

# CAN MOTHERS JUST ‘SING THEIR TROUBLES AWAY’?: AN INTEGRATIVE REVIEW OF SINGING AND MATERNAL MENTAL HEALTH

*Mães podem “espantar seus males cantando”?:  
Uma revisão integrativa de canto materno e saúde mental*

Elizabeth Brown Vallim Brisola<sup>1</sup>

Beatriz Ilari<sup>2</sup>

---

Artigo encaminhado: 15/11/2020

Artigo aceito para publicação: 30/04/2021

**ABSTRACT:** Although motherhood is often associated with expectations of happiness and fulfillment, for many women it actually brings anxiety and distress. As women engage in daily tasks of childcare, they commonly use music and singing to communicate with and regulate their infant's emotions. Though not widely disseminated in the mental health field, a growing number of studies, mental health projects, and interventions have addressed the psychosocial and cultural aspects of maternal singing. Scholars have documented its effects and benefits, and revealed its value as a non-pharmacological mental health tool for both mother and infant. The present article reviews literature from the past 10 years on maternal singing to infants, with the aim of understanding and describing its impact on maternal mental health. Seventeen publications that met our pre-established criteria draw attention to the potential of maternal singing both as a palliative and preventive measure for individual mothers and for mothers in group programs, including those who are healthy or suffering from postnatal depression. These studies point to singing as a tool to deepen mother-infant bonds; as a vehicle of emotional expression; as a mnemonic channel for memories of past experiences; and as a mechanism to help mothers engage positively with daily chores and childcare, giving them a sense of achievement and increased self-esteem. Group singing studies point to mothers feeling connected with others, learning parenting "repertoire", and changing their "tempo". Several suggestions are presented to incorporate singing to already existing programs and to the daily care of infants, as well as for further research.

---

<sup>1</sup> Doutora em Psicologia (Pontifícia Universidade Católica de Campinas). St. Edward's University, Office of Graduate and Professional Studies, Texas, EUA. Psicóloga e pesquisadora. E-mail: ebrisola@stedwards.net

<sup>2</sup> Doutora em Educação (McGill University). University of Southern California (USC), Department of Music Teaching and Learning, Thornton School of Music, California, EUA. Professora e pesquisadora. E-mail: ilari@usc.edu

**Keywords:** Maternal Singing. Mother-Infant Relationship. Mental Health. Musical Mothering. Recovery.

**RESUMO:** Apesar da maternidade ser muitas vezes associada a expectativas de felicidade e realização, para muitas mães, na verdade, traz ansiedade e sofrimento. À medida que as mães se engajam nas tarefas diárias de cuidados ao bebê, comumente usam música e cantam para comunicar com eles e regular suas emoções. Apesar de não ser amplamente disseminados na área de saúde mental, um número crescente de estudos, projetos de saúde mental e intervenções têm endereçado os aspectos psicossocial e cultural do canto materno. Estudiosos descrevem seus efeitos e benefícios e revelam seu valor como um instrumento não-farmacológico de saúde mental para ambas mãe e bebê. O presente artigo é uma revisão de literatura dos últimos 10 anos sobre o cantar materno para bebês, com o objetivo de compreender e descrever seus impactos na saúde mental das mães. As dezessete publicações que atenderam a critérios pré-estabelecidos de seleção, atentaram para o potencial do canto materno tanto como uma medida paliativa quanto preventiva para mães, individualmente e em programas em grupos, incluindo mães saudáveis e mães sofrendo de depressão pós-parto. Esses estudos apontaram para cantar como um instrumento para aprofundar o vínculo mãe-bebê; como um veículo de expressão emocional; como um canal mnemônico para memórias de experiências musicais anteriores; como um mecanismo de ajuda para mães se engajarem positivamente com atividades diárias de cuidado ao bebê, dando a elas uma sensação de realização e de aumento da autoestima. Estudos de canto materno em grupo apontam para mães sentindo-se próximas às outras, aprendendo um “repertório” materno e mudando o seu “andamento”. Várias sugestões são apresentadas para incorporar o canto materno em programas já existentes e no cuidado diário aos bebês, bem como para futuras pesquisas na área.

**Palavras-chave:** Canto Materno. Relacionamento Mãe-Bebê. Saúde Mental. Maternidade Musical. Recovery.

## 1 INTRODUCTION

Becoming a mother is a process that involves challenges and joys. It is an opportunity to learn and grow, and to participate in the growth of another human being in a decisive way. Motherhood is also a significant life event (Blom, 2015) that requires adaptation and new responsibilities, as it brings changes to one's body, self-concept, relationships and social roles (Afiyanti & Solberg, 2014; Zelkowitz & Papageorgiou, 2017). Though generally associated with expectations of happiness and fulfillment, for many women motherhood brings

anxiety and distress (Zelkowitz & Papageorgiou, 2017), and feelings of loss of control over their lives (Darvill et al., 2008). “Dug-down and long-forgotten feelings seem to come to life, while others are experienced for the first time. In crossroads such as these, a mother can be flung in the direction of greater autonomy or dominated by ancestral anxieties” (Granato & Aiello-Vaisberg, 2009, p. 400). Therefore, a mother’s resilience and positive adaptation during this period of rapid change is essential (Friedeman et al., 2010), since there are immediate consequences of her mental health to herself, her family and to the infant's wellbeing (Blom, 2015; Carolan et al., 2012a; Gudmundsdottir & Gudmundsdottir, 2010).

In the first few weeks following delivery it is common for women to experience “the baby blues” due to hormonal fluctuations. The number of women with such experience is high; in the United States alone, up to 80% of women have been found to experience “the baby blues” (Mental Health America, 2020). This common adjustment reaction is not as long lasting as postpartum depression, usually ceasing one or two weeks post-delivery, and does not impair mothers’ care of their infant (Bass & Baum, 2018). Women can feel tearful, irritable, easily frustrated, unhappy, worried, and exhausted (Banasiewicz et al., 2020).

According to the World Health Organization (WHO, 2020), 13% of women giving birth will experience some form of mental disorder, and in developing countries up to 19.8% will be affected. Maternal mental health<sup>3</sup> and illness have sparked the attention of professionals and researchers from a variety of areas (e.g. psychology, pediatrics, nursing, psychiatry, and midwifery) who address, among other aspects, the effects and consequences of maternal wellbeing on mothers, infants, and families.

According to Alderdice et al.’s (2013) systematic review, a variety of psychological, psychosocial, and hormonal interventions have been developed to treat postpartum depression: antenatal classes, interpersonal psychotherapy,

---

<sup>3</sup> Mental health in this paper refers to the definition by the World Health Organization: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” and mental health promotion refers to “actions that improve psychological well-being” (World Health Organization, 2018).

lay support, telephone-based peer support, postnatal home visits, social support interventions, hormonal prevention, dietary interventions, and counseling. Although music and music therapy have long been used in the treatment of depression in women (Gaebel et al., 2020), these stated interventions to improve maternal mental health do not include music. The same can be said about other reviews that do not mention music or singing as strategies to enhance maternal wellbeing (Barlow et al., 2010; Rubashkin et al., 2018; Song et al., 2015). Perhaps this is partly due to the fact that playing music and singing to one's child is a commonly practiced activity (Trehub & Gudmundsdottir, 2015), and is therefore not seen as an intervention tool. Alternatively, this might be the case because music is not widely known as and used for its prophylactic and therapeutic properties (Padjen, 2020).

Regardless of the reasons, considerable research has already been done on the prophylactic and therapeutic effects of music in general, establishing its relation to health and wellbeing across the lifespan (MacDonald, Kreutz & Mitchell, 2012). Singing has been identified as a means “to enhance wellbeing and reduce or prevent depression in adults across the lifespan” (Daykin et al., 2017, p.44).

Mothers' use of music, and specifically of singing during the vulnerable first year after birth, has been researched since at least the 1990's (Trehub, 1999; Trehub & Gudmundsdottir, 2015) by scholars from different fields. Singing has been described as a very helpful parenting resource (De L'Etoile, 2012) as mothers deal with day-to-day mothering, including “feelings of failure, frustration, tension and guilt” (Baker & Mackinlay, 2006, p. 149). Frequently associated with improved bonding (Perkins et al., 2018; Cevasco, 2008; Edwards, 2011; Persico, 2017), singing has also been linked to a decrease in maternal stress and infant crying (Reilly et al., 2019).

In the last 10 years, research into health benefits of music has rapidly expanded (Fancourt et al., 2014). But, in spite of the increased interest in the health benefits of singing (Clift, 2012; Reagon et al., 2016) and in the role of art and music in wellbeing (Daykin et al., 2017), more evidence is needed to support policy and practice (Clift, 2012). Methodological issues also need to be discussed and refined, and there is a clear need for a systematic theoretical model to frame future research.

As noted, there is a growing body of research on maternal singing using a wide range of methods to examine singing practices of healthy and unhealthy mothers (Brisola & Cury, 2018), but their main foci have been the effects of singing on the infants (Trehub, 2017), not on the mothers. These works address the acoustic characteristics of maternal vocalizations, and describe the security, stimulation, and soothing it provides for the infant, enhancing their bond (Trehub, 2017).

While these works have enabled the development of a broad scope of knowledge on maternal singing, they also have impeded a smooth integration of the knowledge that is accumulating (Elmer, 2011), in the sense that there are several gaps in information, such as the consequences of maternal singing on maternal arousal and mood (Trehub et al., 2018). Aside from sparse literature reviews in dissertations and theses, at the time of writing we found no reviews available with a focus on maternal singing and mental health. Such knowledge is decidedly important for the health and wellbeing of mothers and their infants across the world. A vast literature already affirms that music is mood enhancing and assists in psychological functioning. However, more robust data is needed to affirm that there is a causal relation between singing and increased mental health. In the current context of the COVID-19 pandemic, when maternal stress is particularly high (Davenport et al., 2020; Institute for Translational Neurosciences, 2020) such knowledge can also support maternal interactions and mental health.

The present review aims to help bridge current information on maternal singing and mental health by integrating and synthesizing studies published between 2010 and 2020, with particular attention to mothers. Our effort was to clarify what is known so far regarding this theme and address the question: can mothers just 'sing their troubles away'?

## **2 METHOD**

An integrative review was chosen for its potential to combine studies from diverse methodologies, integrating their results (Whittemore & Knafl, 2005), arriving at synthesis of what is known in a certain field, and pointing to possible gaps (Mendes et al., 2008). Specifically, we addressed an emerging topic "that

would benefit from a holistic conceptualization and synthesis of the literature” (Torraco, 2016, p. 410).

## **2.1 Search strategy and selection criteria**

The present review followed six phases: 1. Identifying a theme and selecting research questions; 2. Establishing criteria of inclusion and exclusion of material; 3. Defining information to be gleaned from each study; 4. Evaluating and summarizing each study included in the review; 5. Interpreting results; 6. Presenting results or synthesis of knowledge (Souza et al., 2010).

Studies were selected from 6 databases (Pubmed, bsco, lilacs, periódicos capes, catálogo de teses e dissertações capes, and scielo) between March 24 and 31, 2020, using the following combined keywords: ‘singing’, ‘mother’ or ‘maternal’, ‘infant’ or ‘baby’, ‘mental health’ in the English language, as well as in their corresponding words in Portuguese. We chose Portuguese due to our familiarity with the language and a desire to broaden our investigation. The search encompassed books, theses and dissertations, and articles published in peer-reviewed journals in the past 10 years. To complement and expand these results we also consulted results of previous searches from related projects, and went in search of recent publications made available on ResearchGate.net.

An initial search yielded 3,734 hits. A first screening limited the search of ‘singing’ as subject. An examination of titles resulted in the elimination of publications with populations other than mothers (e.g. non-humans, elderly) and of historical or literary material. Repeated entries were also eliminated. The remaining 163 publications’ abstracts were analyzed. Next, we eliminated publications that did not meet the following inclusion criteria: 1) focused on maternal singing and; 2) related to maternal mental health. Full-texts were scrutinized to certify that the remaining selection was, indeed, relevant to the present review. All steps of the review process were conducted and fine-tuned by the researchers. Points of disagreement were discussed and adjusted accordingly.

## **3 FINDINGS**

### **3.1 General description of the reviewed studies**

Of the 17 publications selected for analysis there were 13 peer-reviewed articles, three doctoral dissertations, and one master’s thesis. Most works were

published in English, with only one written in Portuguese. Table 1 offers a brief description of the 17 publications that were analyzed in this paper.

Author(s) Year	Country	Type of Publication	Design	Participants	Objective
Punamäki et al. (2020)	Finland, Palestine, and Qatar	Journal (Infant and Child Development)	Qualitative	50 Palestinian mothers in war conditions, and their infants 6 and 18 months of age	Examine how traumatic war events and mental health problems are associated with the content and valence of vocal emotion expressions
Reilly et al. (2019)	Australia	Journal (Archives of Women's Mental Health)	Pilot program	27 mothers	Report on the acceptability, experience of participation and immediate impact on maternal mood state of group singing sessions at a mother-infant unit treatment program
Fancourt & Perkins (2018)	United Kingdom	Journal (Music & Science)	Quantitative	43 mothers and their infants	Compare the effects of mother–infant singing with other mother–infant interactions in terms of emotional closeness and affect and anxiety
Perkins, York & Fancourt (2018)	United Kingdom	Journal (BMC Psychology)	Qualitative (three-arm randomized controlled trial)	54 mothers with symptoms of PND	Explore how a group singing program facilitates recovery from the symptoms of PND compared to a play group
Brisola (2017)	Brazil	Dissertation (Psychology)	Qualitative (phenomenological study)	13 first-time mothers with infants up to 18 months old	Apprehend the meaning of singing to infants for first-time mothers
Fancourt & Perkins (2017)	United Kingdom	Journal (Public Health)	Quantitative	391 first-time mothers	Explore whether there is an association between singing to new-borns and enhanced maternal mental health.
Persico et al. (2017)	Italy	Journal (Women and Birth)	Quantitative	83 + 85 women	Investigate the effects of mothers singing lullabies on bonding, new-borns' behaviour and maternal stress



Pixley (2015)	United States	Dissertation (Psychology)	Qualitative (phenomenological study)	16 mothers first-time with infants up to 12 months old	Investigate how first-time mothers experience singing to their infants as part of their developing relationship with themselves and as part of bonding with their infants
Blom (2015)	Canada	Thesis (Educational Psychology)	Qualitative	4 mothers and 2 music instructors	Investigate how parents perceive their motivations for and benefits of participating in singing classes with their infants.
Bonnár (2014)	Norway	Dissertation (Music Psychology)	Qualitative	20 Norwegian parents singing lullabies to their preschool aged children	Explore how parental lullaby singing can be understood in terms of meanings
Arnon et al. (2014)	Israel	Journal (Acta Paediatrica)	Perspectiver andomized, within-subject, crossover, repeated measures study design	86 mother-infant dyads belonging to 53 Jewish and 33 Arab families	Investigate whether combining maternal singing and kangaroo care benefits mothers and infants
Creighton, Atherton & Kitamura (2013)	Australia	Journal (The Australian Journal of Music Therapy)	Qualitative (Phenomenologically inspired analysis)	23 healthy mother-infant dyads	Examine how the experience of singing play songs and lullabies contributes to early mother-infant attachment
Carolan et al. (2012a)	Ireland	Journal (Midwifery)	Qualitative	6 pregnant women	Explore women's experiences of singing lullabies and their understanding of possible benefits for themselves and their infants
Carolan et al. (2012b)	Ireland	Journal (Midwifery)	Qualitative	6 pregnant women	Explore the impact of singing lullabies during pregnancy
De l'Etoile & Leider (2011)	USA	Journal (Infant Behavior and Development)	Experimental design	80 mothers and their 3-9-month-old infants	Explore the relationship between mothers' depressive symptoms and the acoustic parameters of infant-directed singing



Friedeman et al. (2010)	USA	Journal (Music and Medicine)	Music therapy intervention	48 mothers and mothers-to-be diagnosed with depression bipolar disorder schizophrenia, or schizoaffective disorder	Describe a music therapy lullaby program with women with mental health issues and evaluate its feasibility as a treatment model
Gudmundsdottir & Gudmundsdottir (2010)	Iceland	Journal (Music Education Research)		12 mothers (6 between 19-23 years and 6 between 35-41 years old)	Evaluate how parent- infant music classes benefit young mothers compared to older mothers and also regarding their subjective well-being

Table 1. Overview of 17 reviewed studies on maternal singing and mental health

As seen in Table 1, the studies analyzed for this paper were published in journals from varied fields such as infant development, women's health, public health, psychology, midwifery, music and science, and music education, to name a few. Both qualitative and quantitative studies were carried out in hospitals, mother-infant unit treatment programs, homes, community centers, and through online platforms, by phone and in person.

Sample sizes varied from 6 to 391 participants, who participated individually (n=9) or in groups (n=8). Unsurprisingly, mothers were the main participants (total n=1049). Participants varied in age (range = 17-60 years) and country of origin (e.g., Australia, Brazil, Canada, Iceland, Norway, United Kingdom). Participants were pregnant women, first-time mothers, healthy mothers and those with symptoms of postnatal depression (PND), bipolar disorder, schizophrenia and schizoaffective disorder. Infants ranged from newborn - both fully gestational and preterm - to 18 months postnatal age.

Regarding objectives, the reviewed studies focused on singing features (i.e., content /valence of vocal emotions expressions or acoustic parameters), mothers' experiences and meanings of singing, and the impact and potential benefits of singing on mothers' mental health. These works were carried out by 44 authors from 13 different countries in Asia, Europe, Australia, North and South America.

### 3.2 Overview of main themes

Findings were charted, developed, and analyzed by the researchers based on the commonality of themes presented in the articles, pertinent to the review's theme, in order to integrate the knowledge and also point out what was missing.

As a whole, the papers draw attention to the potential of maternal singing as palliative and preventive measures for individual mothers and group settings, demonstrating that daily singing is associated with maternal mental health. The studies also point toward multiple functions of singing in a mother's life, including as a means to deepen mother-infant bonding, as a vehicle of maternal emotional expression, as a bridge into memories of past experiences, and as a route towards maternal self-efficacy. Each of these functions is described in more detail later in the article.

Social aspects of singing were also mentioned as playing important roles in maternal mental health and, as will be seen ahead, in this review we also found singing to significantly reduce mothers' perceived stress and PND symptoms, contributing to their recovery.

We expose these ideas in more depth through three main themes that emerged from the analysis of the 17 studies, namely: maternal singing and mental health, group singing and mental health, and singing and postnatal depression. Figure 1 depicts the three emergent themes and their sub-themes.

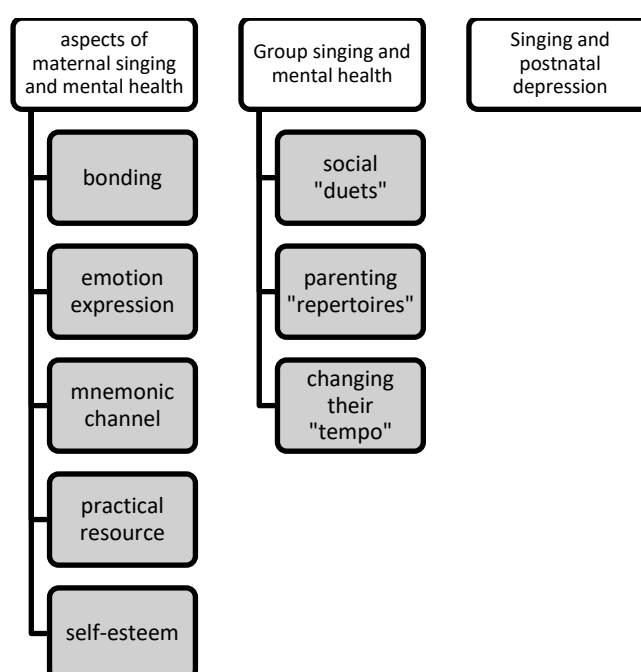


Figure 1. Interrelated themes and sub-themes that emerged from the studies

### 3.3 Maternal singing and mental health

Our analysis of the reviewed studies revealed five aspects of maternal singing that were associated to mother's mental health:

1. *Bonding* - Addressed in most studies (Blom, 2015; Bonnár, 2014; Brisola, 2017; Carolan et al., 2012a; Creighton et al., 2015; Fancourt & Perkins, 2018; Perkins et al., 2018; Persico et al., 2017; Pixley, 2015), bonding was described in several different ways, such as: feeling connected, having a mutual sense of belonging, being on the same wavelength, having a sense of closeness, nurturing the parent-child relationship through contact, a sense of intimacy, entering into an attuned state, an intersubjective space, creating a personal tie. For example, singing was described as “an extremely versatile and powerful tool in deepening the bond between mother and baby” (Pixley, 2015, p. 77).

2. *Emotion expression* - Half of the studies (Carolan et al., 2012b; Creighton et al., 2013; Fancourt & Perkins, 2018; Perkins et al., 2018; Persico et al., 2017; Punamäki et al., 2020) suggest that singing helps mothers express both positive and/or negative emotions, their sense of isolation, confusion, exhaustion, frustration, love, joy, gratitude, and delight associated with their caregiving. This expression can increase positive affect, serenity, give a sense of joy in everyday life, relieving loneliness and separation anxiety, soothing, and balancing out negativity. Studies also related that emotional expression can occur as mothers use their own creativity, making up melodies and song lyrics (Brisola, 2017; Pixley, 2015; Carolan et al., 2012a).

3. *Mnemonic channel* - Singing and choosing a song brings back memories, builds bridges to the past, as mothers remember their childhood, and youth (Brisola, 2017; Pixley, 2015; Bonnár, 2014; Carolan et al., 2012a). Singing also awakens memories of experiences in which they sang or were sung to. Remembering tunes from the past can be “an emotionally powerful experience. Some mothers reported that by thinking of songs from their childhood, they could better identify with their baby...remember what it was like to be cared for” (Pixley, 2015, p. 67), and reflect on specific life periods.

4. *Practical resource* - Singing helps mothers in daily tasks, such as communicating with their infant (Brisola, 2017; Carolan et al., 2012a; Creighton et al., 2013), calming them down (Creighton et al., 2013; Perkins et al., 2018; Persico et al., 2017), helping them sleep (Bonnár, 2014; Persico et al., 2017), calling their attention (Bonnár, 2014) and getting to know them better (Brisola, 2017). Participants in some studies (Brisola, 2017; Pixley, 2015; Blom, 2015; Arnon et al., 2014) pointed out how singing can also help mothers transmit customs and beliefs, and to educate infants in culture and language.

5. *Self-esteem* - Getting tasks done musically and successfully, gives mothers a sense of achievement and increased self-esteem (Perkins et al., 2018). As mothers calm their infants through singing, they have a sense of mastery, a feeling of being recognized and heard (Bonnár, 2014; Brisola, 2017). Studies that included first-time mothers (Brisola, 2017; Persico 2017; Pixley, 2015) noted that this success reassures women of their mothering capacities, helps them work through feelings related to becoming a mother, and define who and how they are as mothers.

The reviewed studies suggested that these aspects may strengthen a mother emotionally by reducing anxiety (Arnon et al., 2014), stress levels (Persico, 2017), and bodily tensions (Bonnár, 2014), thus promoting psychophysical and social wellbeing.

### **3.4 Group singing and maternal mental health**

About half of the reviewed studies (n=8) were based on research with groups of women (Blom, 2015; Carolan et al., 2012a, 2012b; Fancourt & Perkins, 2018; Friedman et al., 2010; Gudmundsdottir & Gudmundsdottir, 2010; Perkins, York & Fancourt, 2018; Persico et al., 2017; Reilly et al., 2019). Three sub-themes emerged linking group singing and maternal mental health: social “duets”, parenting “repertoires”, and changing their “tempo”.

1. *Social “duets”*– Participants related that singing with peers enabled them to connect (Carolan et al., 2012a, 2012b), in some cases, at a deep level, going beyond peer support. It reduced social barriers, facilitating social “duets”, as they interacted, giving them a feeling of being connected (Carolan et al., 2012a). Seeing others dealing and struggling

with similar situations gave mothers more confidence to focus on their own successes, by noticing small improvements. Blom (2015) also noticed that the longer mothers participated in their program, the more at ease they were with each other.

2. *Parenting “repertoires”*– Learning new songs and information about singing helped women with parenting (Blom, 2015) and facilitated “positive emotions in relation to the experience of motherhood” (Perkins et al., 2018, p. 11). Group singing provided structure and routine, helping mothers regulate emotions and behaviors through song (Blom, 2015). Thus, through group singing, women shared musical and “parenting” repertoires.

3. *Changing their “Tempo”*– After sessions participants reported that they were “significantly more relaxed, more cheerful, and more clear-headed” (Reilly et al., 2019, p. 124). Carolan et al. (2012b) described changes in terms of relaxation, less stress, and “switching off” to thinking of music. Persico et al.'s, (2017) also found a reduction in perceived maternal stress in the singing group. Repetition, routine, and structure of these supportive group settings could be influencing these increased perceived benefits (Pixley, 2015), and changes in their mood or “tempo”.

It should be noted that the interpersonal aspects of musical programs seemed to be intertwined with the singing experience and could thus be confusing in determining benefits and changes due to the singing itself. It is unclear in some programs how much of the ability to recover more quickly from PND is due to singing or the conjunction of singing, social interaction, and the facilitative characteristics of the program leader. Still, findings from group singing studies with young and older adults, marginalized populations, and people struggling with mental health issues suggest that collective singing can improve mental health (Williams et al., 2018).

### **3.5 Singing and postnatal depression**

The reviewed studies suggest a clear association between daily singing, “fewer symptoms of postnatal depression (PND) and higher levels of wellbeing, self-esteem and perceived mother-infant bond” (Fancourt & Perkins, 2017, p. 151).

Women suffering from postnatal depression symptoms in Perkins et al.'s (2018) study noticed how singing was good for them, as well as for their infants, relaxing them both. They enjoyed learning new songs and new skills. Besides the mental health and group singing aspects described in the previous paragraphs, singing, being in a group, and learning new songs enabled these women who were struggling to feel like they were competent and able to take care of their infants, giving them some relief from maternal concerns and from PND symptoms. Different than the group of mothers that was just playing, those who sang seemed to have a functional emotional response that encompassed their competence in motherhood as well. This could explain why PND symptoms reduced significantly faster in the singing groups than in usual care in the play group (Perkins et al., 2018).

### **3.6 Strengths and Limitations**

The analysis and integration of research studies that use different methods and vocabulary and come from different areas of science is obviously challenging. Differences due to the nature of the reports (e.g., short communications, dissertations and empirical research) also revealed limitations to our review, as did the focus on validating programs or interventions, which diverts attention from singing and mental health. Also, the search terms and strategy were both executed by the researchers, not a librarian.

Strengths of this review include the integration of knowledge across areas and a broad view of maternal singing and mental health, revealing the variety of interventions and research available so far. It also provides a much-needed examination and description of themes related to singing and mothers' mental health.

## **4 DISCUSSION**

In this systematic review, we aimed to integrate knowledge on maternal mental health and singing published in the last 10 years, to help clarify what is already known and also point to future research needs.

### **4.1 Pointing to further research**

In this relatively new area of the psychology of maternal singing, several suggestions were offered by researchers to incorporate singing to programs at

hospitals, community centers or mother-infant treatment units. These suggestions could be incorporated into already existing programs for healthy mothers as well as those struggling with mental health and could combine coaching and singing, as a way to provide both orientation and feedback, potentially helping mothers improve their interactions with their infants. Programs, in turn, may also involve mothers and other caregivers who had painful childhood experiences, helping them work through their feelings and relationships.

Suggestions for future research included: understanding the evolutionary role of singing and the intersubjective nature of singing, song and singing practices in different ethnic groups, the impact of maternal singing on PND and its relation to maternal caregiving. Scholars have also recommended that thorough investigations of the psychological aspects of singing be carried out, along with the development of practical interventions (Fancourt & Perkins, 2018), including with other caregivers (e.g., fathers, grandparents, and nonparental caregivers). Maternal facial expressions and gestures during infant-directed singing is also worthy of investigation (Trehub, 2017).

Mother-infant musical interactions and the impact their responses have on recovery from PND (Perkins et al., 2018) needs further substantiation. Researchers can analyze programs with vulnerable mother-infant dyads exploring singing as a mediator for their relationship (Pixley, 2015).

There is also a need to more fully understand “how emotions become audible through vocal expressions and communicate actions and gestures within the parent-child interaction” (Bonnár, 2014, p. 342), through analyses of singing mechanisms on neuroendocrine function. Such investigations would help to shed light on the effects of singing for mothers experiencing depressive symptoms in relationship to musical features such as tempo and tonality (de l'Etoile & Leider, 2011).

Other suggestions included examining maternal identity development in mothers who sing and do not sing, exploring singing practices of mothers and other caregivers (e.g., grandmothers and alloparents) from varied cultural and ethnic groups, querying maternal reasons for singing, verifying the quality of mother-infant bond, emotion regulation and self-expression, examining personal memories of singing and non-singing mothers, and investigating strategies that



afford singing interactions to better understand how to promote a stronger mother-infant bond.

Researchers could also adopt an intersubjective perspective to address maternal singing using, for example, a critical realist method that explores the unfolding of this complex and multifaceted activity (McLean, 2016) between mother and child. This could contribute to uncovering the underlying mechanisms “and the interplay of factors that explain postpartum mental health and illness” in all its complexity (Sword et al. 2012, p. 52). After all, the meaningfulness of singing is dependent on “the particular parent-child interaction and interrelationship” (Bonnár, 2014, p. 349), and how it is experienced individually and collectively.

Fancourt and Perkins (2017) suggest that when developing further studies, it is central to consider the combination of four factors which seem to be involved in maternal singing: “the music itself, the social engagement, the physical act of singing and personal responses to what is sung” (p. 151). Thus, the complex nature of singing also prompts the combined efforts of an interdisciplinary team, working together, in basic and intervention studies (Gick, 2011). Thus, the need for future multidisciplinary investigations into maternal singing and mental health is ever-present.

We would be remiss if we did not mention that singing is not an enjoyable activity for everyone. Some research studies describe mothers being uncomfortable when singing, and these include mothers who did not have mothers singing to them during childhood (or do not recall such experiences), those who report not knowing any songs, those who lack the confidence to sing, but do so anyhow (Bonnár, 2014; Brisola, 2017; Brisola & Cury, 2015, 2018). Mothers experiencing unsuccessful singing may have very different emotions from those who are successful in calming their infant through song. This also needs to be further researched.

#### **4.2 Implications for practice: incorporating singing into mothers' lives**

Whether analyzing singing itself, its meanings, impacts or benefits, the reviewed papers contained several suggestions of how to better incorporate singing into mother's lives to promote their mental health. Arnon and colleagues (2014) recalled that singing is safe, inexpensive and an easy form of caring for

and soothing infants, as well as a way to re-center one's self (Perkins et al., 2018).

We believe that incorporating singing early on as a preventive mental health measure for healthy women as well as building singing programs for at-risk mothers is a vital suggestion. Pixley (2015) proposes that singing interventions be integrated to ongoing intervention programs. For example, a lullaby program could be incorporated into treatment plans for women with more severe forms of maternal stress and anxiety (Carolan et al, 2012a). Special attention should also be given to the choice of songs, depending on the therapeutic objectives. Reilly (2019) suggests that rounds (i.e., a short musical piece that can be sung by two or more people beginning at different times, like "Brother John") can promote a sense of community, whereas lullabies can assist with soothing and meditation. A mix of familiar and new songs with culturally significant ones, as well as those chosen by mothers themselves should also be included. Because mothers derive different meanings from the music that they engage with, in the presence and absence of their infants (see Ilari, 2009), their voices should be heard where repertoire is concerned.

Studies suggested that group singing offers mothers opportunities to connect and bond with other mothers, to learn songs and parenting skills, to develop routines, and slow down and relax. These findings are consistent with previous works on the benefits of group singing in choirs significantly improving mental health and wellbeing. As some have argued, singing can ameliorate anxiety, depression, and social disconnection (Dingle et al, 2012; Williams et al., 2018).

An intervention for mothers with depressive symptoms, could combine interactive coaching and singing to help them "engage in sensitive and emotionally synchronized interactions with their infants" (Carolan et al, 2012a, p. 248), to promote success in caring for infants (Creighton et al., 2013). Mothers could be given feedback about their singing and their infants' reactions, as well as suggestions into new ways to improve their interactions (De l'Etoile & Leider, 2011). Such practices may have a reassuring role for mothers and potentially increase their parenting self-efficacy.

Singing can also contribute to relieving certain risk factors for maternal PND such as low self-esteem, self-worth and competence. Singing may function as a

way to “experience positive thoughts and feelings to help balance out the negativity and stress that comes with caring for an infant” (Creighton, Atherton, Kitamura, 2013, p. 29). Singing for one’s infant can relieve loneliness and separation anxiety, creating a pleasant and calm atmosphere with the human voice (Bonnár, 2014).

Sword et al (2012) noticed that women at risk for PND who were attentive to their personal and contextual aspects were able to maintain and even enhance their mental health. Analyzing the complexity of PND, these authors stress the importance of interventions “that encourage women to identify and implement proactive strategies that are personally relevant” (p. 59).

Singing activities, both in groups and with one’s child, can provide opportunities for mothers to identify personal strategies for bonding and coping with motherhood. This can be done alone or with the prompting of a teacher, a friend, a relative, or a facilitator and songs can be tailored to a mother’s situation, feelings, perceptions, and to the infant.

Singing programs may also prove valuable to mothers who had painful childhood experiences with their primary caregiver, helping them understand how important it is to create the meaningful relationship they yearn to have with their infants. Trauma and abuse often lead mothers to separate “their trauma from the affective experience of it, perpetuating aspects of their childhood trauma in the present” (Pixley, 2015, p. 80). As such, mothers may misread their children’s needs. Learning new songs can help mothers explore their childhood experiences, and reedit emotions (Brisola, 2017).

Reilly et al, (2019) points out that women should be reminded that singing is not only for their infants but also serves as support to their own health. Exploring and working through “their own experiences of misattunement” (Pixley, 2015, p. 80) can help mothers become more sensitively attuned to their infant.

Punamäki et al. (2020) further suggests that interventions should be culturally meaningful and target at-risk mothers “in both peaceful and war-affected societies” (p. 19). Singing is a flexible tool that can be modulated to meet the emotional needs of different individuals in different contexts (Perkins et al., 2018). Yet, when building singing programs for mothers, one must also consider the possible difficulties that women with depression might have to participate. It may be challenging for them to simply wake up, get dressed, pick up their child,

and leave the house in a timely fashion (Friedeman et al, 2010). Some women may not have the means to pay for music classes, even when they wish to and would benefit from such participation (Gudmundsdottir & Gudmundsdottir, 2010). Thus, there are many issues to take in consideration when designing programs for mothers, as we have outlined in this section.

## **5 CONCLUSION**

The present review of research on maternal singing and mothers' mental health published in the past 10 years revealed that studies have, thus far, progressed in the direction of describing the different aspects involved in singing. Phenomenological studies have uncovered several hypotheses and possibilities for further research, and quantitative research is testing hypotheses and deepening our understanding of maternal singing and its relation to mental health. Both pathways are revealing a clear connection between these two constructs. Although this relationship is still not fully understood, it seems clear that maternal singing helps mothers build a strong bond with their infants, express positive and negative emotions, and build bridges to the past. Recent work on maternal mental illness also shows associations between maternal singing and a reduction of PND symptoms and stress. Singing further assists mothers in their daily tasks and helps them feel more confident in their maternal role.

In face of the need for more parenting resources for mothers and fathers struggling with mental health (David et al., 2011), we suggest that singing can be more than a pleasurable activity. Maternal singing and the development of musical programs and interventions aimed at positive parenting (Arnon et al, 2014), may promote maternal mental health and assist in women's recovery from mental illness (Davidson et al, 2006). This is particularly important today, as we navigate the COVID-19 pandemic and its effects on the mental health of mothers and their children in the years to come.

As noted earlier, the COVID-19 pandemic is placing a considerable toll on parents (Canady, 2020) as they deal with their parenting tasks, education, and basic needs (American Psychological Association, 2020). Recent studies suggest that parents of young children are particularly stressed and vulnerable (Davenport et al, 2020; Smith et al., 2020). Musical parenting and singing can be

encouraged to be used by parents as a tool for strengthening bonds, bringing relief from stress and worries, and as an instructional tool. Already important before this pandemic, singing may prove to be even more relevant now, as families are isolated and with limited access to other forms of social and emotional support (Center for Translational Neuroscience, 2020).

Special care should be taken to support policies and practices that envision measures and provide options of singing groups, so that women of all ages, social and financial standing have access to them. Care should also be taken in developing recovery-oriented supported initiatives for mothers struggling with PND.

If mothers with PND, or who are at risk, have an experience of developing positive, successful singing interactions with their infant - whether through a program, online, or with other people around them --, they can develop a sense of being a “good mother”. This, in turn, can assist them in their recovery and help prevent a spiral of negative feelings of low self-esteem and parenting competence which, according to Creighton et al. (2013) are known to be related to risk factors of PND.

As theoretical knowledge in the field of singing is underway (Ludke et al., 2020), a concerted effort should be made to compare and integrate maternal singing to the existing knowledge of human singing in general. Such knowledge can be valuable to inspire diversified psychological attention appropriate to mothers and their infants, contributing with the psychological understanding of maternal singing in the area of mental health as a tool of emotional wellbeing, communication of affection, and promotion of healthy human development. Although there is still much to uncover, scholars are offering evidence that mothers can, in fact, sing their troubles away.

## REFERENCES

AFIYANTI, Yati & SOLBERG, Shirley M. “It is my destiny as a woman”: On becoming a new mother in Indonesia. *Journal of Transcultural Nursing*, 26(5), 491–498, 2014. <https://doi.org/10.1177/1043659614526243>

ALDERDICE, Fiona; MCNEILL, Jenny & LYNN, Fiona. A systematic review of systematic reviews of interventions to improve maternal mental health and well-

being. *Midwifery*, 29(4), 389–399, 2013.  
<https://doi.org/10.1016/j.midw.2012.05.010>

AMERICAN PSYCHOLOGICAL ASSOCIATION. Stress in the time of COVID-19, v.1. Retrieved on May 22, 2020 from  
<https://www.apa.org/news/press/releases/stress/2020/stress-in-america-covid.pdf>

ARNON, Shmuel; DIAMANT, Chagit; BAUER, Sofia; REGEV, Rivka; SIROTA, Gisela & LITMANOVITZ, Ita. Maternal singing during kangaroo care led to autonomic stability in preterm infants and reduced maternal anxiety. *Acta Paediatrica*, 103: 1039-1044, 2014. doi:10.1111/apa.12744

BAKER, Felicity & MACKINLAY, Elizabeth. Sing, soothe and sleep: A lullaby education programme for first-time mothers. *British Journal of Music Education*, 23(2), 147-60, 2006. doi:10.1017/S0265051706006899

BANASIEWICZ, Jolanta, ZAREBA, Kornelia, BiNKOWSKA, Malgorzata, ROZENEK, Hanna, WÓJTOWICZ, Stanislaw & JAKIEL, Gzegorz. Perinatal predictors of postpartum depression: Results of a retrospective comparative study. *Journal of Clinical Medicine* 9(9), 2952, 1-11.  
doi.org/10.3390/jcm9092952

BARLOW, Jane; MCMILLAN, Anita S.; KIRKPATRICK, Sue; GHATE, Deborah; BARNES, Jacqueline & SMITH, Marjorie. Health-led interventions in the early years to enhance infant and maternal mental health: a review of reviews. *Child and Adolescent Mental Health*, 15(4), 178-85, 2010.

BASS, Pat F. & BAUER, Nerissas. Parental postpartum depression: more than “baby blues”: pediatricians need to recognize symptoms of perinatal depression in new mothers, provide basic counseling and treatment, and refer for appropriate services when need. *Contemporary Pediatrics* 35(9), 35-38, September 2018.  
<https://link.gale.com/apps/doc/A559209856/HRCA?u=txshracd2555&sid=HRCA&xid=15cab2f4>

BLOM, Marieke. *Exploring mothers’ experiences participating in parent-infant singing classes*. Master’s thesis, University of Saskatchewan. University of Saskatchewan Harvest, 2015. <http://hdl.handle.net/10388/ETD-2015-01-1909>

BONNÁR, Lisa. *Life and lullabies: exploring the basis of meaningfulness in parents’ lullaby singing*. Doctoral dissertation, Norges Musikkhøgskole. NMH Brage, 2014. <https://nmh.brage.unit.no/nmh-xmlui/handle/11250/227479>

BRISOLA, Elizabeth Brown Vallim. *A experiência de cantar para bebês: um estudo fenomenológico com mães* The experience of singing to infants: a



phenomenological study with mothers]. Doctoral Dissertation, Pontifícia Universidade Católica de Campinas. TEDE Programa de Pós-Graduação em Psicologia, 2017.

<http://tede.bibliotecadigital.puccampinas.edu.br:8080/jspui/handle/tede/951>

BRISOLA, Elizabeth B. V. & CURY, Vera E. Singing your troubles away: the experience of singing from a psychological standpoint - contributions from a heuristic research. *The Humanistic Psychologist* 43(4), 395-408, 2015.

BRISOLA, Elizabeth B. V. & CURY, Vera E. Investigating experiences of mothers singing to their infants: in search of meanings. *Psicologia em Estudo*, 23, 1-14, 2018.

CANADY, Valerie A. APA stress report amid COVID-19 points to parental challenges. *Mental Health Weekly*, 30 (22), 2020. <https://link-galecom.ezproxy.stedwards.edu/apps/doc/A632373607/HRCA?u=txshracd2555&sid=HRCA&xid=7aee4145>. Accessed 28 Aug.2020.

CAROLAN, Mary; BARRY, Maebh; GAMBLE, Mary; TURNER, Kathleen & MASCAREÑAS, Óscar. Experiences of pregnant women attending a lullaby programme in Limerick, Ireland: a qualitative study. *Midwifery*, 28(3), 321–328, 2012(a). <https://doi.org/10.1016/j.midw.2011.04.009>

CAROLAN, Mary; BARRY, Maebh; GAMBLE, Mary; TURNER, Kathleen & MASCAREÑAS, Óscar. The Limerick Lullaby project: an intervention to relieve prenatal stress. *Midwifery*, 28(2), 173–180, 2012(b). <https://doi.org/10.1016/j.midw.2010.12.006>

CENTER FOR TRANSLATIONAL NEUROSCIENCE. How long can the levee hold? *Medium*. August 12, 2020. <https://medium.com/rapid-ec-project/how-long-can-the-levee-hold-2a2cd0779914>

CEVASCO Andrea M. The effects of mothers' singing on full-term and preterm infants and maternal emotional responses. *Journal of Music Therapy*, 45(3), 273–306, 2008. <https://doi.org/10.1093/jmt/45.3.273>

CLIFT, Stephen. Singing, wellbeing, and health. In: R. MacDonald, G. Kreutz & L. Mitchell (Eds.). *Music, health, and wellbeing* (pp. 113-124). New York: Oxford University Press, 2012.

CREIGHTON, Alison L.; ATHERTON, Michael & KITAMURA, Christine. Singing play songs and lullabies: Investigating the subjective contributions to maternal attachment constructs. *Australian Journal of Music Therapy*, 24, 17-44, 2013.

DARVILL, Ruth; SKIRTON, Heather & FARRAND, Paul. Psychological factors that impact on women's experiences of first-time motherhood: a qualitative



study of the transition. *Midwifery*, 26(3), 357–366, 2010.  
<https://doi.org/10.1016/j.midw.2008.07.006>

DAVENPORT, Margie H.; MEYER, Sarah; MEAH, Victoria L.; STRYNADKA, Morgan C., & KHURANA, Rshmi. Moms are not OK: COVID-19 and maternal mental health. *Frontiers in Global Women's Health*, 1(1), 2020. doi: 10.2289/fgwh.2020.000001

DAVID, Daryn H.; STYRON, Thomas & DAVIDSON, Larry. Supported parenting to meet the needs and concerns of mothers with severe mental illness. *American Journal of Psychiatric Rehabilitation*, 14(2), 137–53, 2011.  
<https://doi.org/10.1080/15487768.2011.569668>

DAYKIN, Norma; MANSFIELD, Louise; MEADS, Catherine; JULIER, Guy; TOMLINSON, Alan; PAYNE, Annette; DUFFY, Lily Grigsby; LANE, Jack; D'INNOCENZO, Gtiorgia; BURNETT, Adele; KAY, Tess; DOLAN, Paul; TESTONI, Stefano; & VICTOR, Christina. What works for wellbeing? A systematic review of wellbeing outcomes for music and singing in adults. *Perspectives in public health*, 138(1), 39–46, 2018.  
<https://doi.org/10.1177/1757913917740391>

DE L'ETOILE, Shannon K. Responses to infant-directed singing in infants of mothers with depressive symptoms. *Arts in Psychotherapy*, 39(5), 353-66, 2012. <https://doi.org/10.1016/j.aip.2012.05.003>

DE L'ETOILE, Shannon K. & LEIDER, Colby N. Acoustic parameters of infant-directed singing in mothers with depressive symptoms. *Infant Behavior and Development*, 34(2), 248-256, 2011.  
<https://doi.org/10.1016/j.infbeh.2010.12.013>

DINGLE, Genevieve A.; BRANDER, Christopher BALLANTYNE, Julie & BAKER, Felicity A. 'To be heard': The social and mental health benefits of choir singing for disadvantaged adults. *Psychology of Music*, 41(4), 405–21, 2013.  
<https://doi.org/10.1177/0305735611430081>

EDWARDS, Jane. *Music therapy and parent-infant bonding*. In J. Edwards (Ed.), *Music therapy and parent–infant bonding* (p. 5–21). Oxford University Press, 2011. <https://doi.org/10.1093/acprof:oso/9780199580514.003.0002>

ELMER, Stefanie Stadler. Human singing: Towards a developmental theory. *Psychomusicology: Music, Mind and Brain*, 21(1-2), 13–30, 2011.  
<http://dx.doi.org/10.1037/h0094001>

FANCOURT, Daisy; OCKELFORD, Adan & BELAI, Abi. The psychoneuroimmunological effects of music: a systematic review and a new

model. *Brain, behavior, and immunity*, 36, 15–26, 2014.  
<https://doi.org/10.1016/j.bbi.2013.10.014>

FANCOURT, Daisy, & PERKINS, Rosie. Associations between singing to babies and symptoms of postnatal depression, wellbeing, self-esteem and mother-infant bond. *Public health*, 145, 149–52, 2017.  
<https://doi.org/10.1016/j.puhe.2017.01.016>

FANCOURT, Daisy & PERKINS, Rosie. The effects of mother–infant singing on emotional closeness, affect, anxiety, and stress hormones. *Music & Science*, 2018. <https://doi.org/10.1177/2059204317745746>

FRIEDMAN, Susan H.; KAPLAN, Ronna S., ROSENTHAL, Miriam B. & CONSOLE, Patty. Music therapy in perinatal psychiatry: Use of lullabies for pregnant and postpartum women with mental illness. *Music and Medicine*, 2(4), 219–25, 2010. <https://doi.org/10.1177/1943862110379584>

GAEBEL, Christine, Study protocol of the MUSED study: A randomized trial to evaluate the psychobiological effects of group music therapy in women with depression. *Nordic Journal of Music Therapy*, 1-26. doi:10.1080/08098131.2020.1760921.

GICK, Mary L. Singing, health and well-being: A health psychologist's review. *Psychomusicology: Music, Mind and Brain*, 21(1-2), 176-207, 2011.  
<https://doi.org/10.1037/h0094011>

GRANATO, Tânia M. M., & AIELLO-VAISBERG, Tânia M. J. Maternidade e colapso: consultas terapêuticas na gestação e pós-parto. *Paidéia (Ribeirão Preto)*, 19(44), 395-401, 2009. <https://doi.org/10.1590/S0103-863X2009000300014>

GUDMUNDSDOTTIR, Dora G., & GUDMUNDSDOTTIR, Helga R. Parent–infant music courses in Iceland: perceived benefits and mental well-being of mothers, *Music Education Research*, 12(3), 299-309, 2010.  
<https://doi.org/10.1080/14613808.2010.505644>

GUDMUNDSDOTTIR, Helga R.; BEYNON, Carol; LUDKE, Karen & COHEN, Annabel J. *The Routledge Companion to Interdisciplinary studies in singing, vol II: Education*. Routledge, 2020.

ILARI, Beatriz. Songs of belonging: Musical interactions in early life. In: J. Kerchner & C. Abril (Eds.), *Musical experience in our lives: Expanding the boundaries of music education* (pp. 21-38). Lanham, MD: Rowman & Littlefield & MENC, 2009.

LUDKE, Karen; GUDMUNDSDOTTIR, Helga; BEYNON, Carol & COHEN, Annabel J. (Eds.). *The Routledge companion to interdisciplinary studies*, vol. 2. Routledge, 2020.

MACDONALD, Raymond, KREUTZ, Gunter & MITCHELL, Laura (Eds). *Music, health, & wellbeing*. Oxford University Press, 2012.

MCLEAN, Elizabeth. Exploring parents' experiences and perceptions of singing and using their voice with their baby in a neonatal unit: an interpretive phenomenological analysis. *Qualitative Inquiries in Music Therapy*, 11, 1-42, 2016.

MENDES, Karina Dal Sasso.; SILVEIRA, Renata Cristina de Campos P. & GALVÃO, Cristina Maria. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. *Texto & Contexto - Enfermagem*, 17(4), 758-764, 2008. <https://doi.org/10.1590/S0104-07072008000400018>

MENTAL HEALTH AMERICA. *Pregnancy and Postpartum Disorders*. Retrieved June 18, 2020, from <https://www.mhanational.org/conditions/pregnancy-and-postpartum-disorders>

PADJEN, Ante. L. Music, Brain and Health. *The International Journal of Whole Person Care*, 7(1), 38-39, 2020. <https://doi.org/10.26443/ijwpc.v7i1.229>

PERKINS, Rosie; YORKE, Sarah & FANCOURT, Daisy. How group singing facilitates recovery from the symptoms of postnatal depression: a comparative qualitative study. *BMC psychology*, 6(1), 41, 2018. <https://doi.org/10.1186/s40359-018-0253-0>

PERSICO, Giuseppina; ANTOLINI, Laura; VERGANI, Patrizia; COSTANTINI, Walter; NARDI, Maria Teresa & BELLOTTI, Lidia. Maternal singing of lullabies during pregnancy and after birth: Effects on mother-infant bonding and on newborns' behaviour. Concurrent Cohort Study. *Women and Birth: Journal of the Australian College of Midwives*, 30(4), 214–220, 2017. <https://doi.org/10.1016/j.wombi.2017.01.007>

PIXLEY, Margaret Mia. *Singing motherhood: first time mothers' experiences singing to their infants*. Doctoral Dissertation, The City University of New York, 2015. CUNY Academic Works. [https://academicworks.cuny.edu/gc\\_etds/1095/](https://academicworks.cuny.edu/gc_etds/1095/)

PUNAMÄKI, Raija-Leena; VÄNSKÄ, Mervi; QUOTA, Samir R.; PERKO, Kaisa & DIAB, Safwat Y. Vocal emotion expressions in infant-directed singing: The impact of war trauma and maternal mental health and the consequences on infant development. *Infant Child Development*, 1-23, 2020. <https://doi.org/10.1002/icd.2176>

REAGON, Carly; GALE, Nichola; ENRIGHT, Stephanie; MANN, Mala & VAN DEURSEN, Robert. A mixed-method systematic review to investigate the effect of group singing on health-related quality of life. *Complementary Therapies in Medicine*, 27, 1–11, 2016. <https://doi.org/10.1016/j.ctim.2016.03.017>

REILLY, Nicole; TURNER, Gemma; TAOUK, Jamilie & AUSTIN, Marie-Paule. 'Singing with your baby': an evaluation of group singing sessions for women admitted to a specialist mother-baby unit. *Archives of Women's Mental Health*, 22(1), 123–127, 2019. <https://doi.org/10.1007/s00737-018-0859-5>

RUBASHKIN, Nicholas; WARNOCK, Ruby & DIAMOND-SMITH, Nadia. A systematic review of person-centered care interventions to improve quality of facility-based delivery. *Reproductive Health*, 15(1), 169, 2018. <https://doi.org/10.1186/s12978-018-0588-2>

SMITH, Wendy; TAKI, Sarah & WEN, Li Ming. The role of telehealth in supporting mothers and children during the COVID-19 pandemic. *Australian Journal of Advanced Nursing* 37(3), 37-38, 2020. <https://www.ajan.com.au/index.php/AJAN/article/view/168>

SONG, J. E., KIM, T., & AHN, J. A. (2015). A systematic review of psychosocial interventions for women with postpartum stress. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, 44(2), 183–192. <https://doi.org/10.1111/1552-6909.1254>

SOUZA, Marcela Tavares de; SILVA, Michelly Dias da, & CARVALHO, Rachel de. Revisão integrativa: o que é e como fazer. *Einstein (São Paulo)*, 8(1), 102-106, 2010. <https://doi.org/10.1590/s1679-45082010rw1134>

SWORD, Wendy; CLARK, Alexander M.; HEGADOREN, Kathleen; BROOKS, Sandra & KINGSTON, Dawn. The complexity of postpartum mental health and illness: a critical realist study. *Nursing Inquiry*, 19(1), 51–62, 2012. <https://doi.org/10.1111/j.1440-1800.2011.00560.x>

TORRACO, Richard J. Writing Integrative Literature Reviews: Using the Past and Present to Explore the Future. *Human Resource Development Review*, 15(4), 404–428, 2016. <https://doi.org/10.1177/1534484316671606>

TREHUB, Sandra E. (1999). Singing as a parenting tool. *Early Childhood Connections*, 8-14.

TREHUB, Sandra E. The maternal voice as a special signal for infants. In M. Filippa, P. Kuhn, & B. Westrup (Eds.), *Early vocal contact and preterm infant brain development: Bridging the gaps between research and practice* (pp. 39–54), 2017. Amsterdam: Springer International Publishing.

TREHUB, Sandra E., & GUDMUNDSDOTTIR, Helga R. Mothers as singing mentors for infants. In G. F. Welch, D. M Howard, & J. Nix (Eds.), *Oxford handbook of singing*. Oxford: Oxford University Press, 2015. Advance online publication. doi: 10.1093/oxfordhb/9780199660773.013.25

TREHUB, Sandra E., WEISS, Marcel W., & CIRELLI, Laura K. Musicality across the lifespan. In P. J. Rentfrow & D. J. Levitin (Eds.), *Foundations in music psychology: Theory and research* (pp. 265-303), 2019. Cambridge, MA: MIT Press.

WHITTEMORE, Robin & Knafl, Kathleen. The integrative review: updated methodology, *Journal of Advanced Nursing*, 52(5), 546-33, 2005. Doi: 10.1111/j.1365-2648.2005.03621.x

WILLIAMS, Elyse; DINGLE, Genevieve & CLIFT, Stephen. A systematic review of mental health and wellbeing outcomes of group singing for adults with a mental health condition. *The European Journal of Public Health*, 28(6), 1035-42, 2018. <https://doi.org/10.1093/eurpub/cky115>

WORLD HEALTH ORGANIZATION. *Mental health: strengthening our response*. Retrieved may 21, 2018, from <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>

WORLD HEALTH ORGANIZATION. *Maternal mental health*. Retrieved May 23, 2020 from [https://www.who.int/mental\\_health/maternal-child/maternal\\_mental\\_health/en/](https://www.who.int/mental_health/maternal-child/maternal_mental_health/en/)

ZELKOWITZ, Phyllis & PAPAGEORGIOU, Apostolos. 'Easing maternal anxiety: An update', *Women's Health*, 8(2), 205-13, 2012. <https://doi.org/10.2217/WHE.11.96>