

Effects of Music on Postnatal Depression among Postnatal Mothers

Angel Rajakumari .G¹, Sheela .R²

¹Professor, Department of obstetrics and Gynecology, Annai Dora College of Nursing, Aundipatty, Tamilnadu, India

²Asst. Professor, Department of obstetrics and Gynecology, Vignesh Nursing College, Tiruvannamalai, Tamilnadu, India

*Corresponding Author: Angel Rajakumari .G

Abstract: *Aim: To evaluate the effectiveness of music therapy in terms of level of postnatal depression among postnatal mothers. Participants and setting: The study was conducted in Vijayalakshmi Hospital, in suryapet in with 700 annual births. The postnatal mothers were recruited and were allocated by non-probability purposive sampling technique into the two arms of the study, but only 30 in study and 30 in control group participants. Intervention: music was given by investigator for 20 minutes again the same step is repeated in a 10 minutes interval. Before starting the intervention, pre assessment level of depression was done in both experiment and control group. Post test was assessed without administering the music for the control group. In the experimental group, the investigator assessed the level of depression by using modified Beck's depression Scale. Measurement and findings: The postnatal mothers completed the demographic and obstetrical information and postnatal depression was measured by The Beck's Depression scale Inventory to measure presence and degree of depression in postnatal mothers. This study revealed that there was high significant difference found in postnatal depression at $p < 0.001$ level between experimental group. Conclusion: The study concluded that, clinical implementation of music therapy usage during postpartum period could be an effective non pharmacological intervention in reducing depression.*

Keywords: Music therapy, postnatal depression, postnatal mothers, effectiveness

1. Introduction

Postpartum depression (PPD) is mainly due to sudden and significant hormonal changes that occur immediately after birth. Thus, the levels of female hormones, like estrogen and progesterone, fall sharply in the hours following birth. These reductions can induce the depressive state, just as only small hormonal changes may trigger mental dysphasia and tension before menstruation. Also, thyroid hormone levels can drop sharply after birth, thus developing a thyroid deficiency that can lead to depression. At the initiation of breastfeeding, uninhibited pituitary activity and increased levels of prolactin are also due to the decrease of dopamine in certain brain regions. As we know, decreased dopamine is linked with the onset of depressive symptoms, anxiety, and obsessive thoughts. However, Edwards showed in a study that increased levels of placental corticotrophin-releasing hormone (CRH) during the 25th week of pregnancy can be used as a marker of a possible development of PPD.

Postpartum depression (PPD) is a mood disorder that occurs in about 10 to 15 percent of new mothers, and should be differentiated from milder forms of the more common "postpartum blues." The impact of PPD is significant not only to the mother, but also to the baby. Through an effective screening process during the antipartum and postpartum periods, secondary prevention of PPD is possible, i.e. the prevention of progression from mild blues to more serious depression. This article presents an overview of PPD, early screening for PPD, and methods of secondary prevention. The Appendix provides a list of organizations in this region which offer services designed to prevent or help resolve this problem.

Postpartum depression may lead mothers to be inconsistent with childcare. Women diagnosed with postpartum

depression often focus more on the negative events of childcare, resulting in poor coping strategies. There are four groups of coping methods, each divided into a different style of coping subgroups. Avoidance coping is one of the most common strategies used. It consists of denial and behavioral disengagement subgroups (for example, an avoidant mother might not respond to her baby crying). This strategy however, does not resolve any problems and ends up negatively impacting the mother's mood, similarly of the other coping strategies used.

- Postpartum Obsessive Compulsive Disorder (PPOCD) is obsessive, unwanted thoughts with accompanying behaviors. It is important to note that women recognize their obsessions as their own thoughts and feelings and understand that follow-through would be wrong. They may even construct elaborate schemes to avoid situations in which thoughts might become actions (i.e., removing all the knives from the home), yet often act upon compulsive rituals (i.e., changing the baby even when dry).
- Postpartum Post Traumatic Stress Disorder (PPPTSD) is the result of birth trauma involving threatened or actual serious injury or death to the mother or her infant (5.6% of all postpartum women), resulting from feelings of powerlessness or ignored emotional needs during her tenure at the hospital. Symptoms may include nightmares, flashbacks, exaggerated startle response, anger, or difficulty sleeping and/or concentrating. Women may be so haunted by the pain and stress of their labor and delivery that they avoid driving anywhere nears the hospital where they gave birth.
- Postpartum Psychosis (PPP) is the most serious, but least common, of all postpartum mood disorders. Representing one to two per thousand deliveries and occurring within three months of delivery, it is associated with delusions, loss of touch with reality, auditory and visual

hallucinations, extreme agitation, confusion, inability to eat or sleep, exhilaration, racing thoughts, rapid speech, rapid mood swings, paranoia, and suicidal and/or infanticidal ideations. PPP warrants immediate hospitalization and treatment. PPP is strongly associated with bipolar disorder and has a strong genetic concordance among bipolar sisters.¹ When contrasted with PPOCD, women suffering from PPP are not aware that their thoughts and feelings are their own and often act on their delusional inclinations, 5% of which result in infanticide and/or suicide.⁷ It is thought that delusional guilt about personal inability to care for or love the child precipitates “altruistic” infanticide, and 62% of mothers who kill their babies go on to commit suicide. Experts believe that infanticide is actually part of a larger suicidal scheme. Despite its severity, women diagnosed with and treated for PPP have a good prognosis and frequently achieve remission.

Mantle, 2003, stated that postnatal depression is a serious and debilitating condition which affects, at a conservative estimate, 10% of postnatal mothers. It can be difficult to identify due to the reluctance of some women to acknowledge their feelings. The Edinburgh Postnatal Depression Scale was developed to facilitate the elicitation of negative mood, however, it does not translate adequately into other languages or cultures. To address this problem the dosha assessment tool for postnatal depression was developed. This tool is aimed at women who are more familiar with the concepts of Ayurvedic medicine, one of the key medical systems of the Indian subcontinent. Although not yet evaluated, the tool goes some way towards the development of a culturally specific screening tool for this condition.

1.1 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.

1.2 Physiological effects 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 meter 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 color 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).

1.3 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).

2. Material and Methods

This was a randomized interventional study. The study was conducted in Vijalakshmi Hospital, Suryapet, Telugana India with 700 annual births. Postnatal mothers were recruited and were allocated by non probability purposive sampling technique into the two arms of the study. Out of 60 postnatal mothers, 30 of them were allotted to experimental group and 30 of them to control group participants completed. Music was given by investigator for 20 minutes again the same step is repeated 10 minutes interval. Postnatal depression was measured by The Beck’s depression Inventory scale to measure presence and degree of depression in postnatal mothers. Mean and standard deviation was used to compute the pre and post assessment level of stress and postnatal depression among postnatal mothers in experimental and control group. Paired ‘t’ test is used to assess the effectiveness of music therapy on labour.

2.1. Description of Research Tool

Part-I

It consists of demographic variables of the postnatal mothers such as age, education, area of residence, type of family, number of children’s and gestational age.

Part-II

The Beck’s Depression inventory scale measured by level of depression.

2.2. Scoring Technique

Part-II

Scoring Key

With respect Beck's Depression Inventory the Scoring was designed as follows:

0- <50% - Mild Depression
50% - 75% - Moderately Depression.
Above >75% - Severely Depression.

3. Results

Table 1: Comparison of pre and post- assessment level of postnatal depression of postnatal mother received music therapy. N=30

Session	Experimental Group				't' value
	Pre assessment		Post assessment		
	Mean	S.D	Mean	S.D	
Session I	8.07	0.64	5.6	1.06	10.92*** (S)
Session II	7.83	0.692	5.53	0.719	12.62***(S)

***p<0.001 level, S – Significant

The above table 1 shows that the 't' values in session I and session II were 10.92 and 12.62 which was significant at p<0.001 level respectively. It reveals that the postnatal mother's level of depression has reduced after music therapy. There was a significant reduction in the level of depression among postnatal mothers after music therapy.

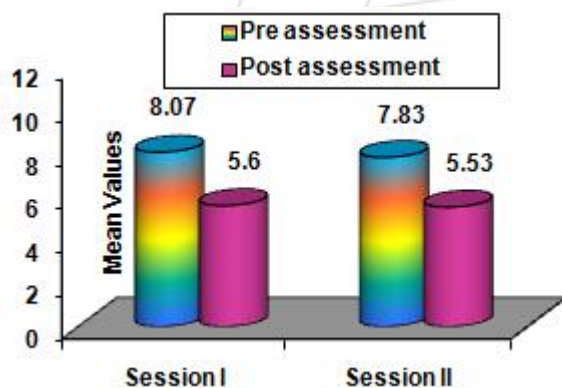


Figure 1: Comparison of pre and post assessment level of postnatal depression of postnatal mothers received music therapy

Table 2: Comparison of pre and post-assessment level of postnatal depression of the postnatal mothers in the experimental and control group

N=60

Group	Pre assessment		Post assessment		't' value
	A. Mean	S.D	Mean	S.D	
Experimental	9.29	0.688	5.93	0.968	15.49*** (S)
Control	9.56	0.608	9.67	0.607	0.70

***p<0.001 level, S – Significant

The above table shows that the obtained value in the experimental group was 15.49, which was significant at p<0.001 level and the 't' value of 0.70 in the control group was not significant at any level.

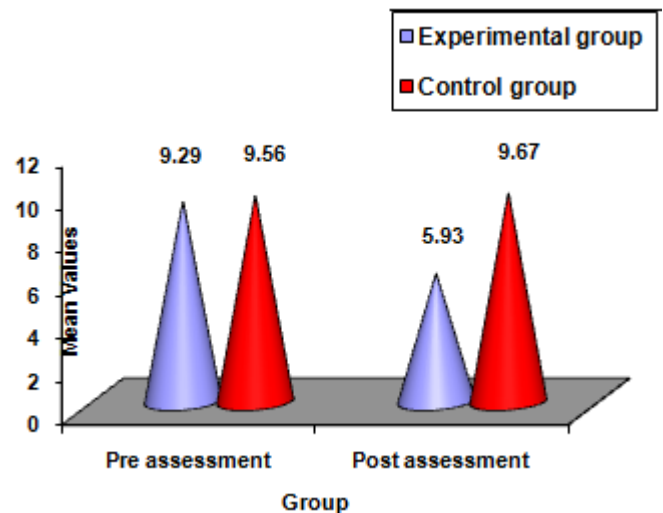


Figure 2: Comparison of pre and post-assessment level of postnatal depression of postnatal mothers in the experimental and control group

4. Discussion

Comparison of pre and post assessment results revealed a 't' value in session I and the 't' value was and in section II the 't' value was 10.92 which were significant at p<0.001 level respectively. It reveals that the postnatal mother's postnatal depression level was reduced after music therapy. Therefore, music therapy can be used as a safe and effective tool to reduce the intensity and the unpleasantness of depression due to early labour contraction.

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 International Journal of Innovative Interdisciplinary Research 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.

5. Conclusion

The study concluded that labour process is a physiological and psychological phenomenon in which almost all women experiences anxiety and postnatal depression. The postnatal mothers who used the music therapy as a relaxation technique shows the decreased level of postnatal depression. The postnatal mothers who had not used the music therapy showed increased level of depression.

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Author Profile



Angel Rajakumari .G. is Professor, Department of Obstetrics and gynecology Nursing, Annai Dora College of Nursing, Aundipatty, Tamilnadu, India.



Sheela .R is Asst. Professor, Vignesh Nursing College, Tiruvanamallai, Tamilnadu, India