Original Research Paper

Nursing

EFFECTIVENESS OF MUSIC THERAPY ON LABOUR PAIN DURING FIRST STAGE OF LABOUR AMONG THE INTRANATAL WOMEN IN A SELECTED HOSPITAL, MANGALURU

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ABSTRACT A quasi experimental research design was carried out among 74 primigravid women were selected by simple random technique. The purpose of this study is to compare the labour pain between the intranatal women in the music and control group . VAS was used to assess the pain score at pretest, 2nd , 4th and 6th hour of intervention, Mc Gill pain questionnaire is assessed during postnatal period. Music is played from 2cm to throughout the labour in music therapy group. There is the significance difference in the labour pain between the pre intervention- 2nd hour of post intervention (p value is 0.007) and 2nd - 4th hour of post intervention (p value is 0.040). The study findings revealed that the music therapy had a significant effect on labour during first four hours of the intervention.

KEYWORDS : primigravid, music therapy, VAS.

INTRODUCTION

Natural child birth is a unique aspect of association of physiologic processes with pain, discomforts and pleasure. It is a universal human experience; yet the birth can be different across cultures. Maternal death can occur during the process of labour and delivery or arise from event in labour and delivery. The birth environment affects a women experience of pain and her ability to cope with pain during labour. In 2012 the average global birth rate was 19.15 births per 1,000 total populations, compared to 20.09 per 1,000 total populations in 2007(Nayak D, Rastogi S, & Kathuri O M., 2014).

Various non pharmacological methods include supportive and consultative education and actions at pregnancy with reducing the fear of labor has positive effect on the postpartum experience. Continuous support of midwife along with observing the principles of natural delivery reduces the intensity of labor pain and its duration remarkably .The need to take up this study came up by the observation of women in labour struggling to cope up with stresss of pain during the first phase of delivery . There are many therapies which can be used to reduce the pain during labour like music therapy, breathing exercise, massage therapy, hydrotherapy and so on. Among these therapies the music is one of the non pharmacological therapy, which is being used in women to cope with labour pain, supporting this, a study was conducted by the Department of Baccalaureate and graduate nursing, eastern Kentucky University , Richmond, to show that the use of music therapy to decrease pain and anxiety during labour. This study showed that the nurses are educated on the potential benefits of music therapy among labouring women. The nurses provide music therapy to client to decrease labour pain(Baker A, Ferguson SA, Roach GD, & Dawson D.,2001).

According to Gate Control Therapy, the auditory stimulus of music triggers impulses in the brain which overrides the pain signals carried by smaller nerve fibres. This is the same effect observed by immersion in water during labour, when the stimulus of water of skin overrides those same pain signals. In addition music, which is perceived by the right brain, appears to stimulate the pituitary gland to release endorphins for decreasing pain, as well as improving mood, increasing relaxation, reducing anxiety, and assisting control and distraction.(Hosseini S E, Bagheri M, & Honarparvaran N., 2015).

Music as a treatment to reduce pain is easily provided, low cost, and safe. Although the magnitude of benefit from listening to music is small, and it should not be considered as the first line of treatment for pain relief, it can be used as a beneficial adjunct for pain relief management for women in labour. Small studies of primiparous women show music may be beneficial in the latent and active first stage of labour.(Liu Y H, Chang M Y, & Chen C H., 2010) .

Objectives of the study

1. To assess the pre-interventional pain among experimental and control group.
2. To compare the labour pain between the intranatal women in the music therapy group and control group.
3. To find the association of labour pain with selected variables.

METHODOLOGY

The research approach used was quantitative approach and research design adopted was quasi experimental, pretest- posttest research design. The study was conducted to find the effectiveness of music therapy on labour pain during first stage of labour among the intranatal women.

The study was conducted in birthing unit in Father Muller medical college hospital, Mangaluru which is a multi- specialty hospital. The population in this study included primigravid who were in first stage of labour (2cm cervical dilatation) and admitted in the birthing unit of Father Muller Medical College Hospital at the time of data collection. The sample in this study consists of 74 primigravid women who met the inclusion criteria. The selected subjects were randomly assigned to listen to music in music therapy group and control group without music therapy and on regular care (n=37 in each group) using lottery method.

The women who met the inclusion criteria were instructed regarding the study, that a soft music which was classical piano and zen piano will be played until delivery. After giving necessary instruction to the subjects, the baseline information was collected. After selecting subjects, the pre-test pain score was assessed at 2cm cervical dilatation. Then the women were made to listen to a soft music throughout the labour until delivery. Labour pain score is reassessed at 2nd, 4th and 6th hour of post intervention. McGill pain questionnaire was administered for the mothers during their postnatal period to find their subjective perception about overall pain during labour. The other group primigravid women were assessed without any intervention with routine nursing care. The data was tabulated and analysed using descriptive and inferential statistics.

RESULTS

Demographic Data

The result reveals that the majority of primigravid women in music therapy group (62.2%) were between 23-27yrs and in control group (51.4%) were between 18-22 years. Majority belongs to secondary education in music therapy (54.4%) and control group (59.5%). Majority belongs to homemaker in music therapy (78.4%) and control group (59.5%).Majority belongs to 39-40 weeks in music therapy (78.4%) and control group (75.7%).

Level of pain
Table 1: Assessment of pre interventional labour pain score of primigravid women

Group	Mean±SD	Mean percentage	't'value	'p'value
Music therapy (n=37)	2.08±0.862	20.81	2.301	0.02*
Control (n=37)	2.65±1.16	26.49		

n=74

t (72)=1.67   ***0.05 level of significance**

Table 1 shows that the obtained 't' value 2.301 was more than the table value 1.67. The difference in the labour pain score was significant at 0.05 level. There was a significant difference in the labour pain before the music therapy between the music therapy and control groups.

Table 2: Pair wise comparison between the music therapy and control group at 2nd, 4th and 6th hour.

H0: There is no significant difference between the pre test labour pain score and post test labour pain score among primigravid women in music therapy group and control group.

N=74

Labour pain	Music therapy (n=37)		Control group (n=37)			
	MD	Std deviation difference	MD	Std deviation difference	t value	p value
pre -2nd hour	-1.081	1.038	-1.730	0.962	2.789	0.007*
pre– 4th hour	-2.730	1.071	-3.000	1.054	1.094	0.278
pre– 6th hour	-4.378	1.010	-4.703	1.450	1.116	0.268
2nd – 4th hour	-1.649	0.633	-1.270	0.902	2.088	0.040*
2nd – 6th hour	-3.297	1.051	-2.973	1.384	1.135	0.260
4th – 6th hour	-1.649	0.889	-1.703	0.222	0.218	0.828

$t_{(72)}$ =1.67 , p <0.05 level of significance

The data in table 2, there is the significance difference in the labour pain between the pre intervention- 2nd hour of post intervention (p value is 0.007) and 2nd - 4th hour of post intervention (p value is 0.040), here the p<0.05 level of significance. Hence the research hypothesis is accepted and a null hypothesis is rejected. In pre intervention to 4th hour, pre intervention to 6th hour, 2nd to 6th hour of post intervention, 4th to 6th of post intervention null hypotheses is accepted and a research hypothesis is rejected.

Table 3: Area wise comparism of labour pain using Mc Gill pain questionnaire

N=37+37

Domains	Music therapy group			Control group			
	Mean±SD	Mean %		Mean±SD	Mean %	T Value	P Value
1. Sensory	19.89±3.688	47.36		23.76±3.818	56.56	4.429	0.001**
2. Affective	8.49±1.465	60.62		9.51±1.953	67.95	2.559	0.013*
3.Evaluative	3.24±1.065	64.86		3.03±1.323	60.54	0.775	0.441
4.Miscellaneous	10.11±2.246	59.46		10.05±2.297	59.14	0.102	0.919
Overall	41.73±5.491	53.50		46.35±5.488	59.42	3.621	0.001

t(72) is 1.67   p<0.05 level of significance *= significant   ** highly significant

The data in table 3 shows that mean % score in the music therapy group in sensory is 47.36% which signifies moderate pain and in affective (60.62%) , evaluative(64.86%) and miscellaneous (59.46%) which signifies severe pain. In control group is Mean % in all the 4 areas signifies severe pain. This shows the qualitative assessment of labour pain in both music therapy and control group.

Association of labour pain score with selected demographic variables of primigravid women was analysed by using chi square
H_2 – There will be an association of labour pain with selected demographic variables

The null hypothesis (H_0) was accepted stating there was no significant association of labour pain score with age, religion, education, occupation and period of gestation. Therefore the research hypothesis (H_2) rejected.

DISCUSSION
Music is effective on pain relief because of the release of endorphins. Further analysis done to compare between the groups showed that the calculated 't' value at pretest to 2hours is 2.789 and 2nd hour to 4th hour is 2.088 which is greater than table value 1.67 at 0.05 level of significance. Thus there is a significant difference in the mean post interventional score at pretest to 2nd hours and 2nd to 4th hour of interventions. Thus showing music therapy is effective till 4 hours of intervention.

In this similar study of music reduces sensation and distress of labour pain shows that the calculated t value in first hour is 4.82 and second hour is 3.91 and third hour is 3.95 which is greater than table value is 2.25. This study of music has a significant effect in decreasing both sensation and distress pain in the first hours of active phase of labour.

CONCLUSION
The women in the music therapy group had less mean labour pain score as compared to the women in the control group. The woman exposed to music therapy has significantly less perception of pain during first stage of labour. The women sensory and affective area shows moderate pain in music therapy group than in control group. Music therapy is effective in reducing the perception of labour pain among primigravid women during the first stage of labour. There was no significant association of the pre interventional pain score and the socio-demographic variables.

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