



## A Study to Assess the Effectiveness of Lamaze Breathing Technique in Pain Management During the First Stage of Labour in Apollo Women's Hospital, Chennai.

<sup>1</sup>Ms. Latha Asha Rani, <sup>2</sup>Ms. Divya B R\*, Ms. Roopali Wagh<sup>3</sup>

<sup>1</sup>Deputy Nursing Superintendent, Apollo Women's Hospital, Chennai.

<sup>2</sup>Nurse Educator, Apollo Women's Hospital, Chennai.

<sup>3</sup>Senior Nursing Superintendent Apollo Hospitals, Navi Mumbai.

DOI: [10.5281/zenodo.13359121](https://doi.org/10.5281/zenodo.13359121)

Submission Date: 10 July 2024 | Published Date: 22 Aug. 2024

\*Corresponding author: Ms. Divya B R

Nurse Educator, Apollo Women's Hospital, Chennai.

### Abstract

**Introduction:** Labor pain is a physiological phenomenon caused by the smooth muscles of the uterus contracting to assist the fetus down the birth canal. There are many causes of this pain, such as experience, fear and anxiety along with racial, cultural, social, and environmental factors and demographic and biological characteristics. Severe labor anxiety increases the likelihood of a cesarean section, which may be followed by cesarean delivery-related difficulties for both mother and fetus, putting financial strains on the family and the state and lengthening hospitalization time. **Problem Statement:** A study to assess the effectiveness of Lamaze breathing technique in pain management during the first stage of labour in Apollo Women's Hospital, Chennai. **Objectives:** (a) To assess the pre and post test level of pain scores among mothers who are in the first stage of labour. (b) To evaluate the effectiveness of Lamaze breathing on the level of pain among mothers before and after who are in labour. (c) To associate the selected demographic variables with the mean differed score of pain among all mothers who are in labour. **Methodology:** Quantitative research approach with one group pre and post test design was adopted. The samples for this study consist of 30 samples selected by purposive sampling technique. Wong Bakers Pain scale was used to assess the pain level among mothers in the first stage of labour. **Results:** The pretest mean score of pain level among primigravida mothers was 6.6 and post test mean score of pain level among primigravida mothers was 1.57. The paired 't' value of the group was 14.631. **Conclusion:** The study shows that the Lamaze breathing technique is effective in reducing the level of pain.

**Keywords:** Lamaze breathing technique, Labour pain, Pain Management, First stage of Labour, Primigravida, Normal labour.

## INTRODUCTION

Pregnancy and Childbirth is a special event to the mother and the family. Childbirth involves labour process and delivery of the baby

"Pain is inevitable, suffering is optional"

Haruki Murakami

Burroughs (2011)<sup>[1]</sup> stated that pregnancy is a special event not only in the life of a woman but also in the entire family. The labour and birth process are an exciting, anxiety provoking but rewarding time for the women and her family. Normal labour is spontaneous in onset, low-risk at the start of labour and remaining so throughout labour and delivery. The infant is born spontaneously in the vertex position between 37 and 42 completed weeks of pregnancy.

Kristine Burneko (2012)<sup>[2]</sup> 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.

According to Lamaze International, the philosophy of Lamaze is that the experience of birth is meant to be normal and natural, and that women have an inherent ability to give birth. Women who use this method often praise the rewarding results. Benefits of Lamaze are largely emotional and psychological as it focuses on providing a positive environment and well-being during delivery.<sup>[3]</sup>

McKinney (2018)<sup>[4]</sup> said that Labour pain was a part of a normal process. Although expected during the labour process, it is considered as the most undesirable and unpleasant aspect of the labour experience during childbirth. Labouring women often experience intense pain due to uterine contractions. During descent, the fetus head exerts pressure on the mother's pelvic floor, vagina, and perineum causing somatic pain transmitted to the pudendal nerve. As woman's labour progresses, labour pain also increases especially in primiparas. Pain during birth involves two components; the physiologic component, which includes reception by sensory nerves and transmission to the central nervous system and the psychological component which involves recognizing the sensation, interpreting it as painful, and reacting to the interpretation.

Mikal Rose (2009)<sup>[5]</sup> pointed out that the Lamaze educators continue to teach body awareness and tension release, but the goal is not to expect total relaxation during labour. Rather, women are encouraged to be in the moment, not fearful, but relaxed, rhythmically working with labour. The main Lamaze technique that has migrated to other birthing philosophies is controlled breathing. There are five different types of controlled breathing outlined by Lamaze. They are baseline breathing, slow breathing, blowing exercise, patterned breathing and cleansing breath. The purpose of Lamaze breathing is to keep a mother's attention focused on the breathing so that she cannot focus on her pain.

## MATERIAL AND METHODS

### Research approach and design:

Quantitative Research approach was selected to assess the effectiveness of Lamaze breathing technique in pain management during the first stage of labour.

One group, pretest post test design. The researcher took a group of mothers in first stage of labour and provided Lamaze breathing exercise during the first stage.

### Setting of the study:

The study was conducted among mothers in Apollo women's Hospital, Chennai.

### Population:

The population of the study includes primigravida mothers who were in the first stage of labour and completed 37 weeks of gestation.

### Sample Size:

The sample size for the study was 30 primigravida mothers who were in first stage of labour.

### Sampling Technique:

Purposive sampling technique, a subtype of non probability sampling method adopted for the present study.

### Inclusive Criteria:

- Primigravida mothers who were in the first stage of labour
- Primigravida mothers who have completed 37 weeks of gestation
- Primigravida mothers who were willing to participate in the study
- Primigravida mothers who were able to speak in English or Tamil

### Exclusion Criteria:

- Mothers who were multigravida
- Mothers who were planned for LSCS
- Mothers who were having medical complications during pregnancy

### Hypothesis

**H1:** There will be a significant difference between the pre and post test level of pain scores among the mothers in labour with Lamaze breathing technique.

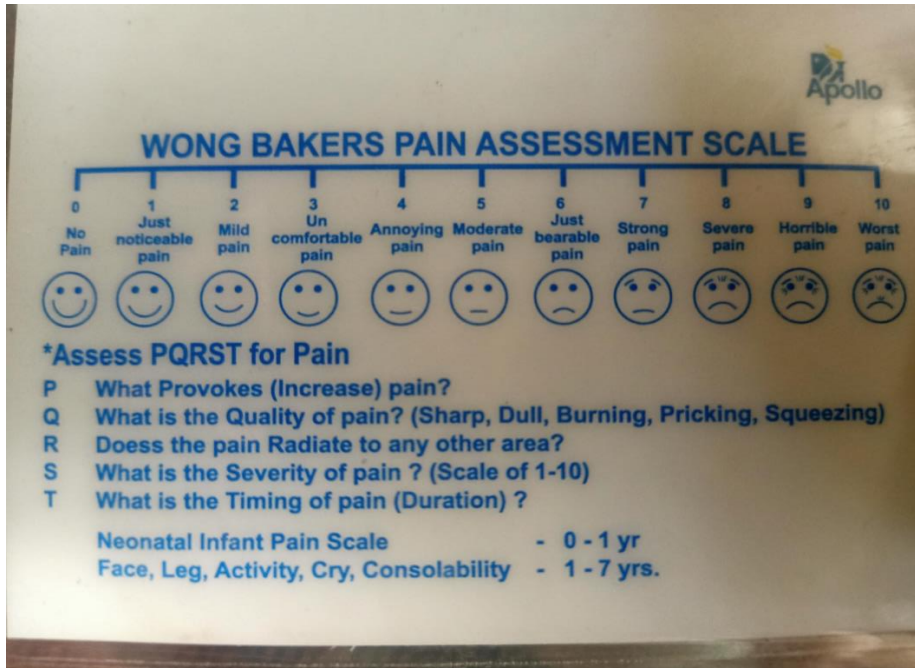
**H2:** There will be a significant association between the selected demographic variables with the mean differed score of pain scores among the mothers in labour after Lamaze breathing.

**H01:** There will not be any significance between the pretest & posttest level of scores among the mothers in labour with Lamaze breathing technique.

**H02:** There will not be a significant association between the selected demographic variables with the mean differed score of pain scores among the mothers in labour after Lamaze breathing.

### Tools For Data Collection:

The tool consisted of two parts data collection tool and intervention tool. The data collection tool used in this study was structured interview schedule and medical record review for demographic data and clinical data, Wong Bakers Pain scale was used to assess the pain score.



**Fig. 1: Wong Bakers Pain Assessment Scale**

0	: No pain
1 – 3	: Mild Pain
4 – 6	: Moderate Pain
7 – 10	: Severe Pain

Section A: Assessment of Demographic and Clinical Variables.

Section B: Assessment of pain by Wong Bakers scale.

### Data Collection Procedure:

The study was conducted for the period of four weeks. The researcher obtained written permission from the Research Medical Head from AMH & HOD to conduct the research study on primigravida mothers who are in the first stage of labour. The researcher met the subjects and explained the benefits of the study and obtained consent from the team (**IEC-BMR App No.: AMH-C-S-078/09-23**).

Samples who met the inclusion criteria were selected by using non probability convenient sampling technique. The investigator had done the pre-test to assess the level of pain before giving Lamaze breathing technique by using the Wong Bakers pain scale and collected the demographic and obstetrical data by using a baseline Proforma. As contraction starts, slow paced breathing was initiated for two minutes followed by modified paced breathing until the change in contractions. As the contraction increases, patterned breathing was initiated until the contraction has passed off. Then, take the big, deep breath through the nose and then exhale slowly through the mouth. Taking two or three quick, shallow inhales and then a long exhale. This event is the familiar “hee, hee, hoo” or “pant, pant, blow” that characterized early Lamaze training. After giving breathing techniques, the post test was conducted.

## RESULTS

Descriptive statistics were used to describe and synthesize the data. Frequency, percentage, mean and standard deviation were used under descriptive statistics. Inferential statistics is used derive the association between pain score with demographical variables.

**Section I: Demographic characteristics**

Variable	Frequency	Percent
<b>1. Age</b>		
a. 21-25 years	5	16.7
b. 26-30 years	22	73.3
c. 31-35 Years	3	10.0
<b>2. Gestational Age</b>		
a. 33-36 weeks	4	13.3
b. 37-38 weeks	12	40.0
c. 39-40 weeks	14	46.7

**Table 1**

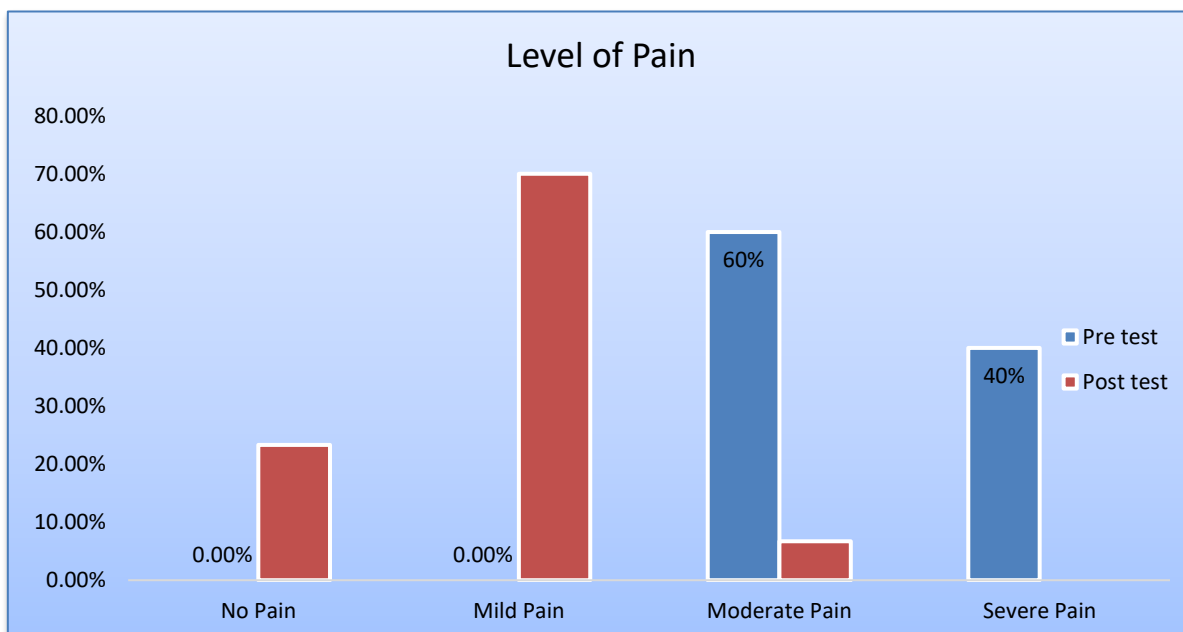
The table 1 depicts that majority 73.3% of the subjects were in the age group of 26-30 years and most (46.7%) of the mother’s gestational age was 39-40 weeks and 40% were in the gestational age of 37-38 weeks.

**Section II: Pain score of the mothers during the first stage of labour before & after Lamaze breathing**

Pain Level	Pre test		Post Test	
	Frequency	Percent	Frequency	Percent
No Pain	0	0.0	7	23.3
Mild Pain	0	0.0	21	70.0
Moderate Pain	18	60.0	2	6.7
Severe Pain	12	40.0	0	0.0
Total	30	100.0	30	100.0

**Table 2**

The table 2 reveals that majority 60% of the subjects had moderate pain and 40% of them had severe pain in the pre test and after administration of Lamaze breathing technique it showed that majority 70% of the subjects had mild pain and 23.3% of them had no pain. So, the null hypothesis is rejected and research hypothesis is accepted.



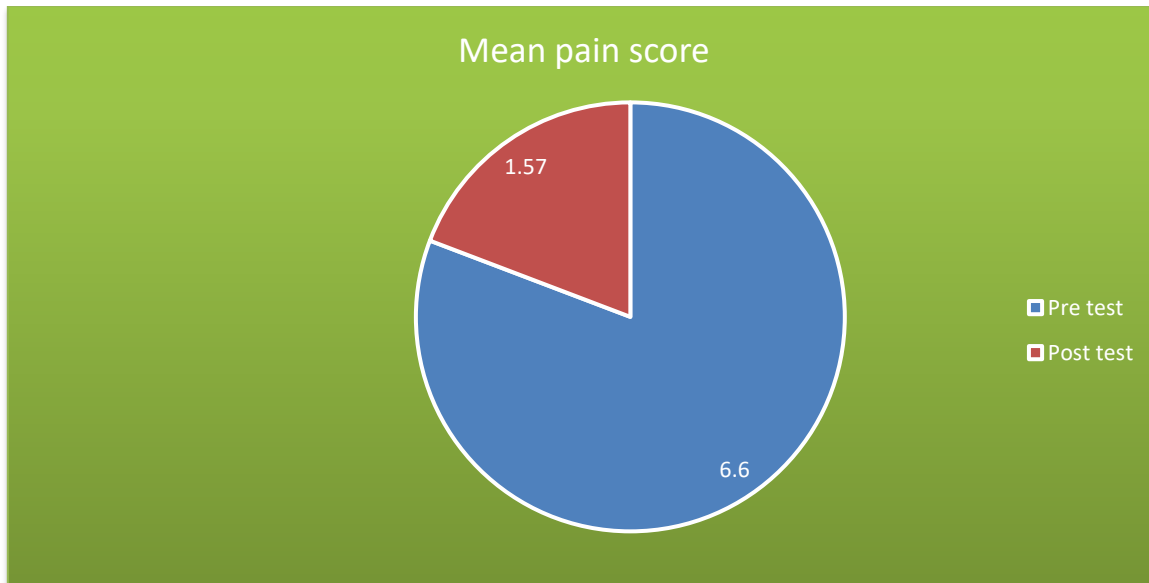
**Fig. 4: Distribution of subjects by the level of pain**

**Section III: Effectiveness of Lamaze breathing technique in pain management during the first stage of labour**

	Mean	SD	Mean Difference	T test value	P Value	Inference
Pre test	6.6	1.610	5.03	14.631	0.000	Highly Significant
Post test	1.57	1.194				

**Table 3**

The table 3 showed that the mean difference of pre test and post test pain score was 5.03 with the t value of 14.631, which is significant at 0.01 level of significance. Hence, it can be inferred that Lamaze breathing technique is effective in reducing the pain during the first stage of labour. So, research hypothesis is accepted and null hypothesis is rejected.



**Section IV: Association of Pain scores with demographic variables**

Variables	Moderate Pain	Severe Pain	Chi square	Df	P value (0.05)	Inference
<b>1. Age in years</b>						
a. 21-25 years	3	2	1.010	2	0.603	No Significant
b. 26-30 years	14	8				
c. 31-35 Years	1	2				
<b>2. Gestational Age</b>						
a. 33-36 weeks	4	0	3.214	2	0.200	No Significant
b. 37-38 weeks	6	6				
c. 39-40 weeks	8	6				

**Table 4**

The table 4 reveals that the obtained chi square value 1.010 and 3.214 were less than the table value at the df 2 and it is not found to be significant. Hence, it can be inferred that there is no significant association between the pain levels with the age and gestational age. Hence, null hypothesis is accepted and research hypothesis is rejected.

**DISCUSSION**

Lamaze breathing is a deep-breathing pain-management technique used by women who want to experience natural labour and childbirth. During pregnancy, a mother-to-be practices Lamaze breathing exercises so that during labour, she will be familiar with important breathing techniques to help ease and transfer the focus off the pain of natural childbirth.

The purpose of the study was to provide knowledge regarding the importance of performing Lamaze breathing technique in reducing pain in women in the first stage of labour. This awareness will keep a woman comfortable, focused and in control during labour during the first stage of labour.

- The pretest mean score of pain level among primigravida mothers was 6.6
- The post test mean score of pain level among primigravida mothers was 1.57
- The obtained 't' value for primigravida mothers was 14.631, which is significant at 0.01 with association between the pain levels and age and gestational age.

## CONCLUSION

Lamaze technique is Non-pharmacological, non-invasive and self-administered technique. It does not consume more time of health personnel. There are no adverse effects to the mother and fetus and it is easy and cheapest method to help the mother to overcome anxiety and intensity of pain and also reduces the duration of first stage of labour.

The study shows significant effectiveness of Lamaze breathing technique in reducing labour pain during the first stage of labour among primigravida mothers and study reveals that primigravida mothers have positive attitude towards Lamaze breathing technique as evidenced by greater acceptance.

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#### CITATION

Latha A.R., Divya B R, & Roopali W. (2024). A Study to Assess the Effectiveness of Lamaze Breathing Technique in Pain Management During the First Stage of Labour in Apollo Women's Hospital, Chennai. In Global Journal of Research in Medical Sciences (Vol. 4, Number 4, pp. 48–53).  
<https://doi.org/10.5281/zenodo.13359121>



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