

Singing the Blues: A Literature Review of the Effects of Music on Postnatal Depression

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ABSTRACT

Postnatal depression, also known as postpartum depression, is not a new condition, but has been well documented for decades, as have the treatments. The most common treatments for postnatal depression include pharmacological, psychological, psychosocial, relaxation and other holistic methods and may be used individually or in various combinations. Recently, the western world has come to acknowledge and use more traditional or complementary and alternative styles of therapy. These specifically include massage, meditation and yoga, and music therapy. Music has become more popular as more research defines its power over the body, both physically and mentally. It is anticipated with the right information any woman, no matter her location, could use this powerful tool to alleviate the symptoms of postnatal depression. This would also save further distress of separation from family and other support networks as well as reduce financial burdens when seeking care. A literature review was conducted to determine if this relatively new intervention in western society has been used and to determine what the outcomes have been. Currently, no research has been conducted which relates to the use of music as an intervention for women with postnatal depression, particularly those in rural areas.

Keywords: depression, music listening, music therapy, postnatal depression, postpartum depression, treatment

INTRODUCTION

Postnatal depression (PND), also known as postpartum depression, is a depressive state experienced by the mother within the first year following the delivery of a baby (Gibson, McKenzie-McHarg, Shakespeare, Price, & Gray, 2009; Miller, 2002). Most countries define PND using the Diagnostic and Statistical Manual for Mental Disorders, Text Revision (DSM-IV) or the International Classification of Diseases and related health problems – tenth revision (ICD-10) (World Health Organization, 2012).

The criterion for diagnosing the onset of postnatal depression occurs in the perinatal period usually between four and six weeks after delivery however, PND may be diagnosed anytime within three years of giving birth (Almond, 2009; Boath & Henshaw, 2001; Miller, 2002; Nicolson & Woollett, 1998). PND is the most prevalent ‘complication’ of childbirth however, approximately half of all PND cases actually go undiagnosed and untreated (Friedman & Resnick, 2009). In addition, the social stigma of depression in what is said to be ‘the happiest time in a woman’s life’ often inhibits a mother from seeking professional

help (Friedman & Resnick, 2009; Miller, 2002). In order to prevent this, mothers who are at risk of developing PND need to be identified early (Beck, 2001).

Postnatal depression symptoms can last from weeks to years, if left untreated. A significant factor in the duration of PND is the length of delay to adequate treatment (Beck, 2001). Symptoms can arise days to weeks or months following child birth and can range from mild feelings of hopelessness to thoughts or actions of suicide or infanticide (Almond, 2009; Miller, 2002). These symptoms are similar to depression at any other stage in the life cycle and are described as depressed mood, loss of enjoyment and energy, guilt, ideas of self-harm, less concentration, restlessness and agitation, pessimism, low self-esteem, unworthiness, disturbed sleep, increase or decrease in appetite, unexplained weight loss or weight gain and other somatic symptoms such as headaches, abdominal pain or breast tenderness without adequate physical cause (Almond, 2009). At times these symptoms go undetected as many are believed to be a part of the physical and emotional changes that occur 'normally' or in some cases it has been stated to be not bad enough to warrant depression (Whitton, Warner, & Appleby, 1996).

Causes of postnatal depression

There is no single known cause of PND and no single treatment (Almond, 2009). The factors observed to be influential in the development of PND are broadly, biological, psychological and social. Biological causes are a family history of psychopathology or past history of depression (antenatal or previously). Psychological factors are stressful life events related to pregnancy or birth (Almond, 2009). Conversely, social factors have been known to cause or contribute to the development of PND which can develop from difficulties in marital or partnered relationships, lack of support, socio-economic adversity, infant health and temperament, unrealistic expectations of motherhood and personality factors (Almond, 2009; Craig, Judd, & Hodgins, 2005; Cutrona & Troutman, 1986). It is thought the occurrence of PND may begin in the prenatal or antenatal period, but, this is not the case with *all* who suffer with PND (Mallikarjun & Oyebode, 2005). It is hoped if a woman's risk factors of developing PND can be identified then the appropriate interventions can be initiated before the onset occurs (Beck, 2001).

Categories perinatal mental disorders

Perinatal mental disorders are frequently divided into three categories; postpartum blues, also referred to as 'baby blues', postnatal depression and puerperal psychosis. These disorders have not been clearly separated and there is much debate about whether they are three separate disorders or merely one disorder that ranges along a severity continuum (Boath & Henshaw, 2001; Najman, Andersen, Bor, O'Callaghan, & Williams, 2000). Nevertheless, each of these categories is discussed individually.

Baby blues

The mildest and most prevalent of the three disorders is the 'perinatal depression' or 'baby blues' which is characterised by a transient change in mood that occurs in the first few days postpartum and typically lasts from 24 to 48 hours. Symptoms include weepiness, irritability, insomnia, anxiety, and depression (Boath & Henshaw, 2001; Miller, 2002). Prevalence rates range from 26%-85% and it is so common that it is often regarded as a normal reaction resulting from the hormonal changes immediately following childbirth (Boath & Henshaw, 2001; Crawley, 1998). There is no determined treatment provided, aside from support, assurance and practical help in order for the mother to rest sufficiently (Crawley, 1998; Di Mascio, Kent, Fiander, & Lawrence, 2008; Ray & Hodnett, 2001). There have been frequent diagnosed cases of perinatal depression, or postpartum blues, which may lead to clinical postnatal depression, however this is not always the case (Boath & Henshaw, 2001; Gibson, et al., 2009). By six weeks, 64% of

women with severe baby blues show improvement, yet in the study conducted by Hannah et al. (1992), nearly half of mothers with postnatal depression had initially suffered severe baby blues.

Puerperal psychosis

In addition to the baby blues, the most severe form of perinatal mental disorder is puerperal psychosis which is an extremely incapacitating, but a less common disorder (Boath & Henshaw, 2001). This type of PND occurs in only one or two in every 1000 childbearing women (Boath & Henshaw, 2001). Puerperal psychosis has a propensity to occur very closely after childbirth and is characterised by severe depression, mania, hallucinations or delusions. The severity of the symptoms usually requires that the woman require hospitalisation (Boath & Henshaw, 2001).

Postnatal depression

Finally, the intermediate form, and the focus of the review, is postnatal depression and is the least defined of the three disorders (Boath & Henshaw, 2001). Unlike the baby blues and puerperal psychosis which are distinguished from depression by childbirth, the evidence that postnatal depression is a distinct syndrome, or related to reproduction, is argued to be unconvincing (Boath & Henshaw, 2001). Much debate has centred on whether postnatal depression is an 'atypical' disorder or just depression occurring within the context of an 'incidental puerperium' (Boath & Henshaw, 2001). Nevertheless, it is important to consider postnatal depression as different from depression at other times, as postnatal depression has a predictable time of onset (Boath & Henshaw, 2001). The DSM-IV and ICD-10 criteria for diagnosing major depression allow for physicians to note the onset of symptoms within the postnatal period, which is between four to six weeks following the birth (Almond, 2009).

Incidence of postnatal depression

Postnatal Depression is very common among women. So common in fact, that Friedan (1963) documented this phenomenon in her book, *The Feminine Mystique*. Over the years, not even the feminist movement could change the rates of depression. These rates are typically reported to be as high as 10%-25% of all women who have given birth, although there is a wide variability of reported rates (Craig, et al., 2005; Honey, Bennett, & Morgan, 2002; Miller, 2002). These rates of PND commonly occur across many different countries and cultures. Epidemiological studies have been carried out in low and middle income countries and have found that PND exists in most countries around the globe (Almond, 2009). Halbreich and Karkun (2006) appraised 143 studies conducted in 40 countries and concluded the commonly stated incidence of 15% is a gross underestimate and cannot apply to developing countries where they suggest the prevalence can be as high as 60% (Almond, 2009; Halbreich & Karkun, 2006).

It was shown that most of the studies used the Edinburgh Postnatal Depression Scale to assist the diagnosis and provide consistency in cross-country comparisons. Therefore, the likelihood of PND is more prevalent in lower socio-economic areas and countries with the severity being much higher than that of mid to high socio-economic areas and countries (Craig, et al., 2005). Regardless of the debate, the prevalence of PND has been shown to be most commonly reported at between 10%-15% of women (Honey, et al., 2002). This approximately equates to one in seven women will experience some level of PND within the first year of giving birth (Friedman & Resnick, 2009).

Rural incidence

In addition to the incidence of PND, the experience of PND in rural areas is less well understood (Boyce, Johnstone, Hickey, Morris-Yates, & Harris, 2001). However, the study conducted by Boyce (2001) has

suggested that rural Australian women are 1.6 times more likely to develop PND than urban women. A lack of specialist mental health professionals is a major obstacle to the provision of psychological therapies for treatment of PND in rural areas, where many women do not have access to specialists or group therapies (Craig, et al., 2005). This form of therapy would be beneficial to women as well as their families and financially for the government (Craig, et al., 2005). It is argued if women could, no matter where they reside, prevent or at least self-treat PND it may save them and their families added financial burden as well as the burden of separation for treatment (Craig, et al., 2005). The key is education, the more that is known about PND and its causes the potentially easier it may be to alleviate its symptoms and reduce the time away from the newborn infant or reduce the economic cost to the family and community as women are able to return home or even to work (Beck, 1999). This therefore requires further research into the field to determine the most productive and cost effective methods to alleviate PND and developing these methods so they are accessible to all.

Diagnosis

As previously highlighted, the principle method of diagnosis is the Edinburgh Postnatal Depression Scale (EPDS) administered to mothers by general practitioners or child health nurses at six to eight weeks postpartum (Gibson, et al., 2009). This is a 10 question, self-reported questionnaire in which women are asked to rate how they have felt in the last 10 days. Each question is scored 0–3 (resulting range 0–30) and completion takes around five minutes (Gibson, et al., 2009). However, the EPDS is only a screening instrument and a subsequent clinical diagnosis must be made by an appropriately trained health professional (Gibson, et al., 2009; Najman, et al., 2000). Generally, women who receive the questionnaire are positive about the screening however, some reservations are held. In addition, it has been argued women might underscore so as not to have PND and therefore avoid the stigma of having a mental health disorder (Poole, Mason, & Osborn, 2006).

The EPDS has been translated into, and validated in, many languages other than English (Gibson, et al., 2009). Screening for PND is currently recommended in Australia and the USA, but not the UK. In the UK, the policy has shifted towards opportunistic case finding for PND (Gibson, et al., 2009). The Edinburgh Depression Scale, developed by Cox et al., was first published in 1987 and has been used widely across varying parts of the globe with similar results, making the questionnaire favourable for detecting PND (Craig, et al., 2005; Gibson, et al., 2009). Despite being widely used and tested it has been argued there are flaws with the accuracy of the statistics, as the questionnaire is self-reported and language and culture play a part in the answer to the questions (Craig, et al., 2005; Gibson, et al., 2009). Thus, false positives as well as false negatives may occur in some instances (Gibson, et al., 2009). It has been noted, some women may not answer the questions accurately as fear of stigma or lack of understanding arises (Craig, et al., 2005). There are other testing devices that are used by psychiatrists and other medical clinicians to accurately diagnose PND however, these require specialist training to administer and analyse results. The EPDS is a preliminary diagnostic test aimed at providing a basis for diagnosis and treatment of PND (Gibson, et al., 2009).

Treatments available for postnatal depression

As previously outlined, there are no known causes but several risk factors indicating a probability of developing PND. The most commonly noted risk factors, or predictors, that have been associated with PND are; prenatal depression, childcare stress, life stress, social support, prenatal anxiety, postpartum blues, marital satisfaction, infant temperament, previous depression history, socioeconomic status, self-esteem, marital status, and unplanned/unwanted pregnancy (Beck, 2001; Miller, 2002).

Women with postnatal depression have been reported to be poor at seeking appropriate help. A study conducted by Whitten (1996) showed 90% of women tested recognised something was wrong but only a third realised they were depressed, and more than 80% had not reported their symptoms to a health professional. It is up to the General Practitioner or child health nurse to test and ensure their patients are not exhibiting symptoms of postnatal depression. Formal screening tests, such as the EPNDS, detect the problem better than unstructured questioning (Crawley, 1998).

The treatments for PND are varied but few and most require further consultation by a specialist. These treatments fall under four main categories which include, pharmacological, psychological, psychosocial therapy or complementary and alternative therapies (Boath & Henshaw, 2001). The western world is becoming more accepting of complementary and alternative therapies and its use as well as the use of more common forms of treatment giving the mother more suitable options for treatment. Yoga, meditation, massage, music therapy and even acupuncture have been trialled with success in several case studies relating to clinical depression covering the life span. Nevertheless, very little research has been carried out on the treatment of postnatal depression (Boath & Henshaw, 2001; Di Mascio, et al., 2008).

The aim of treating PND is to decrease symptoms of depression and consequences of depression and to ensure infant exposure to both maternal depression and to psychotropic medications is minimised (Friedman & Resnick, 2009). The clinician determines the depressed mother's level of distress and the functional impact on her parenting. Does the mother require inpatient psychiatric treatment (if she is suicidal or homicidal or quite severely impaired) or can she be managed on an outpatient basis with close follow-up? Consideration should also be given to what support system she has in place and her willingness to ask others for needed assistance. Arranging for home visits by a visiting nurse may be very helpful (Di Mascio, et al., 2008; Friedman & Resnick, 2009). The treatment of depression in the postpartum time period is similar to the treatment of depression in general (Friedman & Resnick, 2009).

The use of antidepressants is the most widely accepted therapy after diagnosis despite side effects to both the mother and baby (Boath & Henshaw, 2001). These medications come with side effects such as drowsiness and headaches as well as the excretion of the medication into the breast milk warranting the cessation of breastfeeding in some cases (Boath & Henshaw, 2001; Crawley, 1998; Friedman & Resnick, 2009; Miller, 2002). These are not mild side effects to a new mother as they may greatly hinder her day to day activity and have lasting effects on her baby. Therefore, the use of antidepressants is usually reserved for those with moderate to severe cases of PND as the benefits outweigh the potential risks (Friedman & Resnick, 2009).

Psychotherapy and psychosocial therapies have also shown a benefit to mothers with PND. These therapies usually include one-on-one counselling with an accredited therapist, group therapy sessions with other mothers with PND, and other similar treatments. Group treatments are frequently recommended for postpartum depression, in part because their inherent social support is often highlighted as reducing the likelihood of depression (Honey, et al., 2002). There are a range of group treatments for which beneficial outcomes are reported including support groups, counselling groups, and interpersonal therapy groups, as well as eclectic groups combining elements of mother-infant dyadic relational, Cognitive behavioural therapy (CBT), interpersonal therapy and family systems (Craig, et al., 2005; Honey, et al., 2002).

Cognitive behavioural therapy has been shown to be as effective as antidepressants in treating severe PND (Almond, 2009). Pharmacological treatments are not favoured by postnatal women and positive results for non-medical analysis show positive results for non-medical interventions too, with group therapy, inter-personnel therapy and CBT on their own showing positive and statistically significant

results (Almond, 2009). Many women have considered not taking pharmacological treatments such as antidepressants, as they list risks to both self and their baby as the principle reasons (Whitton, et al., 1996).

The social treatment of PND is based on evidence found on the social origins of the disease. There are women who strongly believe that lack of social support is more significant in contributing to PND than other factors (Almond, 2009; Cutrona & Troutman, 1986). Although there is much evidence that psychological treatments are successful most do not have the access to these interventions. Studies have shown many women, particularly women from Culturally and Linguistically Diverse (CALD) cultures as well as those in rural and remote areas face difficulties in accessing services (Almond, 2009; Craig, et al., 2005). Group therapies, whether in person, on the phone or through electronic mediums, have been shown to provide social support and assist in the eradication of social myths surrounding motherhood and parenting (Honey, et al., 2002; Najman, et al., 2000). In addition to social support, education and empathy are shared (Honey, et al., 2002; Ray & Hodnett, 2001). This occurs in group settings as well as individual settings. There does not seem to be one better program than another in this type of treatment setting however more research needs to be conducted to understand the longitudinal effects as well as best treatment options (Craig, et al., 2005; Honey, et al., 2002).

Complementary and alternative medicines (CAMs) have come to the forefront in treating many forms of ill health both mentally and physically. Yoga, massage, meditation and music therapy have been effective in relieving stress, anxiety and the amount of pain medication that patients receive (Glover, Onozawa, & Hodgkinson, 2002; Nilsson, Kokinsky, Nilsson, Sidenvall, & Enskär, 2009; Trappe, 2012). For mild to moderate PND, psychological and mind-body approaches may be more desirable than medications as they do not present risks of side effects (Honey, et al., 2002). Specifically, music has taken on a greater role in the operating theatres and recovery wards, as well as maternity suites and neonatal wards in hospitals.

MUSIC MEDICINE AND MUSIC THERAPY

Music Therapy is most commonly defined as an intervention where the therapist helps the client to promote health, using music experiences and the relationships developing through them (Erkkilä et al., 2011; Gold et al., 2011). Other programmes that use music for health-related goals, but in ways that do not qualify as music therapy may be described as music medicine (Gold, et al., 2011). Music therapy is defined further as “an interpersonal process in which the therapist uses music and all of its facets – physical, emotional, mental, social aesthetic and spiritual - to help patients to improve, restore or maintain health” (Bruscia, 1991, p. 5). However, Chan, Wong and Thayala (2011, p. 333) state, “Music therapy... can be provided without a music therapist, and a preliminary literature search revealed a substantial number of studies that used ‘music listening’, without a theoretical framework or therapist involvement, as a form of music intervention.” As such, there is some discrepancy as to the definition of music therapy versus music medicine. Despite this discrepancy, in the context of the article, the term music therapy will be used.

Receptive versus active music therapy

Music therapy interventions are diverse however, can be categorized as ‘active’, where people re-create, improvise or compose music, and ‘receptive’, or passive, in which they merely listen to music (Maratos, Gold, Wang, & Crawford, 2008). Receptive music therapy is more likely to be influenced by “cognitive-behavioural or humanistic traditions” (Maratos, et al., 2008, p. 3) and may involve performance of an additional activity while listening to live or recorded music such as relaxation,

meditation, movement, drawing or reminiscing (Maratos, et al., 2008). It has been suggested that this form of music therapy can help reduce stress, soothe pain, and energise the body (Bruscia, 1991).

Active music therapy includes clinical improvisation techniques to stimulate or guide or respond to the patient who may use voice or any musical instrument of choice within the patient's capability (Maratos, et al., 2008). The music is often improvisational and many are psycho-analytically informed (Maratos, et al., 2008). The basis of this action is to allow the patient to express emotions in a non-verbal way (Maratos, et al., 2008). Often a combination of active and receptive methods are used depending on the needs of the person, the therapist's training and the issues to be resolved (Maratos, et al., 2008). Music therapy is delivered over a range of time periods from single sessions to several years.

Intensity of active music therapy varies from "daily to weekly to monthly sessions" (Maratos, et al., 2008, p. 3). Patients may be seen individually or in a group setting. Music can enhance the non-verbal expression of emotion and can reach people's inner feelings without being threatening as well as be a tool for emotional catharsis (Chan, Chan, Mok, & Kwan Tse, 2009; Evans, 2010). Chan et al. (2009, p. 286) state "the use of music activity in health-care settings has ranged from acute inpatient care, including surgical care, coronary care, critical care and oncology settings, to outpatient care, including nursing home settings for agitated residents and home-care settings for patients with chronic obstructive pulmonary disease, chronic non-malignant pain, sleep disturbance, and depression". Studies from a variety of settings have frequently reported the use of music is effective (Chan, et al., 2009). Furthermore, just as attention is paid to the art that adorns the walls of hospital corridors and rooms, the soundscaping of these areas it is argued should also be addressed. A pleasing acoustic environment with appropriate music can help mask the background noise and even speed the healing process (Freidrich, 2004).

The physiological effect of music

Music is made up of a combination of frequency, beat, density, tone, rhythm, repetition, volume and lyrics (Trappe, 2012). Music may influence physiological factors like blood pressure, heart rate, respiration, electroencephalogram (EEG) measurements, body temperature and galvanic skin response (Tornek, Field, Hernandez-Reif, Miguel, & Jones, 2003). Furthermore, music is thought to influence immune and endocrine function and to relieve pain, anxiety, nausea, fatigue and depression (Tornek, et al., 2003). Music, such as that written by Mozart, with a standard 4/4 metre and tempo that mimics the heart rate—between 60-80 bpm, have been found to have psychological as well as physical effects (Chang, Chen, & Huang, 2008; Trappe, 2012). Such music having a flowing, lyrical melody, simple harmony with soft tonal colour and easy rhythm promotes a reduction of heart rate and blood pressure as well as induces relaxation in adults and children (Chang, et al., 2008).

Music used to treat depression

Positive affect have been associated with greater relative left frontal EEG activation and a negative affect associated with greater relative right frontal EEG activation (Field, Martinez, Nawrocki, Pickens, & et al., 1998). Those with chronic depression tend to have right frontal activation even during times of remission of depressed behaviour symptoms (Field, et al., 1998; Tornek, et al., 2003). It is also noted that when specific types of music such as Mozart or other music that fits into the above criteria, is played the brain wave patterns on an EEG for both sides of the brain begin to be more balanced, whereas sufferers of depression commonly have unbalanced and irregular brain activity (Field, et al., 1998; Trappe, 2012).

There has been much research supporting the use of music therapy (Bruscia, 1991). This research covers the lifespan of humans—from neonates to old age. Those in the young to adolescent age group have benefited from the use of music in everything from learning to read and write, to behaviour aides for those with mild to severe mental and physical ailments, to relaxation techniques as well as being an alternative to psychotropic medications that may have harmful and long lasting side effects. In the adult to old age years, the use of music is becoming more widely used for those with Alzheimer’s disease and dementia as well as those with respiratory or cardiac ailments. Stress and anxiety are reduced across the age spectrum from birth to palliative care and old age. When music therapy is added to the standard care of people with mild, moderate or severe depression it aids to improve their depression as well as anxiety and functioning (Erkkilä, et al., 2011).

The use of lullabies and PND

Lullabies are a universal and ancient song form that play an important role in comforting infants and providing a critical bonding experience between caregiver and infant (Cevasco, 2008; Friedman, Kaplan, Rosenthal, & Console, 2010; Hanley, 2010). Lullabies also fit the above criteria of having a standard metre, tempo that matches that of the heart (60-80bpm), it has a flowing melody and easy repetitive rhythm. Lullabies played for or sung to neonates have been found to assist in regular heart rates, blood pressure and encourage weight gain and later stimulate early language development (Creighton, 2011; Freidrich, 2004; Friedman, et al., 2010; Hanley, 2010; Robb, 1999; Trappe, 2012). Friedman et al. (2010, p. 220) continue by stating that

singing lullabies facilitates a relaxation response in mothers and can assist in their ability to cope with the many demands of motherhood. Lullaby usage in music therapy for mothers with or without diagnoses (of PND) serves a dual purpose—the lullaby and its accompanying gentle, repetitive multimodal interactions, such as patting, rocking, stroking, walking and swaying to the tempo of the music, simultaneously soothe the baby and allow the singer to release her emotions.

In addition, the use of music in the delivery suite is becoming more and more recommended as the amount of pain relief is reduced as is the stress on the mother (Bruscia, 1991).

METHODOLOGY: LITERATURE SEARCH STRATEGIES

An online literature search was conducted in October 2012, where a primary search of MEDLINE, ProQuest, PubMed, PsycInfo and Scopus databases was conducted from 1980 – 2012. This was to identify journal articles which discussed and highlighted postnatal (postpartum) depression and its treatments as well as the use of music as a treatment of all aspects of depression, specifically postnatal depression. Key word searches were used and included word combinations of: postnatal depression, postpartum depression, postnatal/postpartum depression and music, music and depression, music and medicine, music therapy, music listening. The aim was to identify articles which discussed or examined the use of music as a treatment for depression, specifically postnatal depression. A secondary manual search of the identified article’s reference list also was undertaken to identify any additionally studies which were not captured within the online databases. In addition, a subsequent online search was conducted by searching Google Scholar and Summon Search through the University of Tasmania’s library for generic literature related to the subject area. This type of search was worthy as an additional search method as it highlighted literature which was closely related to the key words and terms used. These methods yielded 43 articles and reports.

Inclusion criteria

The inclusion criteria for the current literature review included articles which were in English. The research needed to be conducted among those with clinical depression as well as those with mild to severe PND (postnatal depression) regardless of age, ethnicity or region. Lastly, the inclusion criteria for each of the articles were they needed to report on the implementation of an intervention program using music aimed at improving the psychological health of the depressed postnatal woman.

RESULTS

Music has a very powerful effect both physically and mentally upon the human body from birth to death. As the literature was reviewed it became very apparent that this instrument of healing has been underused and understudied. The 43 journal articles and reports each cited the debilitating effects of depression as well as music's power over mind and body; however more research is needed to understand its complexities. Each of the articles were further reviewed and 22 articles and reports excluded as they were government and organisational reports or articles which did not contain research regarding music therapy, but were surveys, supplementary research or discussed PND and health outcomes. A further six articles were excluded, as they were systematic literature or Cochrane reviews, five of which were reviews regarding interventions and programs for individuals with PND or the use of music therapy (Boath & Henshaw, 2001; Bruscia, 1991; Chan, et al., 2011; Creighton, 2011; Maratos, et al., 2008), while the remaining literature review specifically discussed the validation of the EPDS (Gibson, et al., 2009).

Within the remaining 15 articles, there were four studies which referred to the use and effects of music on neonates and infants (Cevasco, 2008; Friedman, et al., 2010; Hanley, 2010; Robb, 1999). In addition, each of these articles referred to and discussed the mother's well-being. One single study discussed the use of music to relieve pain and anxiety in post-operative paediatric patients (Nilsson, et al., 2009). An additional study examined the use of music to address depression in adolescents (Field, et al., 1998), while eight studies discussed the use of music for the treatment for depression, pain and anxiety in adults and the elderly (Chan, et al., 2009; Chang, et al., 2008; Erkkilä, et al., 2011; Evans, 2010; Freidrich, 2004; Gold, et al., 2011; Tornek, et al., 2003; Trappe, 2012).

Regardless of the extensive search of the literature there were no journal articles citing any research which related to the use of music as an intervention for women specifically with postnatal depression, particularly those in rural areas. It was alluded to in several articles; yet this was not the focus of their research or discussion. Nevertheless, it must be noted, one study was conducted by Friedman, et al. (2010) in Cleveland, Ohio, which studied the use of lullabies for antenatal and postnatal women with mental illness. However, this research had examined all forms of mental illness in postnatal women, including both psychotic and non-psychotic conditions, of which PND was included but not exclusively studied.

DISCUSSION

Within the literature very few papers exist, which highlight music therapy or music medicine programs and outcomes that specifically target the treatment of women with PND. This may be due to music therapy and music medicine is at its early stages of being sufficiently well-defined, researched and specifically developed for the use of treating women with PND (Allison, 1991). Currently, there are two distinct groups of research which were found within the literature. Firstly, these include research which

examined the effectiveness of common treatments for those individuals with PND, yet did not use music as an intervention. Conversely, the second group of research assessed the use of music as a treatment for patients with depression, anxiety and stress. However, many of these music interventions or programs were pilot studies which required greater development and evaluation and were not geared specifically for women with PND.

From the current literature, what is also evident is more research is required to determine the effectiveness of music as an intervention. It had been noted by previous research that larger study cohorts and more quantifiable evidence and data are required. This remains problematic as study conditions are not always identical or possible to be reproduced. For example, a woman in labour for the first time will never have the first labour experience again. In addition, music which may have been helpful to ease pain and anxiety in the first labour experience may not have the same effect in subsequent labour experiences. Therefore, it is also problematic to determine if a woman would experience the same degree of pain and anxiety if music is used or absent as an intervention (Bruscia, 1991).

Despite the challenges in measuring and understanding the effectiveness and measurability of music as an intervention, the single research found in the current literature review, which was conducted by, Friedman, et al. (2010), highlighted the use of music as an effective intervention for both mother and baby. Depending on the severity of the depression, the mother's ability to care for herself and her child may be negatively affected. Furthermore, symptoms of mental illness may limit the bonding between the mother and baby due to insensitivity to the "infant's cues, insecure attachments, signs of chronic stress" (Friedman, et al., 2010, p. 219) and the infant's difficulty with cognitive development. Friedman, et al. (2010) also stated that singing lullabies facilitates a relaxation response in mothers and can assist in their ability to cope with the many demands of motherhood. Lullaby use in music therapy for mothers with or without diagnoses of mental disorders serves a dual purpose—to soothe the child and allow the mother to release her emotions. The mothers who sang lullabies to their child reported improved mother-infant bonding, decreased stress and anxiety and a significant increase in relaxation which leads to a decrease in the babies physiological signs of chronic stress (Friedman, et al., 2010).

At the conclusion of the literature review, a number of specific and vital questions were raised. If music, which is accessible by all, works to aid in the reduction of depression, stress and anxiety, does it have the potential to alleviate the symptoms of PND as well as establish greater bonds between mother and child? If so, why is this not being used more readily? The current review has highlighted that a large silence in the literature exists and further research is required to be conducted to answer these vital questions.

CONCLUSION

Postnatal depression is a debilitating condition which affects between 15%-20% of women who give birth. Any form of depression is debilitating however, for mothers this is particularly difficult as demands change with the care of a new baby. The use of the EPDS by medical professionals is used as a guide to diagnosis however, under-diagnosis can occur as a mother may attempt to avert diagnosis for fear of stigma attached to PND and therefore may not complete the EPDS test accurately. The successful treatment of PND is largely dependent upon early diagnosis.

There are three main treatments of PND, pharmacological, psychological and psychosocial, although other holistic approaches are becoming more accepted. Music therapy, or music medicine, is just one approach that may prove to be an effective method to relieve the symptoms of PND, however more

research needs to be conducted. Music therapy can be achieved on an individual or group setting with or without a therapist involved. Although this is a relatively new treatment in the western world, music is one of the oldest art forms and is often sought for relief from stressors before any other art form (Freidrich, 2004).

A literature review was conducted which demonstrated currently there is no specific research aimed at determining if music as an intervention has a positive outcome on women who are diagnosed and experience PND. The current review has highlighted that a large silence in the literature exists and further research is required to be conducted to determine music's effectiveness as an intervention for PND.

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