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## RESEARCH ARTICLE

### A STUDY TO EVALUATE THE EFFECTIVENESS OF MODIFIED LAMAZE BREATHING TECHNIQUE ON LABOUR AND NEONATAL OUTCOME AMONG PRIMI PARTURIENT MOTHER AT RAJIV GANDHI GOVERNMENT WOMEN AND CHILDREN HOSPITAL, PUDUCHERRY

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#### ABSTRACT

**Background:** Labour is a dynamic phenomenon. Active management of shortens the duration of labour, lowers surgical interventions, improves behavioural outcome during second stage of labour. The expectant mothers, especially primi mothers are not able to adjust themselves during painful labour. Lamaze breathing is a technique used to help and relax during labour. Although the method was initially pioneered in breathing techniques to reduce labour pains and the techniques utilize several breathing patterns in order to encourage relaxation. **Objectives:**1. To evaluate the effectiveness of modified Lamaze breathing technique on labour and neonatal outcome among primi parturient mothers in both experimental and control groups 2.To determine association between modified Lamaze breathing on labour and neonatal outcome among primi parturient mothers in both experimental and control groups with the selected demographic variable. **Methodology:** A quantitative research approach, post-test only design with random sampling techniques was adopted for the study. 30 samples each in experimental and control group were selected in Rajiv Gandhi Government Women's and Children Hospital, Puducherry and the data were analysed using descriptive and inferential statistics. **Result** The results depicts that the maternal outcome score in the experimental group was  $36.05 \pm 0.13$  and in the control group was  $35.65 \pm 0.26$ . The mean difference score was 0.40. The calculated unpaired 't' value of  $t = 9.677$  was found to be statistically highly significant at  $p < 0.001$  level. The result reveals that the neonatal outcome score in the experimental group was  $37.17 \pm 0.21$  and in the control group was  $36.26 \pm 0.14$ . The mean difference score was 0.91. The calculated unpaired 't' value of  $t = 25.166$  was found to be statistically highly significant at  $p < 0.001$  level. This clearly indicates that the modified lamaze breathing technique was effective in experimental group than the control group. **Conclusion:** Lamaze breathing technique was found to be effective labour and neonatal outcome among primi parturient mothers. This can be given as an adjunct therapy in labour room for the primi parturient mothers by midwives. Modified Lamaze breathing technique is a non invasive procedure and has no adverse effects on the primi parturient mothers.

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## INTRODUCTION

Pregnancy is a unique, exciting and often joyous time in a women's life; it is tremendously powerful stage of development that brings a women to motherhood, a couple to family and a beautiful child into the world.

Keeping birth normal and the striving to interfere as little as possible with the natural process can be define as a goal for the midwife. Labour is a dynamic phenomenon. Active management of shortens the duration of labour, lowers surgical interventions, improves behavioural outcome during second stage of labour.

The expectant mothers, especially primi mothers are not able to adjust themselves during painful labour. They screams with pain and become exhausted much earlier using their power of pushing the foetus before time, which may result early rupture membrane following prolonged and complicated labour. So the active management of first stage of labour by the nurse midwives is an essential thing for the maternal and fetal outcome. Lamaze breathing is a technique used to help and relax during labour. Dr Ferdinand Lamaze, a French obstetrician, pioneered the Lamaze breathing techniques in the late 1950s, although the method was initially pioneered in breathing techniques to reduce labour pains and the techniques utilize several breathing patterns in order to encourage relaxation. The breathing patterns include inhaling for five seconds, then breathing out for five seconds. Another option is the two short breath, then one deep breath exercise that sounds like "hee heehooooo". The last 'breath should be released through the mouth Lamaze breathing techniques are designed to keep focused on breathing- not on pain experienced during childbirth, according to Modern Stork. Lamaze is also designed to help to conserve energy while giving birth- this helps to reduce the level of exhaustion following birth. Hence made the investigation to select this techniques for study. According to Baby center medical advisory Board (2008) Rhythmic breathing during labour maximizes the amount of oxygen available to the mother of the baby. Breathing techniques can also help to cope with the pain of contractions. When women's are tense and frightened, the breathing becomes shallow and rapid. Panic breathing cut down the amount of oxygen the women taken in herself and for her baby. The women feel light- headed and out of control. In labour, the aims to conserve the energy as much as possible, and give the baby plenty of oxygen to help him cope with the stress of being born.

Massage and breathing naturally helps to consciously to relax the body, and skill that needed during the child birth. Early and active labour can especially benefits from the massage, it relax the muscles and mind all over the body. Creehan (1996) suggested that impulse from the brain have a similar ability to impede transmission through the dorsal horn using visual and auditory stimulation techniques. The focal point or breathing techniques. Memory and cognitive processes affect the perception of stimuli as painful. Education and support labour are used to increase the women's confidence and feeling of control. Although this method may not a completely prevent pain, they may decrease severity of perceived pain.

**NEED FOR THE STUDY:** According to WHO world wide every minute of every day a women dies some where in the world as a result of pregnancy or child birth. Globally, this is more than the half a million women a year world wide. According to the latest data from 150 countries, currently 18.6% of all births occur by CS. Ranging from 6% to 27.2% in the least and most developed regions, respectively. Latin America and the Caribbean region as the highest CS rates (40.5%), followed by northern America (32.3%), oceania (31.1%), Europe (25%), Asia (90.2%) and Africa (7.3%). Based on the data from 121 countries, the trend analyse showed that between 1990 and 2014, the global average CS rate increased 12.4% (from 6.5% to 19.1%) with an average annual rate increase of 4.4%. The largest absolutely increase occurred in Latin America and the Caribbean (19.4% from 22.8% to 42.2%), followed by Asia (15.1% from 4.4% to 19.5%) oceania (14.1% from 18.1% to 32.6%), Europe (13.8%

from 11.2% to 25%), Northern America (10% from 22.3% to 32.3% and Africa (4.5% from 2.9% to 7.4%). According to Journal of Midwifery and Women's Health (March1998) Breathing techniques are helpful to many women in labor. Joint data collection by nine nurse midwifery practices in the US permitted a description of pain management practices with intrapartum patients. A wide variety of techniques for pain management including both pharmacologic and non-pharmacologic methods were used. High prevalence modalities were paced breathing (55.2%), position changes42%), narcotics (30%) and epidurals (18.7%). Paced breathing plus narcotics was the most common combination.

Kristine Burneko (2012) pointed that the goal of Lamaze is to increase mother's confidence in her ability to give birth and to help pregnant women understand how to cope with pain in ways that facilitate labour. The Lamaze technique is not evidence based medical therapy. Its effectiveness could be explained by the placebo effect. In India (2013) total population was estimated as 1,220,800,359 and annual number of births as 27,098. The total population of Tamil Nadu is 74,319,357 and the birth rate is 1.64 lakhs. According to UNICEF, every year 78,000/1,00,000 mothers die during child birth in India. According to UNICEF, India's maternal mortality rate stands at 450 per 1,00,000 live births. Against 540 in 1998-1999, India's millennium development goal is to reduce the maternal mortality rate below to 109 by the year 2015.

**STATEMENT OF THE PROBLEM:** A Study to evaluate the effectiveness of modified Lamaze breathing techniques on labour and neonatal outcome, among primi parturient mothers at Rajiv Gandhi Government Women and Children's hospital, Puducherry.

#### OBJECTIVES OF THE STUDY

- To evaluate the effectiveness of modified Lamaze breathing technique on labour and neonatal outcome among primi parturient mothers in both experimental and control groups.
- To determine association between modified Lamaze breathing on labour and neonatal outcome among primi parturient mothers in both experimental and control groups with the selected demographic variable.

#### HYPOTHESIS

**H0:** There will be a significant effectiveness of modified Lamaze breathing on labour and neonatal outcome among primi parturient mothers in both experimental and control groups

**H1:** There will be a significant association of modified Lamaze breathing on labour and neonatal outcome among primi parturient mothers with the selected demographic variables in both experimental and control groups.

#### ASSUMPTIONS

- All primi parturient mothers are in need of midwifery care during labour.
- Lamaze breathing techniques may have a significance influence on labour outcome and neonatal outcome.

## DELIMITATION

- Sample is 60 primi parturient mother (experimental group: 30) (control group: 30)
- Period of collection is 1 week
- Study setting in Rajiv Gandhi Government Women and Children's Hospital, Puducherry.

## MATERIALS AND METHODS

The study was Quantitative Experimental Design (Post-test only group). Random sampling technique was used to select 60 subjects and the researcher allotted 30 subjects to experimental group and 30 subjects to control group. On the same day the researcher assessed demographic data of each subjects both experimental and control groups. The tool used for the data collection was a Modified WHO partograph. After obtaining informed consent, data was collected through that standardized tool. After the data was collected both descriptive and inferential statistics were used to analyse the data. The descriptive statistics used were mean, standard deviation, frequency and percentage. Inferential statistics such as chi square was used to find out the association among the demographic variables level of labour and neonatal outcome.

### DATA COLLECTION PROCEDURE

Before conducting the study, formal permission was obtained by the researcher from the concern authority. The period of study was 1 week. A sample of 60 primi parturient mothers (30 in experimental group and 30 in control group) was randomly selected from the labour room. The experimental group received intervention of modified lamaze breathing which was given on active stage of labour. The control group had no intervention. The Data obtained was organized and planned to be analyzed, based on the objectives of the study using descriptive and inferential statistics. Descriptive statistics like frequency, percentage, mean and standard deviation is used to describe the demographic variables. Data will be analyzed by using SPSS Software. Data will be presented in tables, graphs and diagrams. Inferential statistics chi-square test used to analyze the level of maternal and neonatal outcome among primi parturient mothers. Chi-square test was used to find out association in the labour and neonatal outcome with the selected demographic variable. Significance of the study will be analyzed by the results.

## RESULTS

The results depicts that the maternal outcome score in the experimental group was  $36.05 \pm 0.13$  and in the control group was  $35.65 \pm 0.26$ . The mean difference score was 0.40. The calculated unpaired 't' value of  $t = 9.677$  was found to be statistically highly significant at  $p < 0.001$  level. The result reveals that the neonatal outcome score in the experimental group was  $37.17 \pm 0.21$  and in the control group was  $36.26 \pm 0.14$ .

The mean difference score was 0.91. The calculated unpaired 't' value of  $t = 25.166$  was found to be statistically highly significant at  $p < 0.001$  level. This clearly indicates that the modified lamaze breathing technique was effective in experimental group than the control group. **Table 1** shows that the maternal outcome score in the experimental group was  $36.05 \pm 0.13$  and in the control group was  $35.65 \pm 0.26$ . The mean difference score was 0.40. The calculated unpaired 't' value of  $t = 9.677$  was found to be statistically highly significant at  $p < 0.001$  level. The neonatal outcome score in the experimental group was  $37.17 \pm 0.21$  and in the control group was  $36.26 \pm 0.14$ . The mean difference score was 0.91. The calculated unpaired 't' value of  $t = 25.166$  was found to be statistically highly significant at  $p < 0.001$  level. This clearly indicates that the modified lamaze breathing technique was effective in experimental group than the control group.

## DISCUSSION

The results exhibits that the maternal outcome score in the experimental group was  $36.05 \pm 0.13$  and in the control group was  $35.65 \pm 0.26$ . The mean difference score was 0.40. The calculated unpaired 't' value of  $t = 9.677$  was found to be statistically highly significant at  $p < 0.001$  level. This clearly indicates that the modified lamaze breathing technique was effective in experimental group than the control group.

The results highlights that the neonatal outcome score in the experimental group was  $37.17 \pm 0.21$  and in the control group was  $36.26 \pm 0.14$ . The mean difference score was 0.91. The calculated unpaired 't' value of  $t = 25.166$  was found to be statistically highly significant at  $p < 0.001$  level. This clearly indicates that the modified lamaze breathing technique was effective in experimental group than the control group.

**Table 1. Comparison of maternal and neonatal outcomes among primi parturient mothers between the experimental and control groups**

S.NO	MATERNAL OUTCOME	Mean	S.D	Mean Diff.	Unpaired 't' Value
1.	Experimental Group	36.05	0.13	0.40	$t = 9.677$
2.	Control Group	35.65	0.26		$p = 0.001, S^{***}$
NEONATAL OUTCOME					
1.	Experimental Group	37.17	0.21		$t = 25.166$
2.	Control Group	36.26	0.14	0.91	$p = 0.000, S^{***}$

Significant at  $P < 0.005$  level.

## CONCLUSION

Hence from the above result it is concluded that the modified Lamaze breathing technique was found to be effective labour and neonatal outcome among primi parturient mothers. This can be given as an adjunct therapy in labour room for the primi parturient mothers by midwives. Modified Lamaze breathing technique is a non invasive procedure and has no adverse effects on the primi parturient mothers. Hence The knowledge on childbirth preparation like Modified Lamaze breathing technique will be effective in midwifery practice. The midwives have a vital role in providing safe and effective nursing care to enhance the progress of labour outcome.

## RECOMMENDATION

On the basis of the findings of the study the following recommendations are offered for future research:

- A similar study could be conducted on a larger sample which would yield more reliable results.
- A comparative study could be conducted with other non-pharmacological measures on labour outcome.

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