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A Study to Assess the Effectiveness of Music Therapy and Aromatherapy on Faetomaternal Parameters Among Parturient in the Active First Stage of Labour in A Selected Hospital, Bangalore, India

Prof. Barnali Bordoloi[1], Mrs. Dipa Chetry[2]

[1]Principal, Krishnaguru Adhyatmik Viswavidylaya, Nalbari, Assam
[2]Associate Professor, Navjeevan College of Nursing, Siliguri, West Bengal

ABSTRACT

Background:

Labour is a normal physiological process of child birth. It is a process of moving the fetus, placenta and membranes out of the uterus and through the birth canal. Uterine contractions are the primary power that acts involuntarily to expel the fetus and the placenta from the uterus. Certain fetomaternal parameters such as the labour pain, dilatation of cervix and duration of labour in the maternal aspect and fetal heart rate and descent of the fetus in fetal aspect are to be observed which indicates the progress of labour. Music lowers the stress level and pain of women in labor. Aroma helps the woman to cope with fear and anxiety because it has a tranquilizing effect on the nervous system.

Methods:

Factorial design was used to evaluate the effectiveness of the music therapy and aroma therapy on fetomaternal parameters among parturient. The study was conducted in selected hospital at Bangalore. The sample consisted of 60 parturient, experimental group I-30 and experimental group II-30. Purposive sampling technique was adapted to select subjects. A numerical pain scale was used to measure labour pain and a rating scale was used to monitor and maintain the fetal heart rate, fetal descent, and cervical dilatation, duration of contraction, intensity duration of contraction and frequency of contraction of parturient

Result:

Overall Pre test and Post test Mean scores of Respondents on Pain are – In experimental group I, the mean pre test score was 37.7, the post test score after 15 minutes was 36, after 30 minutes was 32.7 and after 60 minutes was 30. In experimental group II, the mean pre test score was 40, the post test score after 15 minutes was 32.3, after 30 minutes was25.7 and after 60 minutes was 19. The obtained 't' value, during pre test is 1.10 and during post test after 15 minutes is 1.86. And, during the post test after 30 minutes and 60 minutes the obtained t value is 1.10 and 8.49 and are statistically significant at 0.05 level. Overall Pre test and Post test Mean scores of Respondents on fetomaternal parameters - In experimental group I, the mean pre test score was 40.7, the mean post test scores after 15 minutes was 40.7 after 30 minutes was

40.9and after 60 minutes was 48.9. In experimental group II, the mean pre test score was 40.7, the post test score after 15 minutes was 45.2, after 30 minutes was 50.4 and after 60 minutes mean scores was 70.9.

Conclusion:

Findings of the study score shows that there was significant decrease in level of pain and increase in the level of fetomaternal parameters of parturient of experimental group II. From this it can concluded that aroma therapy was more effective than music therapy on fetomaternal parameters among parturient.

Keywords: Fetomaternal parameters, parturient, music therapy, aroma therapy, labour.

INTRODUCTION:

Labour is a process of moving the fetus, placenta and membranes out of uterus and through the birth canal. Various changes take place in the in the women's reproductive system in the days and weeks before labour begins.

Traditionally three stages of labour are described: the first stage, the second stage and the third stage. The first stage labour is considered to last from the onset of regular uterine contraction to full dilution of cervix. The second stage lasts from the time the cervix is fully dilated to the birth of the fetus. The third stage of labour lasts from the birth of the fetus until the placenta is delivered. [1]

The fetometernal parameters refers to the labour pain, dilation of cervix and duration of labour in the maternal aspect. Fetal heart rate and descent of the foetus are the fetal aspect. Frequency of uterine contraction is refers to how often uterine contraction occurs, the time that elapses from the beginning of the contraction to the beginning of the next. Intensity of uterine contraction is the strength of a contraction at its peak. [2]

Music therapy is a technique of complementary medicine that uses music prescribed in a skilled manner by trained therapists. Programmes are designed to help patients overcome physical, emotional, intellectual, and social changes. Application ranges from improving the wellbeing of geriatric patients in nursing homes to lowering the stress level and pain of women in labour. [3]

Aromatherapy is the art and science of utilizing naturally extracted aromatic essence from plants to balance, harmonize and promote the health of body, mind and spirit. The use of aromatherapy as an alternative form of health is very popular and now also recognized for its benefit in pregnant women, during pregnancy and labour. Aromatherapy is also known to help in pain relief. The pains that come with contraction can be relieved by a massage with essential oil at labour. It also helps the woman to cope with fear and anxiety because it has tranquilizing effect on the nervous system. [4]

A study conducted on effectiveness of music therapy in terms on level of pain perception among primigravida mother revealed that music can provide a focus of attention and provide pain distraction relief for the labouring mother. The findings of the study showed that comparison of pre and post assessment 't' values in section I and the 't' value was 21.53 and in section II the 't' value was 21.05 which were significant at $p<0.001$ level. [5]

A study was conducted on effectiveness of aromatherapy in reducing pain and suffering during labour. 8058 women received aromatherapy during labour for a variety of purpose: to reduce fear, anxiety, pain, nausea and vomiting, to enhance women's sense of wellbeing and to improve contraction. 61% women received aromatherapy to relief anxiety and fear. 50% mothers found it helpful, 15 reported undesired effects associated with the use of aromatherapy. [6]

MATERIALS AND METHODS

Research Approach - Quantitative approach

Research Design- Quasi experimental pre-test post-test design
Sampling technique- Non probability purposive sampling technique
Setting of the study- The study was conducted in ESI model Hospital and KCG Hospital at Bangalore.
Sample size – - A sample size of 60 parturient was selected, where 30 parturient were in the experimental group I and 30 parturient were in the Experimental group - II.
Ethical approval was taken from the concerned authorities of the hospital and informed consent was obtained from the respondents

DESCRIPTION OF THE TOOL

The tool was divided into two parts-part A and part B. Part A consist of 11 question items related to socio-demographic variables. Part B consists of a numerical scale to measure client's labour pain and a rating scale to monitor and maintain the fetal heart rate, fetal descent, cervical dilatation, duration of contraction, intensity duration of contraction and frequency of contraction.
The tool was validated by 10 subject experts. The reliability of the tool was tested by using split half method and it was found to be reliable at r (correlation coefficient) = 0.86.

Statistical Methods

The collected data were tabulated and analyzed through descriptive statistics (frequency, percentage mean, median and standard deviation) and inferential statistics (t- test). P value < 0.05 was considered as significant.

RESULT

The study was conducted among 60 purturients. The majority of the respondents 38 (63%) were in the age group of 18 – 25 years. Majority of the respondents 33 (55%) had the educational status of primary education. Majority of the respondents 43 (72%) were housewife. Majority of the respondents 29 (48%) family income was Rs. 2,000 – Rs. 4,000

Table 1 n= 60

Aspects	Pain score (%)				Student 't' test
	Experimental Group I (n=30)		Experimental Group I (n=30)		
	Mean	SD	Mean	SD	
Pre test	37.7	10.1	40.0	8.1	1.10
Post test after 15 minutes	36.0	8.9	32.3	6.3	1.86
Post test after 30 minutes	32.7	6.4	25.7	5.7	4.47
Post test after 60 minutes	30.7	6.4	19.9	4.0	8.49

Significant at 5% Level NS : Non-significant, t (0.05,58df) = 1.96

Table 1 shows the overall mean scores of respondents on pain level in Group – I and Group II. In Experimental group I , the mean pre test score and SD were 37.7 and 10.1, the post test score and SD after 15 minutes were 36 and 8.9, after 30 minutes were 32.7 and 6.4 and after 60 minutes were 30 and 6.4.

Table 2 n= 60

Aspects	Pain score (%)				Student 't' test
	Experimental Group I (n=30)		Experimental Group I (n=30)		
	Mean	SD	Mean	SD	
Pre test	40.2	3.5	40.7	6.1	0.39NS
Post test after 15 minutes	40.7	4.5	45.2	9.9	2.27 *
Post test after 30 minutes	40.9	5.2	50.4	11.5	4.12 *
Post test after 60 minutes	48.9	14.8	70.9	12.2	8.05 *

Significant at 5% Level NS: Non-significant, t (0.05,58df) = 1.96

Table 2 shows the overall mean scores of respondents on fetomaternal parameters in Group – I and Group II. In Experimental group I, the mean pre-test score and SD were 40.7 and 6.1, the post test score and SD after 15 minutes were 45.2 and 9.9, after 30 minutes were 50.4 and 11.5 and after 60 minutes were 70.9 and 12.2. Further 't' value is 1.96, which is significant at 5% level.

Table 3 n= 60

Duration	Pain Level	Classification of Respondents				$\chi 2$ value
		Experimental Group I (n=30)		Experimental Group II (n=30)		
Pre test	Mild	13	43.3	8	26.7	1.83 NS
	Moderate	17	56.7	28	93.3	
Post test after 15 minutes	Mild	13	43.3	22	73.3	5.55*
	Moderate	17	56.7	8	26.7	
Post test after 30 minutes	Mild	23	76.7	29	96.7	5,19*
	Moderate	7	23.3	1	3.3	
Post test after 60 minutes	Mild	23	76.7	30	100.0	7.93*
	Moderate	7	23.3	0	0.0	
Total		30	100	30	100.0	

Significant at 5% Level NS : Non-significant, $\chi 2$ value (0.05,1df) = 3.84

Table 3 shows the classification of respondents on pre test to post test after 60 minutes on level of pain. In Group- I, during the pre test, 17(56.7%) had moderate pain and 13(43.3) had mild pain. During the post test after 15 minutes, 17(56.7%) had moderate pain and 13(43.3) had mild pain. During the post test after 30 minutes, 7(23.3%) had moderate pain and 23(76.7) had mild pain. During the post test after 60 minutes, 7(23.3%) had moderate pain and 23(76.7) had mild pain. Further $\chi 2$ value is 3.84, which is significant at 5% level.

DISCUSSION

The present study reveals that the Overall Pre test and Post test Mean scores of Respondents on fetomaternal parameters - In experimental group I, the mean pre test score was 40.7, the mean post test scores after 15 minutes was 40.7 after 30 minutes was 40.9 and after 60 minutes was 48.9. In experimental group II, the mean pre test score was 40.7, the post test score after 15 minutes was 45.2, after 30 minutes

was 50.4 and after 60 minutes mean scores was 70.9. During the pre test and the post test after 15 minutes, the obtained 't' value is 1.10 and is statistically significant at 0.05 level. During the post test after 30 minutes and 60 minutes the obtained 't' value and is statistically significant at 0.05 level.

A study conducted on effectiveness of lavender oil aroma inhalation on fetomaternal parameters among 60 parturient active first stage labour. The research finding revealed that there was significant reduction in the level of pain among parturient in aroma group at $p<0.001$ when compared to non aroma group. [7]

In a study, randomize women were assigned to music group and a control group. Women in the intervention group listened to soft music without lyrics for 3 hours starting early in the active phase of labour. While controlling for pre-test-scores, one way repeated measure of analysis of convenience indicated that those in the music group had significantly less sensation and distress of pain than did the control group respectively. [8]

CONCLUSION

The music therapy and aroma therapy has significant impact in decreasing the level of pain and increase in the level of fetomaternal parameters of parturient. Major Strength of this study is that it has revealed that nurse can plan music therapy and aroma therapy sessions for parturient in different stages of labour. Nurse can act as facilitator for the parturient for a comfortable labour. The weakness of the study is that the sample was drawn using a purposive sampling technique.

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