



A PRE-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF LAMAZE BREATHING TECHNIQUE ON LABOUR OUTCOMES AMONG PRIMI PARTURIENT WOMEN ADMITTED TO SELECTED HOSPITALS OF AMRITSAR, PUNJAB

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ABSTRACT

Lamaze breathing is a conscious breathing technique that focuses on slow, deep breaths. Lamaze breathing during labour is highly beneficial for the women and her foetus. It increases the mothers focus and brings much needed oxygen to her and the baby. Lamaze breathing help to reduce the exhaustion during labour and help to preserve energy while giving birth of baby. This technique is effective on reducing labour pain, stress, anxiety and shorten the duration of labour. It also improves the maternal and foetal outcome and maintain the efficiency of uterine contraction.

A Pre-experimental study to assess the effectiveness of Lamaze breathing technique on outcome of labour among primi parturient women admitted in Selected Hospital of Amritsar Punjab. The aim of present study was to assess the effectiveness of Lamaze breathing technique on outcome of labour among 129 primi parturient women admitted in J.B.M.M Civil Hospital, Amritsar. Pre-experimental (one shot case design) was used for the study. The sample was selected using a non-probability purposive sampling technique. Sociodemographic variables were employed to gather personal information from the subjects, while an observational checklist was utilized to assess the labour outcomes and pain perception. Data collected was analysed using both descriptive and inferential statistics and were then presented through tables, pie charts, and bar diagrams. Major findings of the study shows that there is significant effect of Lamaze breathing technique on outcome of labour both in terms maternal and foetal outcome. In order to determine the association between post interventional outcome of labour among primi parturient women with selected demographic variables, chi-square was applied and it showed that there is no significant association between post interventional outcome of labour with age, education, week of gestation, body mass index at $p < 0.05$ level of significance.

Keywords: Lamaze breathing, Outcome of labour, Primi parturient women, Amritsar, Pain perception, breathing.

AUTHOR'S PROFILE:



Author, Miss Mahreen Koser is a Clinical Instructor at Khalsa College of Nursing, Amritsar, India. She is actively involved in clinical teaching and nursing education. She has attended various conferences and workshops, contributing to her professional development and academic growth. Her areas of interest include clinical nursing practice and nursing education.



INTRODUCTION

Motherhood is a unique and universal gift bestowed upon woman by nature. Pregnancy and birth is a joyful and pleasant experience of woman. Childbirth is one of the most marvellous and memorable segments in a woman's life. It does not really matter whether the child is first, second or the third one. Each experience is unique and calls for celebration. Pregnancy is a process and series of changes that takes place in a woman's organs and tissue because of developing fetus. During pregnancy, the women and fetus prepare for the labour process¹. Labour is characterized by the presence of regular uterine contraction, effacement of cervix, dilatation of cervix, fetal descend and rupture of membrane that are uncomfortable and painful for the women and leaves an effect on the outcome of labour. Labor is a process that subdivides into three stages. The first stage starts when labor begins and ends with full cervical dilation and effacement. The second stage commences with complete cervical dilation and ends with the delivery of the fetus. The third stage initiates after the fetus is delivered and ends when the placenta is delivered².

In relaxation techniques, Lamaze breathing is a technique used to help and relax during labor. Lamaze breathing technique was pioneered by French obstetrician Dr. Ferdinand Lamaze in 1950. Lamaze is popularly known for its rhythmic breathing exercises that reduces heart rate, anxiety, and pain perception during labor. The exercises work because when breathing becomes a focus, other sensations (such as labor pain) move to the edge of awareness. The breathing was thought to be an effective because it acted as a distraction, a focus away from the pain. Breathing together with relaxation reduce pain perception, enough to enable women to give birth without drugs. Despite being confined to bed, Lamaze mothers were able to give birth "awake and aware"³

Lamaze breathing exercise consists of several breathing patterns to encourage relaxation. Breathing pattern include inhalation i.e. take deep inhalation for five second-pause-then breathing out for five seconds. Another option is to take two short breaths, then one deep breath exercise that sounds like 'hee heehooo'. The last breath should be released through mouth These techniques help to reduce the exhaustion during labour and help to conserve energy while giving birth. Lamaze offers many benefits to delivering women such as reduced pain, fewer medical interventions, and potentially, even faster labor.⁴

Breathing techniques are one of these methods. Breathing techniques help the mother concentrate and focus on breathing instead of her contractions during the labor, provide an active participation in the birth and develop internal awareness of her body. In addition, breathing helps to cope with uterine contractions and to decrease anxiety. Breathing techniques were found to lead significant declines in state anxiety, continuous anxiety and perceived pain levels. It is observed that during labor and delivery, utilizing breathing techniques can help women to focus on other things and to reduce their anxiety levels. Moreover, these techniques are effective in shortening the duration of labor.⁵

NEED OF THE STUDY

According to WHO worldwide every minute of every day a woman dies because of pregnancy or childbirth complication. The prevalence rate of maternal mortality is unsatisfactorily high. About 287000 women died during pregnancy and childbirth (2020). In 2021(1205) women died due to maternal causes in the United States compared with 861 in 2020 and 754 in 2019. The maternal mortality rate for 2021 was 32.9 deaths per 100,000 live births. The women died due to some obstetrical complication i.e., hemorrhage, hypertensive disorders, infection, ruptured uterus etc. The incidence of prolonged labour is of about 4.39%. It was noted that 66.5% of the women with prolonged labour were primipara. The cause of prolonged labour was occipito-posterior position (10.8%), relative cephalopelvic disproportion (18.2%), uterine dysfunction (44%), and (26.1%) due to obstetric cause. Maternal mortality occurs due to direct obstetric death that results from obstetric complications accounting for 80% of all maternal deaths. Indirect causes result from previous existing disease exacerbated by pregnancy or disease developed during pregnancy. The maternal mortality, febrile and non-febrile morbidity were 9.7 per 1000 total births, 42.8% and 17.2% respectively which show the direct relation to the duration of labour.⁶

During the clinical posting, researcher observed that most of the parturient women deal with stress, tension and anxiety during labour and certain complications arises like hypertension, prolonged labour, ineffective bear down efforts and foetal distress etc. There are various pharmacological and non-pharmacological methods like positioning /movements, massage, hydrotherapy, breathing techniques, hot/cold therapy, acupuncture, and aromatherapy which give comfort to the mother during labour process and also improve the outcome of labour. Review of literature indicates that Lamaze breathing techniques reduces anxiety during labour and improves the



maternal and foetal outcome, shortens the duration of labour and maintains the efficiency of uterine contraction. There are few studies on the effectiveness of Lamaze on labour outcome that has positive effect. Therefore, the researcher wants to conduct the present study to assess the effect of Lamaze breathing on outcome of labour among primi parturient women

PROBLEM STATEMENT

A pre-experimental study to assess the effectiveness of Lamaze breathing technique on outcome of labour among primi parturient women admitted in J.B.M.M. Civil Hospital of Amritsar Punjab.

AIM OF STUDY

The aim of the study is to relax the mother and reduce the exhaustion during labour thus improve maternal and neonatal outcome.

OBJECTIVES OF STUDY

GENERAL OBJECTIVE

To assess the effect of Lamaze breathing technique on outcome of labour among primi parturient women.

SPECIFIC OBJECTIVE

1. To assess the post interventional outcome of labour among primi parturient women.
2. To determine the association of post interventional outcome of labour among primi parturient women with selected demographical variables.

HYPOTHESIS:

3. **H₀:** There will be no significant effect of Lamaze breathing technique on outcome of labour among primi parturient women at $p < 0.05$ level of significance.
4. **H₁:** There will be a significant effect of Lamaze breathing technique on outcome of labour among primi parturient women at $p < 0.05$ level of significance.

RESEARCH METHODOLOGY

Research approach: Quantitative research approach

Research design: Pre-Experimental design

Research setting: The present study was conducted in Jallianwala Bagh Martyrs Memorial (JBMM) Civil Hospital Amritsar, Punjab. The hospital is situated in Maharaja Ranjit Singh Nagar, Hussainpura Chowk. Amritsar.

Population: The population for the present study was primi parturient women admitted in the J.B.M.M Civil Hospital, Amritsar (Punjab).

Sample: Sample of the study was primi parturient women admitted in Jallianwala Bagh Martyrs Memorial (JBMM) Civil Hospital Amritsar, Punjab.

Sample Size: The sample size was 129 primi parturient women were selected in the study

Sampling Technique: Non probability (Purposive sampling technique)

DESCRIPTION OF TOOL

It consists of 2 parts:

Part 1: Socio -Demographic profile:

This part consisted of 5 items for obtaining personal information of subjects such age, education, weeks of gestation, occupation, Body mass index.

Part 2: To assess outcome of labour, the tool was:

- (a) Numerical pain rating scale: To assess the level of pain.
- (b) Observational checklist: To assess maternal and foetal outcome of labour.
 - Duration of uterine contraction
 - Intensity of uterine contraction
 - Frequency of uterine contraction
 - Rate of cervical dilatation
 - Mode of delivery
 - Foetal heart rate



ANALYSIS AND INTERPRETATION

Table .1: Frequency, percentage distribution and mean scores of primi parturient women according to post-interventional outcome of labour. N=129

Outcome of Labour	n	%	Mean	S.D.
1. Duration of uterine contraction				
a) <40 sec	43	33.30	5.72	1.453
b) 60-90 sec	72	55.80	4.9	1.128
c) >90 sec	14	10.90	4	0
2. Intensity of uterine contraction				
a) Mild	40	31.0	4.9	1.707
b) Moderate	75	58.10	5.08	1.075
c) Severe	14	10.90	5.57	0.938
3. Frequency of uterine contraction				
a) <2 contraction	30	23.30	5.4	0.675
b) 2-4 contraction	86	66.70	4.93	1.362
c) > 5 contraction	13	10.10	5.31	1.797
4. Rate of Cervical dilatation (per hour)				
a) <1 cm	29	22.50	4.79	1.013
b) 1-1.5 cm	90	69.80	5.09	1.329
c) >1.5 cm	13	7.80	5.8	1.549
5. Mode of delivery				
a) Normal vaginal delivery	56	43.40	5.38	1.383
b) NVD with episiotomy	66	51.20	4.8	1.231
c) Instrumental delivery	7	5.40	5.29	0.488
6. Fetal heart rate				
a) <110bpm	14	10.90	5.79	1.626
b) 120-160	115	89.10	4.99	1.232
c) >180	-	-	-	-

Table .1 depicts the frequency, percentage distribution and mean scores of primi parturient women according to post-interventional outcome of labour. It shows that according to duration of uterine contraction, maximum (58.50%) of primi parturient women had duration of each contraction for 60-90 sec followed by (33.30%) <40 sec and remaining (10.90%) > 90 sec. According to the intensity of uterine contraction, maximum (58.10%) of primi parturient women had moderate intensity of uterine contraction whereas (31.0%) had mild intensity and remaining (10.90%) had severe intensity of uterine contraction. According to frequency of uterine contraction, maximum (66.70%) primi parturient women had 2-4 times uterine contraction within 10 minutes and (23.30%) women had <2 times and remaining (10.10%) women had >5 times uterine contraction. According to rate of cervical dilatation, maximum (69.80%) of primi parturient women had 1-1.5cm per hour of cervical dilatation followed by (22.50%) had < 1cm and remaining (7.80%) had > 1.5 cm cervical dilatation. According to mode of delivery, maximum (51.20%) of primi parturient women had normal vaginal delivery with episiotomy, (43.40%) women had normal vaginal delivery and remaining (5.40%) had instrumental delivery. According to foetal heart rate, majority (89.10%) of primi parturient women showed foetal heart rate within 120-160 bpm. And remaining (10.90%) of primi parturient women showed foetal heart rate below 110bpm and maximum (78.20%) had moderate level of pain.



Table .2 Frequency and percentage distribution of mothers according to normal range of outcome N=129

Outcome observation	Normal range of outcome	Maternal/fetal outcome n (%)
Duration of uterine contraction	60-90 sec	72(55.80%)
Intensity of uterine contraction	Moderate	75(58.10%)
Frequency of uterine contraction	2-4 contraction	86 (66.70%)
Rate of cervical dilatation	1-1.5 cm	90 (69.80%)
Mode of delivery	Normal vaginal delivery	56 (43.40%)
Fetal heart rate	120-160 bpm	115(89.10%)

Table 2 depicts normal range of parameters and its comparison with maternal and foetal outcome. It shows that according to duration of uterine contraction, majority (55.80%) primi parturient women had duration of each contraction for 60-90 sec. According to the intensity of uterine contraction, maximum (58.10%) of prim parturient a women had moderate contraction during labour According to the frequency of uterine contraction, maximum (66.70%) pimi parturient women had 2-4 contraction within 10 minutes. According to the rate of cervical dilatation, maximum (69.80%) primi parturient women had 1-1.5 cm per hour of cervical dilatation. As per mode of delivery, maximum (43.40%) primi parturient women were having normal vaginal delivery with episiotomy. As per foetal heart rate, all (89.10%) of primi parturient women showed Foetal heart rate within 120 -160 bpm. Hence, concluded that Lamaze breathing had significant impact on maternal and foetal outcome. Hence, Null Hypothesis was rejected and alternate hypothesis was accepted

CONCLUSION

This study concluded that providing Lamaze breathing technique among primi parturient women during labour improved the maternal and foetal outcome. This breathing technique shows safe and better maternal and foetal outcome in the terms of duration of uterine contraction, intensity of uterine contraction, frequency of uterine contraction, rate of cervical dilatation, mode of delivery and foetal heart rate. So, it is important to use Lamaze breathing technique during labour in order to improve the maternal and foetal outcome.

RECOMMENDATIONS

- A similar study can be undertaken on larger sample for making a more valid generalization.
- A comparative study can be done to determine the effectiveness of Lamaze breathing technique on outcome of labour among primigravida and multigravida women.
- A similar study can be done using other alternative breathing technique for outcome of labour.

Similar study can be conducted on different population in different setting.

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