and Bunce (2001), Levinge (2011) also draws parallels between the musical client-therapist interactions that occur in therapy sessions, and the affectional parent-infant interactions required for attachment.

Another study examines the effects that short-term music therapy has on the stress and anxiety levels of hospitalized parent and their infants during ante and postpartum periods (Corey et al. 2019). This study is not specifically about music therapy and PPD but it highlights the emotional needs of parents at high risk of depression, stress, and anxiety due to difficult pregnancies and deliveries. The study describes a one-time bedside music therapy session administered to hospitalized parent/infant dyads. The sessions lasted approximately 30 minutes long and focused on either personal relaxation and self-care for the parent, parent-infant bonding tools and techniques, or a combination of both depending on the reason for referral. The study shows, at least in that hospital, that there is a need and perhaps desire for this type of treatment based on the number of referrals received. As well, positive feedback was given from both the participants and other hospital staff. As part of the procedure for the study, the music therapist selected her participants from referrals given by other hospital staff combined with the willingness to participate of those referred. The most common reasons for referral in order of occurrence were stress and anxiety reduction, emotional support, and parent-infant bonding. The results of this study were extracted from post-intervention surveys filled out



by the participants. All 214 recipients who completed the survey reported that they were highly satisfied with the intervention, 99% reported improvements in relaxation, and 97% of those receiving parent-infant bonding interventions reported positive feelings of connection to their infants. The results support the use of music therapy interventions, however, because no pre-test was taken to compare outcomes, they provide little evidence that the interventions improved attachment or feelings of connection. Nevertheless, the indication that parents reported feeling connected to their infants after the bonding interventions lends support to the successful engagement in a positive dyadic interaction. As well, the author of the study explains that this research demonstrated that even parents who are compromised or at-risk display an openness to receiving music therapy, interaction coaching, and tools for relaxation.

Other studies examined the effects of music-listening on postpartum stress and anxiety (Tseng et al., 2010) In one, parents who were assigned thirty minutes of self-administered music listening daily for two weeks showed no change in perceived stress and anxiety from pre- to post-testing. However, when comparing similar studies that involved the support of a therapist against ones that had no therapist support, results demonstrated that more positive outcomes were found for the former. The authors hypothesized that therapeutic guidance may demand greater participation from the parents involved, becoming an important determinant of the treatment's success. (Tseng, et al., 2010). To put it simply, prescribed music listening is more effective with the support of a therapist. Although music itself has therapeutic benefits, it is the structured support of a music therapist that is potentially the determining factor rendering these interventions most effective, as other studies have shown (Abad and Williams, 2007; Albornoz, 2011; Puyvelde et al., 2014).

A separate systematic review of the effectiveness of music therapy for postpartum depression also identified receptive music interventions as useful in relieving symptoms of postpartum depression (Yang et al., 2019). It seems, however, that this review may use the term 'music therapy' inappropriately. The involvement of music therapists is neither explicit nor a factor in the reviews' inclusion criteria and music therapy is not well defined in the article that was published. Studies included in the review are Randomized Controlled Trials examining the effects of prescribed music-

listening exercises done by parents who were diagnosed with PPD and were already receiving traditional psychological treatment. The control groups of the included studies were parents who were receiving the traditional psychological treatment for PPD without the inclusion of receptive music interventions (Yang et al., 2019). The review authors concluded that music-listening decreased symptoms of depression and recommend more research into music therapy as a treatment for PPD. These authors further state that music therapy is safe and cost-effective, and is recommended as an adjunct therapy in treating PPD. Even though a music therapist was not involved in this study, the outcomes offer support for the use of receptive music in the treatment of PPD. These results can contribute to informing music therapists on the benefits of prescribing music listening. Music therapists may want to consider receptive music as a cost-effective and convenient tool for the parent to use at home between therapeutic sessions, as well as to maintain well-being beyond the course of their treatment. (Yang et al., 2019).

### **Conclusion**

The musicality of our first relationships includes the connection to the voices we hear *in utero* and after birth, the rhythms of speech and movement, and the soothing qualities of certain sounds and pulses. These phenomena suggest a perfect fit for the use of music therapy during the postpartum period (Bargiel, 2004; Edwards, 2011; Levinge, 2011; Malloch, 1999). Developing a secure attachment is vital to the future well-being of the infant, and the devastating effect of postpartum depression on parent, infant, and other family members is clearly demonstrated in the literature. The literature further demonstrates that parents can benefit from a resource-oriented music therapy (Rolvsjord, 2010) program designed to help them manage depression while promoting healthy and positive mother-infant interactions.

Thus, prevention and awareness must be viewed as powerful mitigating strategies, supported by the research (Gerhardt, 2004; Edwards, 2011). Available research in music therapy and related fields, though limited, is sufficient to use as a basis for determining best practices for such a program. Indeed, I assume a thoughtfully designed program model based on these findings could serve to raise awareness and funding for the implementation of pilot studies and programs on this topic in future.

Such a pilot initiative should include elements of coaching and education aimed to help develop parenting skills; increase awareness of issues like the importance of early attachment; signs, and symptoms of postpartum depression; and how to interpret and respond to infant behaviours. Given the literature examined, the combined use of active and receptive music therapy interventions seems appropriate to target different areas of need in both the parent and the infant. If group intervention is offered as part of the program, research shows that this format could have the added benefit of serving as a support network of peers experiencing similar challenges (Abad & Williams, 2007; Albornoz, 2011). The group setting could give parents—particularly those lacking an extensive support network of friends and family—a sense of belonging and connection as they navigate the enormous transformation of becoming a parent.

### Chapter 3. Design

Fraser and Galinsky's (2010) intervention research design (IRD) serves as the foundation that informs this music therapy program outline. This methodology specifies a five-step plan of action for developing and implementing psychosocial programs. Intervention research design is used to create programs based on the concepts of purposeful change that emerge from understanding the risk factors as well as other variables that can moderate and/or prevent negative outcomes of a phenomenon (Fraser & Galinsky, 2010). The steps in this process are not always linear and sometimes will need to be reviewed and altered as new data emerges. In Step one, the problem theory is developed by identifying and defining the problem, the associated risks, and the protective and promotive factors. This is done by closely examining the relevant literature and drawing out the necessary information. Likewise, the program theory is described by identifying *malleable mediators* as well as the appropriate interventions, settings and levels of treatment. From the identification of those factors, a theory of change is deduced as a foundation for the program development. Step Two, uses the results of the aforementioned data analysis to "Specify program structure and processes" (p.463) by creating a first draft of the program manual for review. This step should involve thoughtful suggestions of appropriate session structures and protocols, required resources, desired outcomes, interventions and associated goal areas, implementation strategies and any required training of specialists. Steps Three to Five involve creating efficacy tests, conducting these tests through practical implementation of the program, analyzing, and disseminating the test results. Since this paper is limited in scope to the requirements for a Master-level thesis in Creative Arts Therapies, Music Therapy Research Thesis option, and it would not be feasible to implement such a program within this scope, only Step One and part of Step Two have been completed.

#### **Data Collection**

Data in this study consists of relevant literature including peer-reviewed articles, published books and book chapters, thesis dissertations, webpages for statistical reference and definitions, and personal notes and memos. The retrieval of relevant data for this research consists mainly of:

1. Online searches using various search engines and data bases (Medline, EBSCO, Psych Info, APA Psych Net, Google Scholar and Sofia Discovery Tool, etc.).
2. Manually searching reference lists of acquired and related publications
3. Official websites

The primary keywords and terms used for the search included: *music therapy, attachment, and postpartum depression*. Similar concepts of the keywords were used to widen the net of findings. These included: *music intervention, musical therapy, therapeutic music, postnatal depression, PPD, maternal depression, parental depression, bonding, attunement, early interactions, mother/infant, parent/infant and early intervention*. Various combinations of the above keywords were used as the search terms. An example of a search done is *music therapy and postpartum depression*. More complicated searches used more operators and more search terms, for example: *music therapy OR music intervention OR musical therapy AND postpartum depression OR postnatal depression OR PPD*. In addition to online searches, the reference lists of relevant research were reviewed as a gap analysis to determine if anything was missed. Once relevant literature was selected, it was organized into categories and sub-categories and presented the in a literature review format.

The included literature consisted of 45 publications; of these, 34 are journal articles, six are books or book extracts, and five are webpages:

1. Fourteen concerned music therapy and attachment or closely related topics.
2. Ten focused on music therapy and PPD or closely related topics
3. Fifteen involved expert opinions on early attachment and related theories.
4. Five recognized and official webpages for statistical information and/or definitions.

### **Data Analysis**

A directed content analysis was used to target the most relevant studies included in the literature review followed by extracting and coding data using pre-determined categories (Hsieh & Shannon, 2005, Elo & Knygäs, 2008) The data analysis focused on seven studies that included a music therapist and mention of PPD as shown in Table 1. The predetermined categories encompassed the necessary information needed for the

Intervention Research Design: risk factors, protective factors, promotive factors, malleable mediators, identified problems, intervention level and type, settings, and outcomes. Other sub-categories and themes that emerged through this process were added for analysis.

**Table 1.** *Summary of Literature Used for Directed Content Analysis*

<b>Key Idea</b>	<b>Author</b>	<b>Year</b>	<b>Pub. Type</b>	<b>Intervention/ Study type</b>	<b>Music Therapist</b>	<b>PPD</b>
Early intervention MT with at risk families	Abad & Williams	2007	Journal article	Description of early intervention MT project	Yes	Some
Postpartum bedside MT	Corey et al.	2019	Journal article	Hospital Bedside MT for parent/infant: Quantitative study	Yes	some
ID singing and PPD: infant responses	de l'Etoile,	2012	Journal article	ID singing: Quantitative Study	Yes	Yes
ID singing and PPD: acoustic parameters	de l'Etoile & Leider	2011	Journal article	Quantitative study	Yes	Yes
MT for PPD	Levinge	2011	Book Chapter	Description of group and dyadic MT for PPD	Yes	Yes
Short term parent-infant MT	Oldfield & Bunce	2001	Journal article	Description of parent/infant MT programs	Yes	some
Use of contingent lullaby	Robertson & Detmer	2019	Journal article	Lullaby singing: Quantitative study	Yes	some

*Note:* Pub. stands for publication.

Coded data were extracted and organized into an excel file by the predetermined categories. The information was then organized further by sub-categories and emergent themes. Concept maps and memos notes were used as strategies to help draw connections between the data and to build theories and hypotheses that emerged. The researcher's relevant personal experience was integrated as applicable through journaling and writing

memos that assisted the process of reflexivity and analysis. The data were then analyzed to draw conclusions, make connections, and propose different theories.

### **Step One: Developing the Problem and the Program Theory**

The first step of defining the problem and program theory (Fraser and Galinsky, 2010) entailed highlighting the risk, protective and promotive factors associated with PPD, and identifying the problem and problem theory. Subsequently the malleable mediators were identified. Fraser and Galinsky (2010) explain malleable mediators as the variables that can be acted upon through intervention to elicit a positive change. It is upon this concept that action strategies for a program are developed. Some mediators are difficult or impossible to influence, for example a person's genetic predispositions and thus, are not considered malleable. However, other variables are malleable, for instance, the frequency and quality of interactions between a parent and child. These malleable variables or mediators can be influenced through interventions designed to promote the desired outcomes. The program is then presented in a logic model depicting how the program aims to elicit purposeful change (Fraser & Galinsky, 2010).

### **Step Two: Program Structure and Processes**

Once the program and problem theory were defined, the data were analysed and interpreted to identify an appropriate structure, intervention type, and potential settings for the proposed program. Associations were drawn between positive outcomes of music therapy and their related therapeutic programs, interventions, and settings. Other findings were used to support a rationale for how and where programs and interventions would ideally serve to improve parent/infant attachment in cases of PPD. Attention was also given to developing the program, resources needed for implementation, documentation and measurement protocols, session protocols, staffing and expertise required, caveats and ethical considerations as per the recommendations of Fraser and Galinsky (2010). The proposed program's structure and interventions were linked to and supported by the results of this study's data analysis thus strongly connected to the research outlined in the literature review. A framework for the proposed music therapy intervention program was created based on the findings. Connections to theory were made throughout and explained in the discussion section of the study.

### **Chapter Summary**

This chapter detailed the research methods and techniques used in the data collection, coding, and analysis of this research project. It provided an overview of Fraser and Galinsky's Intervention Research Design (2010) and outlined the steps of this method. It described the data collection procedures from the key terms, search methods, coding of predetermined themes and categories, and the direct content analysis of the data. The following chapter will discuss the results of these methods and techniques in relation to the included literature.



## Chapter 4. Results

### **The Problem Theory**

To begin, the process of identifying the problem, coding risk, protective and promotive factors, and malleable mediators was done through a directed content analysis using predetermined themes (Hsieh & Shannon, 2005). During the process of coded extraction, emergent sub-categories and themes were identified. By interpreting the results of analysis, the main problem was identified as follows: the symptoms of PPD could impair the parent's well-being and relational abilities. Among the impairments identified were withdrawn and/or intrusive behaviors, impaired empathic capacities, compromised ability to cope, temporal disturbances, lack of confidence and self-esteem, vocal impairments, disturbed or negative thoughts, and difficulties responding to infants' cues in a timely manner. These impairments are associated with less frequent and positive parent/infant interactions. The reduced quality and quantity of these interactions likely compromise attachment within the dyad and have a negative effect on infant development. In the short term, a dysregulation style may result which is seen as more negative infant behaviors such as increased crying and disturbed sleep patterns. Negative infant behaviors can exacerbate the situation further by making it harder for the parent to cope which can contribute to negative feelings parents may have towards their infants, their parenting abilities and their parental satisfaction. Furthermore, the long-term consequences of a dysregulation style and/or sub-optimal attachment styles have been identified as poor social, psychological, behavioral and cognitive outcomes for the infant's future. Below are the findings.

### ***Risk Factors***

In Chapter 2, the risk factors for PPD are mentioned including genetic, biological, experiential, socio-economic and psychological factors (Ross et al., 2005). Instead, this Chapter examines the identified risk factors of attachment difficulties in the context of PPD. The analyzed data revealed that the impairments caused by the symptoms of PPD that effect the parent's relational and affectional abilities are the primary risk factors found to cause attachment difficulties and negative outcomes for the infant's short and long-term development. Of the seven articles included for coded analysis, the main sub-categories of risk factors include: parent/infant interactions (5/7); parent's emotional and

psychological well-being (4/7); and parenting skills (4/7). The results also indicate other factors that can exacerbate the problem including various environmental factors (4/7).

Examples of each category are shown in Table 2.

**Table 2.** *Identified Risk Factors of PPD on Parent/Infant Attachment*

<b>Sub- Categories of Risk</b>	<b>Themes</b>	<b>Authors</b>
Parent-infant interactions	Impaired parent-infant interactions, Infrequent positive parent-infant interactions; Fewer opportunities for optimizing infant development.	Abad & Williams (2007); de l'Etoile (2012); de l'Etoile & Leider (2011); Levinge (2011); Robertson & Detmer (2019).
Parent's emotional and psychological well-being	Compromised parental emotional and psychological well-being; Negative attitude towards infant.	Corey et al.; de l'Etoile & Leider (2011); Levinge (2007); Robertson & Detmer (2019).
Parenting skills	Lack of awareness of infant behaviors; Impaired communication, Negative history of parent's early childhood.	De l'Etoile (2012); de l'Etoile & Leider (2011); Levinge (2011); Oldfield & Bunce (2001).
Environmental Factors	Lack of support, Lower socioeconomic status, Parents life circumstance (marital status, mother parity etc.).	Abad & Williams (2007); Levinge (2011); Oldfield & Bunce (2001); Robertson & Detmer (2019).
Other	Male gender of infant, Difficult pregnancies and deliveries	Corey et al.; de l'Etoile & Leider (2011); Oldfield & Bunce (2001).

### ***Protective and Promotive Factors***

Factors identified as protecting against parent/infant attachment difficulties or factors promoting repairs of compromised attachment were found in the included literature and categorized into these main categories: Positive parent/infant interactions and communication (7/7); parenting skills (4/7); good parental mental health and well-being (4/7); support (4/7), including emotional, social, spousal, and professional support with prevention programs being highlighted as effective mitigating strategies. Strategies found to reduce the negative effects of PPD, promote attachment and negate poor outcomes included interaction coaching and developing the parent's coping and parenting skills (Table 3).

**Table 3.** *Identified Protective Factors for Attachment in the Context of PPD*

<b>Sub -Categories</b>	<b>Themes</b>	<b>Authors</b>
Positive Parent-infant interactions & communication	<ul style="list-style-type: none"> <li>• Gaze</li> <li>• Vocalizing</li> <li>• Touch</li> <li>• Comforting movement</li> <li>• Sensitive responses</li> <li>• Affectionate interactions</li> </ul>	Abad & Williams (2007); Corey et al (2019); de l'Etoile (2012); de l'Etoile & Leider (2011); Levinge (2011); Oldfield & Bunce (2001); Robertson & Detmer (2019).
Parenting skills	<ul style="list-style-type: none"> <li>• Awareness of infant behaviors and needs</li> <li>• Knowledge and ability in modulating infant arousal</li> <li>• Use of caring routines</li> </ul>	Abad & Williams (2007); de l'Etoile (2012), Oldfield et Bunce (2001); Robertson & Detmer (2019).
Parent psychological & emotional well-being	<ul style="list-style-type: none"> <li>• Positive self-esteem</li> <li>• Knowledge and use of coping strategies and stress management techniques</li> <li>• Positive thinking</li> <li>• Parenting confidence</li> </ul>	Corey et al. (2019); de l'Etoile & Leider (2011); Levinge (2011); Oldfield & Bunce (2001); Robertson & Detmer (2019)
Support	<ul style="list-style-type: none"> <li>• Spousal</li> <li>• Professional</li> <li>• Peer</li> <li>• Emotional</li> </ul>	Abad & Williams (2007); Corey et al (2019); Levinge (2011); Robertson & Detmer (2019)

***Identified Problems***

The main problem identified through analysis was the negative effect that postpartum depression has on the parent's relational abilities and well-being, and consequently on infant behaviors and infant developmental outcomes. The central problem categories identified across the seven included documents are 'compromised parent behaviors' (6/7), 'compromised parental well-being' (5/7) and 'risk to infant' (7/7). (Table 4)

**Table 4.** Identification of the Main Problems Cause by PPD across Data Sources

<b>Sub-Categories</b>	<b>Authors</b>
Compromised Parent Behaviors	Abad & Williams (2007); de l'Etoile (2012); de l'Etoile & Leider (2011); Levinge (2011); Oldfield & Bunce (2001); Robertson & Detmer (2019)
Compromised Parental Well-Being	Abad & Williams (2007); Corey et al. (2019); Levinge (2011); Oldfield & Bunce (2001); Robertson & Detmer (2019)
Risk to Infant	Abad & Williams (2007); Corey et al. (2019); de l'Etoile (2012); de l'Etoile & Leider (2011); Levinge (2011); Oldfield & Bunce (2001); Robertson & Detmer (2019),

The findings show various ways that the quality and frequency of parental interactions are hindered by the symptoms of PPD and how these hindrances are associated with compromised attachment, negative infant behavioral responses and disoriented infant regulation styles. (Table 5)

**Table 5.** Themes related to PPD per Problem Sub-category

<b>Compromised Parent Behaviors</b>	
<i>Withdrawn behaviors:</i>	<i>Intrusive behaviors</i>
<ul style="list-style-type: none"> <li>• insensitive</li> <li>• non-receptive</li> <li>• poor visual engagement</li> <li>• flat affect/state of unaliveness</li> <li>• impaired ability to empathize</li> <li>• reduced pleasurable interactions</li> <li>• difficulties bonding and interacting</li> <li>• lack of awareness of infant behaviors</li> <li>• less affection and contact</li> <li>• less likely to repair interrupted interactions</li> <li>• reduced synchrony</li> </ul>	<ul style="list-style-type: none"> <li>• increased negative interactions</li> <li>• impatient</li> <li>• impulsive</li> <li>• angry, irritability</li> <li>• feelings of resentment</li> <li>• blaming</li> </ul>
<b>Compromised parental well being</b>	
<ul style="list-style-type: none"> <li>• inability to adjust/enjoy role as parent</li> <li>• impaired coping abilities</li> <li>• low self-esteem</li> <li>• low confidence in parenting abilities</li> <li>• negative thoughts</li> </ul>	<ul style="list-style-type: none"> <li>• low parental satisfaction</li> <li>• stress</li> <li>• anxiety</li> <li>• may present the infants as the problem</li> </ul>
<b>Impaired communication</b>	
<ul style="list-style-type: none"> <li>• poor visual engagement</li> <li>• flat affect</li> <li>• vocal impairments</li> </ul>	<ul style="list-style-type: none"> <li>• lack emotional expressivity</li> <li>• less speaking to infant</li> </ul>
<b>Risk to infant</b>	
<i>Short-term</i>	<i>Long term</i>
<ul style="list-style-type: none"> <li>• poor bonding/attachment</li> <li>• poor regulation of arousal and attention</li> <li>• increased crying</li> <li>• less likely to maintain interactions</li> <li>• less experiences in attention regulation, arousal modulation, and affective communication</li> <li>• dysregulation profile</li> <li>• sleep disturbances</li> <li>• elevated stress hormones</li> </ul>	<ul style="list-style-type: none"> <li>• higher risk for conduct problems</li> <li>• increased risk for depression</li> <li>• increased risk of emotional and behavioral disorders</li> </ul>

## **The Program Theory**

### ***Malleable Mediators***

The main categories of malleable mediators identified through the analysis of risk, protective and promotive factors are: Parent behaviors; Parenting skills; Parent well-being; Parent/infant interaction; and Support. Thus, the program will address these variables to achieve the positive changes needed to strengthen and improve attachment, parenting skills, and infant outcomes.

### ***Action Strategy***

The action strategies to affect positive change of the malleable mediators include dyadic and group music therapy interventions combined with interaction coaching to support the parent in learning and using appropriate and affectional parent/infant interactions inside and outside of the music therapy sessions; provide parents with relaxation, stress management and coping tools; develop the parent's awareness of infant behaviors and needs; develop the parents confidence in their parenting abilities; foster the parents self-esteem; create a safe space for the parent/infant to explore and practice new skills; encourage peer bonding and support among participants; and referrals for other services as needed. Music therapy interventions using voice, movement, touch, gestures, gaze, play and relaxation are used to achieve these above actions. Therapy techniques include modeling, validating, supporting, mirroring, reflecting, redirecting, and reinforcing. Non-musical interventions used include verbal processing; disseminating parenting information; broadening the client's support network of service providers and community resources, and giving referrals for other services.

### ***Theory of Change***

Through music therapy, impairments caused by PPD can be addressed and consequences mitigated by supporting parents in learning, practicing, and using effective communication, appropriate interactions, parenting and coping skills. Musical interactions combined with coaching and a therapeutic alliance provide parents and infants the support and skills needed to promote and strengthen early attachment and mitigate the consequences associated with PPD. Table 6 details the logic model (Fraser & Galinsky, 2010) for a music therapy program for PPD and attachment.

**Table 6.** *Logic Model for Music Therapy and the treatment of Postpartum Depression*

<b>Program inputs</b>	
<ul style="list-style-type: none"> <li>• Funding</li> <li>• Materials</li> <li>• Certified music therapist and support staff</li> <li>• Volunteers</li> <li>• Setting</li> </ul>	<ul style="list-style-type: none"> <li>• Resource development</li> <li>• Program structure</li> <li>• Assessment, evaluation and screening documents</li> <li>• Program manual and supporting information</li> </ul>
<b>Program interventions (Actions)</b>	
<b><i>Vocal interventions:</i></b>	<b><i>Related short-term goals</i></b>
<ul style="list-style-type: none"> <li>• ID singing</li> <li>• Lullaby</li> <li>• Use of songs</li> <li>• vocalizing</li> <li>• Play/action songs</li> <li>• Group singing</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen positive parent-infant interactions</li> <li>• Develop parent's abilities to communicate emotional and affectional content</li> <li>• Increase repertoire of positive interaction experiences to use in &amp; outside of sessions</li> </ul>
<b><i>Music &amp; movement:</i></b>	<b><i>Related short-term goals</i></b>
<ul style="list-style-type: none"> <li>• Moving to music</li> <li>• Rocking</li> <li>• Dancing</li> <li>• Action songs</li> <li>• Stretching to music</li> </ul>	<ul style="list-style-type: none"> <li>• Increase positive parent-infant interactions</li> <li>• Strengthen parent's ability to play</li> <li>• Develop parent's ability to stimulate and soothe infant</li> </ul>
<b><i>Receptive interventions:</i></b>	<b><i>Related short-term goals</i></b>
<ul style="list-style-type: none"> <li>• Music listening for relaxation</li> <li>• Quiet time music (f2F)</li> <li>• Guided imagery through music</li> <li>• Guided relaxation to music</li> <li>• Breath entrainment to music</li> </ul>	<ul style="list-style-type: none"> <li>• Improve Parent's ability to relax</li> <li>• Improve parent's coping skills</li> <li>• Increase positive parent/infant interactions</li> </ul>
<b><i>Clinical improvisation:</i></b>	<b><i>Related short-term goals</i></b>
<ul style="list-style-type: none"> <li>• Vocal and/or instrumental</li> </ul>	<ul style="list-style-type: none"> <li>• Increase positive parent-infant interactions</li> <li>• Encourage exploration</li> <li>• Develop awareness of infant responses</li> </ul>
<b><i>Non-musical interventions:</i></b>	<b><i>Related short-term goals</i></b>
<ul style="list-style-type: none"> <li>• Interaction coaching</li> <li>• Parenting information and tools</li> <li>• Support network development</li> <li>• Referrals as needed</li> </ul>	<ul style="list-style-type: none"> <li>• Develop parenting skills</li> <li>• Develop awareness of infant needs and behaviors</li> <li>• Increase coping skills</li> <li>• Increase support network</li> </ul>
<b>Program long-term goals</b>	
<ul style="list-style-type: none"> <li>• Strengthen parent-infant attachment</li> <li>• Improve infant development outcomes</li> </ul>	

### **The Program Manual**

The intention of this program is to support and assist parents who are struggling with symptoms of PPD. This program is not intended to replace medical and/or psychological treatment of PPD, but to work in combination with a multidisciplinary approach/team as it could be damaging for parents with moderate to severe symptoms of depression to overlook medical treatment.

### ***Resource Development***

The scope of this paper does not include an analysis of what a program like this would cost. This would be done prior to implementation of the program in one of the later steps of Fraser and Galinsky's IRD (2010). Future investigation into this area should consider where to get funding for the project, how much materials will cost, how much the wages of employed personnel will cost, and any other expenses that might be incurred. The cost analysis process must involve a detailed list of required materials and expenses including office supplies, instruments, space requirements, props, and materials to disseminate information about the program, wages, utilities, etc. As well, during the resource development phase, a network of connections to community organisations, service providers, and health professionals must be made to inform them about the program and to facilitate referrals to and from the other services for people in need. Furthermore, protocols on referrals, documentation, and session structures must be established before implementation. Finally, a repertoire of music therapy and musical resources must be developed in advance including appropriate songs and musical pieces with special consideration given to cultural diversity and a variety of musical preferences. Any resources that will be given to the clients to assist in the transfer of skills to the home should be developed and produced in advance, for example a play list of musical resources like lullabies, play songs, and relaxation music.

### ***Intervention Level and Type***

The strongest support for intervention level was found for group music therapy consisting of a number of parent/infant dyads (Abad et al., 2007; Levinge, 2011; Oldfield et al., 2001; Robertson & Detmer., 2019). Group therapy has shown to be a supportive approach (Abad et al., 2007; Robertson & Detmer., 2019) and proved to be an effective intervention for therapists to model positive interactions, and for parents to practice the



modeled interactions. Peer support and learning from peers were noted as added benefits to this type of intervention level (Abad et al., 2007). However, Levinge (2011) explains that having dyadic sessions prior to joining groups can give the therapist a chance to know their clients better and create a deeper therapeutic alliance as well as prepare parents who may be apprehensive about joining group therapy. Bargiel (2004) supports these ideas in her theoretical considerations of dyadic music therapy to promote attachment for at-risk infants. Following these recommendations, the program structure outlined below proposes that the initial two sessions are dyadic before the group sessions begin. In addition, it proposes that a follow up session be done with each dyad alone after a period of four weeks to assess the parent's need. Furthermore, a time period of several weeks before this final session would allow for an evaluation of the program outcomes after an elapsed period of time.

### ***Program Setting***

The proposed setting for this program would be a hospital, medical center, or a social outreach institution. This type of setting could be advantageous because many parents of newborns have frequent post-natal appointments at hospitals or medical centers. Referrals could be made easily within the institution, and ideally parents could arrange their medical appointments to coincide with the days of their therapy sessions.

### ***Session Leaders and Support Staff***

The session leader must be a certified music therapist with an understanding of attachment theory. Ideally two music therapists can collaborate on this project to help with modeling interaction behaviors, provide added support and increase the observations made in sessions. The support staff may include music therapy master level stagiaires, people with knowledge of infant care, and volunteers. Volunteers will help to provide snacks and beverages after the sessions to build in a social time as an added opportunity for parents to make connections with peers. As well, it may be useful to have volunteers to watch the babies during relaxation interventions especially designed for the parents.

### ***Protocols***

In developing various protocols for the program, the below suggestions have been extracted through the data analysis of included literature.

**Referrals.** Referrals to the program can be given in written form or verbally by health workers, social and family services, pediatric centers, as well as self-referrals. The music therapist will create an informative pamphlet and poster about the program detailing its purpose, contact info and referral process. The pamphlet and poster will be provided to the interdisciplinary team as well as relevant community and medical centres, doctors, and service providers who work with the population. Reasons for referrals can include emotional support, support for parent/infant attachment, coping, managing symptoms of depression, and support in adjusting to new role as parent.

**Documentation.** Once the referrals are investigated and candidates give informed consent to participate in the program, an assessment form is completed. The assessment process includes an intake of background information, musical preferences, and life circumstance. As well, in collaboration with the parent, the music therapist assesses the needs, strengths and difficulties of the parent-infant dyad to identify what type of support is needed. The assessment is carried out both by filling out a form with the parent and through clinical observations of the parent-infant dyad made by the music therapist during the first two sessions. Sessions are planned in advance; however, flexibility is needed to address issues and themes as they emerge. Sessions are documented by brief reflections made by the music therapists and by the parents following each session. Interdisciplinary and/or psychosocial team meetings are recommended on a biweekly basis to communicate the progress and needs of each dyad. Referrals to others services are provided to the program participants throughout as needed. Short feedback forms are given to participants to fill out each week. As well, an anonymous online survey with open-ended questions is sent for participants to complete once the program sessions have ended. Feedback from participants serves to help the music therapist understand the strengths and challenges of the program and the types of improvements needed. The feedback may also reinforce the participants' awareness of their progress related to the skills developed in the program.

***Phase 1: Assessment***

**Sessions 1- 2:** Private Parent-infant Dyad; 1 session/week (1.5 hour)

***Goals and objectives:***

1. Establish a therapeutic alliance through developing a trusting client/therapist environment.
2. Establish individualized goals for the parent-infant dyad in collaboration with the parent.
3. Introduce the parent to relating musically with their infant by modeling, teaching and sharing musical experiences.
4. Prepare the parent-infant dyad for the group experience by familiarizing them with various types of interventions that will be used.

***Parent-infant dyad session structure:***

1. Greeting song
2. Exploration and practice of play/movement songs
3. Clinical improvisation with instruments
4. Exploration and coaching on the use of lullabies and play songs
5. Re-writing personalized lyrics to a lullaby
6. Relaxation/quiet together time to music
7. Review and discussion

***Handouts:***

1. Play list of resources for home use and practice.
2. Lyric sheets for pre-selected lullabies and play songs
3. Information pamphlet about the group program
4. A list of contact info of community and health resources

***Phase 2: Introduction to parent-infant group music therapy***

**Group Sessions 3-6:** 4-6 parent-infant dyads, 1/week (1.5 hours)

These first few sessions are kept light and informative and establish a safe environment for the group. The focus is on providing parents with new skills and tools. The music therapist does frequent modeling of the interventions and slowly reduces the amount of modeling as the parents gain confidence in their skills. The therapist focuses on validating and reinforcing the positive parent-infant interactions observed in the sessions.

The first session in this phase includes introductions and a welcome as well as an explanation of the program and program philosophy prior to following the session structure outlined below.

***Handouts:*** Song book to be used in group sessions.

***Goals and objectives:***

1. Strengthen the parent's knowledge and use of positive parent/infant interactions.
2. Strengthen the parent's ability to express themselves and communicate emotional content.
3. Extend the parent's network of support.
4. Support parent's well-being.

***Session structure:***

1. Greeting song
2. Group singing (songs exploring themes)
3. Modelling/practicing play songs
4. Music and movement
5. Group improvisation with instruments
6. Lullaby and infant directed singing
7. Musical relaxation and quiet time
8. Review and feedback, parenting information and discussion
9. Optional post-session social tea and snacks

***Phase 3: Becoming the Expert***

**Group Sessions 7-9:** 4-6 parent-infant dyads; 1/week (1.5 hours)

During these sessions, the amount of modeling by the therapist is provided only as needed. These sessions focus on strengthening the relational bond between parents and infants, extending the parents' support systems, transferring of skills, allowing parents to become the leaders in session interventions by sharing their own personalized songs, self-

affirming their parenting abilities and strengthening their awareness of infant behaviors. Parents practice validating their own and their peers' positive interactions; understanding and observing infant behaviors; exploring new ways of relating and playing, transferring skills and developing strategies to use at home.

***Goals and objectives:***

1. Develop parent's awareness of infant behaviors and needs
2. Strengthen parent's ability to respond appropriately to infant behaviors and needs
3. Support parent's self-esteem and confidence
4. Support parent's well-being

***Session Structure:*** Same as in Phase two with variations of interventions and more leadership from parents

***Phase 4: Insights and Closure***

**Group Sessions 10-11:** 4-6 parent-infant dyads; 1/week (1.5 hours)

These sessions are a review and discussion of gained insights and skills. Any themes or areas of interest that have emerged through the sessions can be more fully explored here.

As well, the sessions are geared towards closure. The parents are encouraged by the music therapist to share their personalized songs and/or the acquired techniques and music interventions that they use to soothe and/or stimulate their infants. The therapist focuses on validating and reinforcing the positive parenting moments observed in the session. The therapist encourages peer support by providing opportunities for peers to give each other positive feedback.

***Goals and objectives:***

1. Strengthen parent's awareness of their own progress
2. Support parent's self-esteem and confidence
3. Strengthen peer support

***Sessions 10-11 structure:***

1. Greeting song
2. Group singing (songs exploring themes-closure)
3. Sharing of play songs/stimulating techniques followed by discussion
4. Sharing of lullaby/infant direct singing and calming techniques followed by discussion
5. Group improvisation with instruments
6. Musical relaxation and quiet time
7. Review and feedback, parenting information and discussion
8. Optional post-session social tea and snacks

**Session 12:** Follow up Private Session for Dyad; 1 session (1.5 hours)

This final session is an opportunity to follow up and reassess each parent-infant dyad privately. This is done four weeks after the last group session to gain insight into how the parents have progressed and how they are managing after an elapsed period of time. The therapist focuses on validating parents and reinforcing their continued use of their newly acquired parenting skills. This session is important in determining if the parent needs continued therapeutic support and to make referrals as appropriate.

***Goals and objectives:***

1. Encourage continued use of skills and interventions learned
2. Provide continued support for parent-infant dyad
3. Reinforce parent's self-esteem and confidence

**Caveats and Considerations:**

It is worth mentioning that during the analysis of literature used to develop this program, certain caveats and contraindications were identified. Levinge (2011) warns that parents experiencing depression may be fragile and if not managed sensitively, the modeling done by the therapist may lead the person to feel competitive or may wound their self-esteem further. The therapist must be very sensitive and aware of the parent's reactions and must validate the parent often to demonstrate that they are not a threat. Oldfield

(2001) sites similar instances in her groups, warning that issues of control may arise between the therapist and clients. As well, Corey (2019) indicated the exclusion of highly agitated and/or psychotic parents who would need more specialized support in psychiatry; if allowed into the program they may destabilize and disrupt the members of the group making it difficult to create the safe space needed for therapy. Furthermore, to provide a program that is inclusive, gender, ability and cultural differences must be considered. An example of a cultural difference that could impact how behaviors are interpreted was mentioned by de l'Etoile (2012). The example concerned differences in the use of gaze between parents and infants, explaining that gaze is used more frequently in western cultures than in African and eastern cultures. The therapist should inform themselves on the cultures and gender identities and abilities of their clients in advance to ensure the establishment of an inclusive environment before beginning the group work.

### **Chapter Summary**

This chapter explored key considerations in designing therapeutic programming, based on original research to determine: (1) the problem theory and theory of change (2) the program theory, including resource development, protocols, optimal settings, intervention levels and types, program duration and frequency, and session structures. From this data, the manual for the program was developed and considerations that have emerged were highlighted. The following Chapter discusses ideas that emerged through the process of researching this topic, the limitations of the study, and areas for future research.

## Chapter 5. Discussion

This chapter offers some reflections and discusses some of the salient points of the research presented. It also contemplates the future implications of this research study and raises questions that emerged in the process of creating this intervention research design.

### Reflections on Findings

The results show that parents who are suffering from PPD are compromised in the area of communication and affect. They need support for their own psychological well-being and to ensure that their infant is receiving enough opportunity to practice and develop their regulating abilities as well as to ensure a healthy attachment bond. From seeing the success of early intervention music therapy programs like Sing & Grow (Abad et al., 2007), it is a wonder that more governments have not invested in these types of programs.

The literature presented in this research study highlights the importance of developing social programs for parent-infant dyads to support the parent's well-being and for the welfare of the future generation. The symptoms of depression and the hectic schedule of caring for an infant can make it hard to find parents who are willing to attend such programs. One of the issues with parent-infant programs found in the research reviewed was the difficulty in recruiting parent-infant dyads to join the groups. Furthermore, many of the parents who agreed to participate were inconsistent with attendance and there was a high drop-out rate (Abad & Williams, 2007). A program designed for parents during the postpartum period would need to be as little burden to the parent as possible. It was recommended that the program setting be in a hospital or medical center where postpartum families go for various check-ups and immunizations. This may add an element of convenience and familiarity with the environment for families. If parents could arrange their medical appointments on the same days as the program, it might contribute to better over-all attendance. As well, having well-vetted volunteers to help with infants when needed and provide treats in a separate area would be an ideal contribution to the program. Parents could arrive early for coffee or tea, or stay after for social time with the other participants. A grandparent program for retired



individuals who want to volunteer could add an additional layer of support and create a warm and inviting place for parents who are struggling while at the same time offer a meaningful and rewarding volunteer opportunity for people who have time and want to help.

In the process of developing this research project, I had certain thoughts and feelings that seemed to recur. Most importantly, the need to stress that people who struggle with depression are not bad parents. They may however, have more challenges and difficulties than parents who are not depressed. Depression is a debilitating illness, not something that is chosen nor necessarily obvious or understood by the person affected. Seeking treatment should be encouraged on a societal level especially when life circumstances are critical as is the case during the postpartum period. My personal experiences highlighted how some clinicians can minimize symptoms as being *typical* which can further complicate receiving proper treatment. Programs such as the one presented in this study could help to destigmatize PPD and improve awareness about the illness within the community.

For these reasons, it is imperative to provide support to parents who are struggling with symptoms. Depressed parents may have difficulties asking for help, in part due to feelings of shame, but also because they are overwhelmed. They may not have the ability to see their situation with clarity given the insomnia, anxiety and brain fog that can be a part of depression. This is why it is important that more screening for PPD be done to flag parents that may need support.

### **Areas for Future Study**

This research project could provide useful information for music therapy students learning to work in pediatrics, mental health and family systems. It could also serve as a resource for music therapists working with this clientele. Furthermore, it could provide the basis for a subsequent pilot project if further developed with later steps of Fraser and Galinsky's intervention design (2010).

Future studies in the area of music therapy and PPD could delve more deeply into specific interventions and examine their uses in the context of music therapy. For example, there were several studies discussed in the literature review that were not included in the coded analysis because they lacked a music therapist. Many showed

interesting results as to how music and movement could help improve vocal affect, increase meaningful parent/infant interactions, and improve parental satisfaction (Puyvelde et al., 2014; Vlismas et al., 2013). Other such studies have examined the effects that group singing has on PPD and have provided evidence that group singing can reduce self-reported symptoms of depression and create a sense of belonging (Perkins et al., 2018; Reilly et al., 2017). As well, some studies support the use of receptive music in the treatment of PPD with results indicating a reduction in self-reported symptoms of depression (Yang et al., 2019). All of these interventions could be investigated further in music therapy studies to continue to inform and promote this area of practice. In fact, in the case of all of the studies mentioned above, the authors state that more research is needed. A pilot project of the nature herein outlined would be a great step toward showing what a well-rounded evidence-based music therapy program could do for parents and infants in the grips of PPD. There is certainly room for continued development.

### **Limitations**

Limitations include the inadequate amount of relevant research available in the field of music therapy that pertains to PPD as well as the researcher's lack of experience with this type of research. Furthermore, many studies found in the process of searching for literature use the term music therapy in their title or key words, but upon closer investigation the term is misused and therefore the data cannot be included as music therapy research.

### **Conclusions**

There is very little research done on music therapy in the context of postpartum depression, which is surprising given the musical nature of early caring and communication. As a music therapist, I believe that music therapy would be well suited to treat PPD. The act of singing to an infant is natural and widespread, and given the relational aspects of music and the similar relational qualities that are required for parenting interactions it seems that music therapy would be an obvious choice for treating attachment difficulties in this context. This study provides the first steps in developing this type of program. It was designed with careful examination and analysis of the existing literature and thus is a proposal built from evidence-based data. I hope more

work and research will be done in this area of music therapy to enhance and strengthen the existing findings and create more prospects for government funded programs of this nature. That being said, there is a good base of research to start from thanks to the work of leaders in the area that are highlighted in this paper.

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