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A Comparative Study to Assess the Effectiveness of Musical Therapy and Breathing Exercises in Relieving Pain During First Stage of Labour among Primi Mothers Admitted in Labour Room in Selected Maternity Hospital, Hyderabad

Y. Nathalina Deepika

Assistant Professor. Ganga College of Nursing, Coimbatore.
Email: *dnathalina[at]gmail.com*

Abstract: ***Motherhood is a profound experience, accompanied by both immense joy and physical challenges such as labour pain. Effective, non-pharmacological interventions are essential to manage pain and promote a positive childbirth experience. This study aimed to assess and compare the effectiveness of music therapy and breathing exercises in relieving labour pain among primi mothers during the first stage of labour. A quantitative, quasi-experimental design was adopted. Sixty primi mothers were selected using purposive sampling and assigned to either the music therapy or breathing exercise group. Pain intensity was measured before and after intervention using a structured pain assessment tool. Data were analyzed using descriptive and inferential statistics, including paired t-tests and chi-square tests. Results showed a significant reduction in pain levels post-intervention in both groups (p<0.05). Music therapy was found to be slightly more effective than breathing exercises in reducing pain intensity. The study concludes that both music therapy and breathing exercises are effective, safe, non-pharmacological methods for labour pain relief, with music therapy demonstrating greater effectiveness.***

Keywords: Labour Pain, Music Therapy, Breathing Exercises, Primi Mothers, Non-pharmacological Interventions

1. Introduction

Motherhood is a divine gift, an incomparable feeling. A mother shares the most beautiful and strongest bond with her child. It makes her the happiest person on the earth; however, this happiness comes with a responsibility. Being a mother is the most wonderful experience in a woman's life. It is something that has to be gone through. The bond between a mother and her child is the most beautiful and strongest bond in the world. It makes the mother the happiest person in the universe. But it also comes with its share of responsibilities

Pregnancy is the most special experience one could ever be a part of. This goes not just for mothers, but for fathers as well. It is one of the most unique and special types of bonding and love that exists. For a woman to create, grow, and give birth to another life is rather extraordinary. There are complications such as minor ailments and other pregnancy related disorders, but when you feel the first movement, it is undeniably magical[3]. Everything from movements, kicks, hearing heartbeats and seeing ultrasound is what makes it all very special.

Labour has three stages simply known as first, second and third stage. During the first stage of labour the opening of the uterus, called the cervix, goes from being closed to fully open (or 10cm dilated). The strong, regular contractions cause the cervix to open. During the second stage of labour the baby descends down the birth canal and is born. Women during the second stage of labour assist the birth of the baby by pushing during the contractions. The third stage of labour begins after the baby is born and ends with the birth of the placenta and membranes.

As the birth approaches, a woman's body begins to prepare for the labour. Signs that women may experience prior to labour include: Show (pink mucous discharge from the vagina), engagement of the baby's head, more frequent Braxton Hicks contractions, and a change in baby's movements as they run out of space. Once conditions are right labour will commence·

Labour pains are often felt like menstrual cramps. Usually, they start sporadically, and labor doesn't actually begin until the contractions are at regular intervals. Contractions occur at regular intervals, its intensity and discomfort gradually increases. Discomfort occurs in the lower back and abdomen with increased vaginal discharge or bloody show. This is the phase where the uterus contracts more frequently and the pain is maximum. Uterine contraction occurs after every 3-5 minutes and lasts for more than a minute. The uterus becomes hard and more prominent as the pain increases and softer as the uterus relaxes. The pains sometimes start at the back and radiates down to the thighs. Later on, at the end of this stage, the pains come even more frequently.

Sensory pain for nulliparous women is often greater than that of multiparous women during early labor because their reproductive tract structures are less supple. The firmer tissue of nulliparous women results in a slower, more gradual decent. Affective pain is usually increased for nulliparous women throughout the first stage of labour.

Music therapy can help in reduction of pain and in other aspects of child birth before, during and even after a birth of a child. The application of music in pain management has become popular in past two decades. Music stimulates release

of endorphins and reduces the need for analgesic drugs. It distracts the mother from the perception of pain and relieves anxiety, and helps the mother of cope with the labour pain process.

Since the mid 1900's, music has been universally recognized and appreciated as a source of pleasure, relaxation and diversion. Di Franco (1988), stated that the "use of music for women during childbirth is not new; its soothing properties have been known for centuries". In ancient history, the Greeks were known to have played songs on the lute to expectant mothers[12].

The brain processes music in a very complex way, using several different modes, such as perceptual, emotional, cognitive, motor and autonomic. The sound waves that make up are heard and the music impinges on the cochlea to produce signals, which reach the brainstem and finally the auditory cortex of the brain[12].

Breathing technique is one of the widest, safest, and commonest methods of pain relief measures. The theory behind childbirth breathing patterns is based on the concentration required to focus on breathing. During a contraction, thought process is redirected from a pain response to breathing technique. Among various breathing exercises, patterned breathing exercise is one of the simplest. It is slow and deep breathing that increase relaxation[13]. This naturally brings about slower breathing, similar to that of during sleep. It can be used as long as possible during labour because it promotes relaxation and oxygenation[14].

WHO suggest to use Non-pharmacological approaches to relieve labour pain, these are classified as follows:(i) psychological interventions (including distraction, stress management, hypnosis, and other cognitive-behavioral interventions), (ii) acupuncture and acupressure,(iii) Transcutaneous electrical nerve stimulation,(iv)physical therapies (including massage, heat/cold, breathing exercise, physiotherapy, osteopathy, and chiropractic).

Statement of the Problem:
A Comparative Study to Assess the Effectiveness of Musical Therapy and Breathing Exercises in Relieving Pain During First Stage of Labour Among Primi Mothers Admitted in Labour Room in Selected Maternity Hospital, Hyderabad.

Objectives:
1) To assess the intensity of pain during first stage of labour among primi mothers before musical therapy and breathing exercises.
2) To determine the effectiveness of musical therapy.
3) To determine the effectiveness of breathing exercises.
4) To compare the effectiveness of musical therapy and breathing exercises among primi mothers during first stage of labour.
5) To find out the association between the effectiveness of musical therapy with selected demographic variables.
6) To find out the association between the effectiveness of breathing exercises with selected demographic variables.

2. Methodology

Methodology is a systematic way to solve the research problem. "Research Methodology defines the way pertinent information is gathered in order to answer question or analyze (Polit Hungler 1986)".[53]. The research methodology enables the researcher to project a blue print of the research undertaken. It is considered as the backbone or structure of the study. It involves the systematic procedure, by which the investigator starts from initial identification of the problem to its final conclusion. It is a sign of study how research is done scientifically.

This study deals with methodology selected by the investigator to study the effectiveness of musical therapy and breathing exercises on labour pain among primi mothers in selected maternity hospital, Hyderabad.

This study includes research approach, research design, setting of the study, variables, population, sample size, sampling technique, inclusion and exclusion criteria for sampling, content validity, development of tool, reliability, pilot study, data collection procedure, plan for data analysis and ethical considerations. The present study is aimed to evaluate the effectiveness of musical therapy and breathing exercise in reduction of pain among primi mothers during first stage of labour in selected Maternity hospital, Hyderabad.

Frequency and percentage distribution of primi mothers who are in first stage of labour in control and experimental group according in pre-test pain level

Pre Test Pain Level	Control		Experimental	
	∫	%	∫	%
Musical Therapy				
Mild	0	0	0	0
Moderate	27	90	26	86.7
Severe	3	10	4	13.3
Total	30	100	30	100
Breathing Exercise				
Mild	0	0	0	0
Moderate	28	93.3	27	90
Severe	2	6.7	3	10
Total	30	1..	30	100

The above table depicts that in musical therapy majority of primi mothers 27(90%) from control group having moderate pain while majority 26(86.7%) were from experimental group. In breathing exercise majority of primi mothers 28(93.3%) from control group having moderate pain while majority 27(90%) were from experimental group.

Frequency and percentage distribution of primi mothers who are in first stage of labour in control and experimental group according in post-test pain level

Post Test Pain Level	Control		Experimental	
	∫	%	∫	%
Musical Therapy				
Mild	0	0	5	16.7
Moderate	27	90	25	83.3
Severe	3	10	0	0
Total	30	100	30	100
Breathing Exercise				
Mild	0	0	4	13.3
Moderate	28	93.3	26	86.7
Severe	2	6.7	0	0
Total	30	100	30	100

The above table depicts that in musical therapy majority of primi mothers 27(90%) having moderate pain and 3(10%) mothers are having severe pain in control group, whereas majority 25(83.3%) of mothers are having moderate pain and 5(16.7) mothers are having mild pain in experimental group. In breathing exercise majority of primi mothers 28(93.3%) are having moderate pain and 2(6.7%) mothers are having severe pain in control group, whereas majority 27(90%) of mothers are having moderate pain and 4(13.3%) mothers are having mild pain in experimental group.

Mean and SD of patients in experimental group according to pre-test and post-test pain score of primi mothers who are in first stage of labour**.**

Test			Mean	N	Std. Deviation
Musical therapy	Exp	Pre-test pain score	5.5000	30	.60490
		Post-test pain score	4.2056	30	.70396
Breathing exercise	Exp	Pre-test pain score	5.2389	30	.62772
		Post-test pain score	4.1667	30	.36880

The above table depicts that in musical therapy the mean value and standard deviation of the pre-test and post-test pain levels of primi mothers in labour which shows that mean is 5.50, SD is 0.604 in the pre-test whereas in the post test the mean is 4.205, SD is 0.7039 in the experimental group of musical therapy. Which indicates that there is significant reduction in the pain levels among primi mothers in first stage of labour.

In breathing exercise the mean value and standard deviation of the pre-test and post-test pain levels of primi mothers in labour which shows that mean is 5.238, sd is 0.627 in the pre-test whereas in the post test the mean is 4.1667, sd is 0.368 in the experimental group of breathing exercise. Which indicates that there is significant reduction in the pain levels among primi mothers in first stage of labour.

T –test: Mean and SD of patients in experimental group according to pre-test and post-test pain score of primi mothers who are in first stage of labour.

Therapy			t	df	p-value
Music therapy	Exp	Pre test pain Score – Post test pain Score	7.796	29	2.05
Breathing exercise	Exp	Pre test pain Score – Post test pain Score	6.114	29	2.05

The above table depicts that t-test calculated value for musical therapy is 7.796 and for breathing exercise is 6.114, therefore t value 2.05 < 0.05, at 29 degrees of freedom at 5% level of significance table value is 2.045, Here t-test calculated value is greater than table value hence pre-test pain and post-test pain scores in experimental group is significant. Hence the null hypothesis (Ho) is rejected and research hypothesis is accepted; saying that the pain level significantly has become less in musical therapy and breathing exercise.

Hence musical therapy is more effective than that of breathing exercise.

3. Conclusion

The study was a new beginning in the labour room; this gave a new learning experience for the researcher. The overall experience of conducting this study was satisfying and enriching. The respondents were very much satisfied and happy with the intervention that they have received. The result of the present study shows that there was a great response from primi mothers who were in first stage of labour, in relieving labour pain.

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Author Profile

Y. Nathalina Deepika, Assistant Professor. Ganga college of Nursing, Coimbatore.
Email: dnathalina@gmail.com