EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF MUSIC THERAPY ON AMOUNT OF BREAST MILK EXPRESSED AND ANXIETY LEVEL AMONG POSTNATAL MOTHERS

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ABSTRACT

Human milk is produced naturally by the mother's body, providing the healthiest, most natural food for human infants at essentially no cost. Breast milk provides both long term and short term benefits to infants. Mothers, whose babies are born, are often scared and nervous. Because of mothers various reaction to birth of child will have stress, anxiety and other illness, may affect the production of breast milk. The use of music as a complementary tool in health promotion has recently been reported in medical literature. Music therapy has shown to reduce stress for parents and new born. **The objectives** of the study are to find the effect of music therapy on amount of breast milk expressed 2. Effect of music therapy on level of anxiety among postnatal mothers 3. Co-related the effect of music therapy on amount of expressed breast milk and level of anxiety among post natal mothers. **Methodology:** 30 postnatal mothers' samples were selected by lottery method using random sampling technique in postnatal wards admitted at R.L.J Hospital and research centre, kolar. **Results** showed that in experimental group there was Stastically significant' t' [2.74(df14)] increase in volume of breast milk secreted compared to control group at 0.05 level of significance. Level of anxiety was reduced in experimental group't' [-7.009(df14)] compared to control group. And there was negative correlation between amount of milk expressed and level of anxiety. That is, if anxiety level is increased there will be a decreased in the amount of breast milk expressed. **Conclusion:** music therapy was effective in reducing anxiety among postnatal mothers and increases breast milk secretion.

KEYWORDS: Postnatal mothers, breast-milk, music therapy, anxiety, experimental study.

INTRODUCTION

Breast feeding is the best natural feeding to newborn and breast milk is the best milk. The basic food of infant is mother's milk. Breast feeding is the most effective way to provide a baby with a caring environment and complete food. It meets the nutritional as well as psychological needs of infants. Breast feeding is safest, cheapest and best protective food for infants. Breast feeding improves metabolic efficiency and satisfaction with the sense of fulfillment of mother.[1]

Inadequate milk supply is a major problem for both mothers and infants and is the most frequently cited reason for discontinuation of breast feeding in the NICU and after discharge. The degree of inconsistency breast milk output of postnatal mothers suggests that there are many causes for lactation insuffiency, and thus many avenues for intervention.[2] Music therapy offers a long history of clinical proactive and research studies have conducted on music that supports in reducing anxiety level.[3]

Music therapy emphasized the fact that music is widely used to enhance well-being, reduce stress. It improves physiological function of all age group irrespective of disease conditions and procedures. Music also improves the quality of life for patients receiving palliative care, enhancing a sense of comfort and relaxation.[4]

NEED FOR THE STUDY

The promotion of breast feeding is essential for reducing infant mortality rate in worldwide. The milk produced by the mother of a preterm new born infant in the first four weeks after delivery contains a higher concentration of nitrogen, proteins with immunological functions, total lipids, medium-chain fatty acids, vitamins A,D and E, Calcium, sodium, and energy than that produced by mothers of a full-term infant. If the baby can't suck directly at breast, expressed milk should be given to the baby.[1]

Mothers, whose babies are born prematurely, are often scared and nervous. Because of mothers various reactions to preterm birth such as stress, anxiety and other illness, the mother may unable to express sufficient amount of milk to exclusively feed their infants.[5]

In one earlier study, researchers examined that effect of guided relaxation audiotape on the volume and fat content of milk expressed by mothers of premature infants. The researchers measured one expression of breast milk at the hospital approximately one week after release.

The audiotape improved volume but no fat content, and the volume of breast milk was correlated with number of times the mothers listened to the audiotape.[6]

Based on the review of literatures available we felt to provide music therapy that diverts the mind of postnatal mothers in reducing anxiety and improves volume of breast milk secretion.

MATERIAL AND METHODS

An Experimental research study was conducted on 30 postnatal mothers who were selected by simple random technique using lottery method and divided them to 15 experimental and 15 control group respectively in postnatal wards at R.L.J.H & R.C, Kolar. Samples were selected by inclusion and exclusion criteria. Data was collected by using observation checklist to measure amount of milk expressed and anxiety level was assessed by using standardized Hamilton anxiety scale.

INCLUSION CRITERIA

1. Mothers who do not have any feeding problems and no breast complication.

2. No nipple problems like cracked nipples, inverted nipples and retracted nipples.

EXCLUSION CRITERIA

1. Mothers who do not have adequate milk secretion.

2. Mothers who are on treatment for milk secretion.

3. Mothers who are not willing to participate in the study.

4. Mothers who have hearing problem.

Datal collection methods

1. Permission was obtained from the head of the institution, hospital medical superintendent and HOD of pediatric department and OBG department of R.L.J.H & R.C.

2. Written consent from the participants was taken.

3. 30 participants were selected by simple random sampling technique using lottery method and divided into 15 experimental and 15 control groups.

4. First three days (i.e. after 2nd postnatal day) pretest was done where both experimental and control group was not given any intervention and amount of milk expressed and level of anxiety was measured using observation checklist and standardized Hamilton anxiety scale.

5. From fourth day participants of experimental group were given separate room to express the milk where music therapy was given and participants of control group were given separate room to express breast milk without music therapy.

6. 30 minutes time was given for both the group mothers to expresses the breast milk from each breast. Total of one hour duration.

7. Data was collected 15 days after pretest.

8. After expressing the breast milk, amount was measured by ounce glasses of both the groups and anxiety was assessed by standardized Hamilton anxiety scale.

9. Data was tabulated and analyzed by descriptive statistics, rates and inter rate scale, T test inferential statics-coefficient of correlation, unpaired T test.

RESULTS

Major findings of the study are as follows

1.a) Findings related to social demographic variables of postnatal mothers in experimental group showed that

Majority 9(60%) postnatal mothers belong to 21-25 years age group.

Majority 7(46.6%) had secondary education

All 15(100%) postnatal mothers were housewives.

Majority 10(66.6%) resides in rural area

Maximum 10(66.6%) had family income between Rs/-5001 to Rs/- 15,000.

Majority 8(53.3%) belongs to nuclear family.

Majority 8(53.3%) belongs to mixed diet.

Maximum 9(60%) are multipara mothers.

Majority 8(53.3%) had normal vaginal delivery.

All 15(100%) had no marital or family problems.

1. b) Findings related to social demographic variables of postnatal mothers in control group showed that

Majority 9(60%) postnatal mothers belong to 21-25 years age group.

Majority 12(80%) had primary and secondary education respectively.

Majority 13(86.6%) postnatal mothers were housewives.

Majority 10(66.6%) resides in rural area

Maximum 7(46.6%) had family income between Rs/-10,000 to Rs/- 15,000.

Majority 8(53.3%) belongs joint family.

Majority 8(53.3%) belongs to vegetrian diet.

Maximum 9(60%) are primi-para mothers.

Majority 8(53.3%) had normal vaginal delivery.

Majority 14(93.3%) had no marital or family problems.

2. Findings related to amount of expressed breast milk before and after music therapy in experimental and control group.

In experimental group the findings showed that calculated't' value (20.916) was more than table value (0.949) at 0.05 level of significance. In control group calculated't' value   (-11.582) was less than table't' value (0.84). Hence study showed that music therapy was effective in increasing the volume of breast milk expressed.

3. Findings related to level of anxiety among postnatal mothers in experimental and control group before and after music therapy.

In experimental group findings showed that calculated't' anxiety level (16.305) was more than table't' value (0.769). In control group findings showed that calculated 't'value (4.26) was more than table't' value (0.845). Hence findings revealed that music therapy was effective in decreasing anxiety level among experimental group.

4. Findings related to comparison between experimental and control group on amount of milk expressed.

Findings showed that there was statistically significant increase in breast milk secretion in experimental group compared to control group at 0.05 level of significance 't' value of 2.74(df 14).

5. Findings related to comparison of anxiety level between experimental and control group.

Findings showed that there was highly statistically significant't' value of -7.009 (df 14) at 0.05 level of significance.

6. Findings related to correlation between amount of milk expressed and level of anxiety in experimental and control group.

The findings of the study revealed that there was negative correlation (-20) between amount of milk expressed and level of anxiety. That is if anxiety level is increased there was decreased milk expressed.

Finally the result showed that music therapy is more effective in increasing the breast milk secretion and reducing the anxiety level among postnatal mother at 0.05 level of significance.

Table No. 1: This section deals with the distribution of samples according to frequency and percentage of socio-demographic variables in experimental and control group.

Sl. No	demographic variables	experimental group(15)		control group(15)	
		frequency	percentage	frequency	percentage
1	age in years a) below 20 years b) 21-25 years c) 26-35 years d) above 35 years	3 9 2 1	20% 60% 13.4% 6.6%	3 9 3 0	20% 60% 20% 0%
2	education a) illiterate b) primary education c) secondary education d) degree e) above degree	1 5 7 2 0	6.6% 33.4% 46.6% 13.4% 0%	2 6 6 1 0	13.4% 40% 40% 6.6% 0%
3	occupation a) house wife b) laborers c) private employee d) govt.employee e) others	15 0 0 0 0	100% 0% 0% 0% 0%	13 2 0 0 0	86.6% 13.4% 0% 0% 0%
4	residence a) urban b) rural	5 10	33.3% 66.7%	5 10	33.3% 66.7%
5	family income a) below 5000/- b) 5001-10000/- c) 10001-15000/- d) above 15000	3 5 5 2	20% 33.3% 33.3% 13.4%	2 6 7 0	13.4% 40% 46.6% 0%
6	type of family a) nuclear b) joint	8 7	53.3% 46.7%	7 8	46.7% 53.3%
7	dietary patter a) vegetarian b) mixed	7 8	46.7% 53.3%	8 7	53.3% 46.7%
8	parity a) primi para b) multi para	6 9	40% 60%	9 6	60% 40%
9	mode of delivery a) NVD b) caeserian section	11 4	73% 27%	8 7	53.3% 46.7%
10	if any mariatal or family problem a) yes b) no	0 15	 100%	1 14	6.7% 93.3%

Table No. 2: showing assessment on amount of expressed breast milk before and after music therapy in experimental and control group. N=30

parameter	day	mean		standard deviation		't'value		level at significance
		pretest	posttest	pretest	posttest	calculated	tabulated	
breast milk expression in experimental group	D1	9.70	20.13	6.21	6.41	14.07	0.94	0.05
	D2	13.06	23.53	6.87	6.36	17.90		
	D3	16.73	26.60	6.60	6.20	15.62		
	pre D1-POSTD2	9.70	23.53	6.21	6.36	23.33		
	pre D1-POSTD3	9.70	26.60	6.21	6.20	20.91		
breast milk expression in control group	D1	9.26	15.93	5.61	5.92	-8.43	0.84	0.05
	D2	12.06	18.23	6.27	6.04	-9.28		
	D3	13.06	18.13	6.80	5.28	-4.20		
	pre D1-POSTD2	9.26	18.23	5.61	6.04	-11.58		
	pre D1-POSTD3	9.26	18.13	5.61	5.28	-10.32		

TABLE 2: findings shows that there was statistically significant association between pre and post test value in experimental group(0.949) after music therapy at 0.05 level of significance and calculated value was more than table Value. in control group there was no association between pre and post test value(0.84) without music therapy at 0.05 level of significance and calculated value was less than table value. Hence music therapy was effective in increasing the volume of breast milk secretion.

Table No. 3: data pertaining to pretest and post test value of anxiety level in experimental and control group. N=30

parameter	day	mean		standard deviation		't'value		level at significance
		pretest	posttest	pretest	posttest	calculated	tabulated	
anxiety level in experimental group	D1	23.00	14.80	2.39	2.33	17.44	0.76	0.05
	D2	20.33	12.20	2.52	1.47	13.72		
	D3	17.33	9.06	2.57	1.86	16.30		
	pre D1-POSTD2	23.00	12.20	2.39	12.20	20.13		
	pre D1-POSTD3	23.00	9.06	2.39	9.06	22.17		
anxiety level in control group	D1	25.53	19.20	2.92	3.66	10.05	0.84	0.05
	D2	23.33	18.06	3.24	4.26	7.05		
	D3	21.46	18.26	2.77	4.26	4.26		
	pre D1-POSTD2	25.53	18.06	2.92	4.26	12.95		
	pre D1-POSTD3	25.53	18.26	2.92	4.26	11.70		

Table 3: findings shows that there was statistically significant association between pre and post test value of anxiety level in experimental group(0.76) after music therapy at 0.05 level of significance and calculated value was more than table value. Where as in control group there was no association between pre and post test value of anxiety level (0.845) at 0.05 level of significance and calculated value was more than table value. Hence music therapy helps to decrease anxiety level among postnatal mothers.

DISCUSSION

Comparison between breast milk expressed in postnatal mothers before and after music therapy in experimental and control group.

The major findings in experimental group revealed that the study participants had improved in amount of breast milk expressed by the use of music therapy from average mean of 13.17 to 20.36. the study findings in the control group revealed that the study participants had no marked improvement than experimental group from pre-average milk expressed to post average milk expressed from 11.47 to 17.42. similar findings was seen in the study conducted by Dr. Jayamala A, on the effectiveness of music therapy on amount of breast milk expressed and anxiety among mothers of babies admitted in NICU and SNICU at M.S Ramaiah Institute Bangalore. The study revealed that there was significant improvement in the breast milk expression after music therapy.[7]

Comparison between anxiety level of postnatal mothers before and after music therapy in the experimental and control group.

The study findings in experimental group revealed that the study participants had reduced anxiety level by the use of music therapy from average mean of 20.36 to 12.02. the study findings in the control group revealed that the study participants had no marked improvement than experimental group from pre-average anxiety level(23.45) to post average anxiety level (18.51).

A similar finding was seen in the study conducted by chlan.L, in US to test the effect of music therapy on relaxation and anxiety reduction. The findings revealed that a single music therapy session was found to be effective for reducing anxiety and promoting relaxation and also indicated decrease in heart rate and respiratory rate over the intervention period.[8]

Findings related correlation between amount of breast milk expressed and level of anxiety in experimental and control group.

The findings of the study revealed that there was negative correlation (-20) between amount of breast milk expressed and in level of anxiety. That is, if anxiety level is increased there will be a decrease in the amount of breast milk expressed. There were no sufficient studies to support these study findings.

CONCLUSION

There was consistency high in all areas included in the study compared to control group. The milk expression and anxiety after music therapy among experimental group indicated statistically significant effective in milk expression and anxiety among control group. Hence music therapy is effective in reducing the anxiety level and improving the breast milk production among postnatal mothers.

RECOMMENDATIONS

1. A similar study can be replicated on a larger sample to validate the findings of the present study.

2. Different areas in hospital like NICU, SNICU can be taken for the study.

3. A similar study can be undertaken in different settings.

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