



The Effectiveness Of Slow Paced Breathing On Pain Perception During First Stage Of Labour Among Primigravida Mothers

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Abstract

Background

Childbirth is a unique and significant event in a woman's life. Labour pain is one of the most intense forms of pain experienced by women, especially among primigravida mothers. Non-pharmacological interventions such as slow paced breathing exercises help mothers to relax, improve oxygen supply, reduce anxiety, and enhance coping ability during labour.

Aim

The study aimed to assess the effectiveness of slow paced breathing exercises on pain perception during the first stage of labour among primigravida mothers.

Materials and Methods

A quantitative research approach with a quasi-experimental pre-test and post-test control group design was adopted. The study was conducted among **60 primigravida mothers** (30 experimental group and 30 control group) admitted during the first stage of labour. Samples were selected by purposive sampling technique. Pain perception was assessed using a **Numeric Pain Rating Scale**. Slow paced breathing exercise was provided to the experimental group during contractions for two hours in the active phase of labour, whereas the control group received routine care. Data were analysed using descriptive and inferential statistics.

Results

The study findings revealed that in the experimental group after intervention, 43.33% of mothers experienced mild pain, 50% experienced moderate pain, and only 6.66% experienced severe pain. In the control group, 56.67% of mothers experienced severe pain.

The mean post-test pain perception score was lower in the experimental group (**Mean = 1.6, SD = 0.61**) compared with the control group (**Mean = 2.5, SD = 0.56**). The calculated unpaired t-value was **5.92**, which was higher than the table value (2.02) at 5% level of significance, indicating that slow paced breathing exercise was effective in reducing labour pain perception.

No significant association was found between pre-test pain perception scores and selected demographic variables.

Conclusion

The study concluded that slow paced breathing exercise is an effective non-pharmacological intervention for reducing pain perception among primigravida mothers during the first stage of labour. It can be incorporated into routine maternity nursing practice to promote a positive childbirth experience.

Keywords:

Slow paced breathing, Labour pain, Pain perception, Primigravida mothers, First stage of labour, Non-pharmacological pain management

Introduction

Childbirth is one of the most significant and memorable experiences in a woman's life. Labour is a natural physiological process that involves a complex interaction of physical, psychological, and emotional changes. Although childbirth brings a feeling of happiness and achievement, the process of labour is commonly associated with pain, fear, anxiety, and stress, particularly among primigravida mothers who experience childbirth for the first time.

Labour pain is considered one of the most intense forms of pain experienced by women. It occurs mainly due to uterine contractions, cervical dilatation, stretching of the birth canal, and pressure exerted by the fetus during the process of delivery. The perception of labour pain differs from one woman to another and is influenced by various factors such as emotional status, anxiety level, cultural background, previous knowledge, coping ability, and support received during labour. Uncontrolled labour pain may increase maternal stress, fatigue, and fear, which can negatively influence the childbirth experience.

Pain management during labour plays an important role in promoting maternal comfort and improving the overall birth experience. Various pharmacological and non-pharmacological methods are available for reducing labour pain. Pharmacological methods provide pain relief but may be associated with certain maternal and fetal side effects. Therefore, non-pharmacological approaches are increasingly encouraged as they are safe, simple, cost-effective, and help mothers actively participate in the labour process.

Breathing exercises are one of the commonly used non-pharmacological interventions for managing labour pain. Controlled breathing techniques help mothers to relax, decrease anxiety, improve oxygen supply to both mother and fetus, and divert attention away from painful contractions. Slow paced breathing promotes relaxation by reducing muscle tension and helping the mother maintain control during labour.

Slow paced breathing involves conscious, rhythmic, and controlled breathing patterns practiced during uterine contractions. It enhances coping ability, reduces the perception of pain, and provides psychological comfort during childbirth. As it requires no special equipment and can be easily taught by nurses and healthcare professionals, it is considered a valuable supportive intervention during labour care.

Considering the importance of safe and effective pain management strategies during childbirth, the present study was undertaken to assess the effectiveness of slow paced breathing on pain perception during the first stage of labour among primigravida mothers.

Need of the Study

Pregnancy and childbirth are important events in a woman's life. Although labour is a normal physiological process, the pain experienced during labour is considered one of the most severe forms of pain. The intensity of labour pain is especially higher among primigravida mothers because of lack of previous childbirth experience, fear of the unknown, anxiety, and inadequate knowledge regarding coping strategies during labour.

Labour pain is influenced by various physical and psychological factors. Increased fear and anxiety during labour may lead to muscle tension, reduced pain tolerance, increased maternal stress, and difficulty in adapting to the labour process. Effective management of pain during childbirth is therefore essential to promote maternal comfort, confidence, and a positive childbirth experience.

In recent years, the use of non-pharmacological pain management techniques has gained importance because these methods are safe, economical, simple, and free from harmful effects on the mother and newborn. Relaxation methods, breathing exercises, positioning, massage, and emotional support are commonly recommended techniques to improve coping ability during labour.

Slow paced breathing is one of the effective relaxation techniques that helps the mother focus on controlled breathing patterns during contractions. It promotes relaxation, improves oxygenation, reduces anxiety, and distracts attention from labour pain. It also helps the mother gain better control over her physical and emotional responses during the first stage of labour.

During clinical experience, it has been observed that many primigravida mothers experience severe discomfort, fear, crying, restlessness, and inability to cope effectively with labour pain. Many mothers are unaware of simple non-pharmacological methods that can help them manage pain naturally during childbirth.

Nurses and midwives play an important role in providing comfort measures and promoting safe childbirth practices. Teaching slow paced breathing techniques can be easily incorporated into routine maternity care to improve the labour experience of mothers.

Therefore, the present study was undertaken to assess the effectiveness of slow paced breathing on pain perception during the first stage of labour among primigravida mothers and to provide evidence for its use as an effective non-pharmacological pain management intervention.

Objectives

1. To assess the pre-test and post-test level of pain perception during first stage of labour among experimental and control groups.
2. To evaluate the effectiveness of slow paced breathing exercise by comparing post-test pain perception scores between experimental and control groups.
3. To find the association between pre-test pain perception scores and selected demographic variables.

Hypotheses

H₁: There will be a significant difference in the post-test level of pain perception during the first stage of labour between primigravida mothers who receive slow paced breathing exercise and those who receive routine care.

H₂: There will be a significant association between the pre-test level of pain perception during the first stage of labour among primigravida mothers and their selected demographic variables.

METHODOLOGY

Research Approach:

A **quantitative research approach** was adopted to assess the effectiveness of slow-paced breathing exercise on labour pain among primigravida mothers during the first stage of labour.

Research Design:

A **quasi-experimental pre-test post-test control group design** was used for the study.

Setting of the Study:

The study was conducted in a **selected hospital at Indore**.

Population:

The study population consisted of **primigravida mothers during the first stage of labour**.

Sample Size:

A total of **60 primigravida mothers** were selected for the study.

- **Experimental Group:** 30 primigravida mothers
- **Control Group:** 30 primigravida mothers

Sampling Technique:

A **purposive sampling technique** was used for the selection of samples.

Research Tool:

The tool consisted of two sections:

- **Section A:** Demographic variables of primigravida mothers
- **Section B:** Numeric Pain Rating Scale (NPRS) to assess the intensity of labour pain

Intervention:

Slow-paced breathing exercise was demonstrated, taught, and practiced by primigravida mothers in the **experimental group during uterine contractions for 2 hours in the active phase of labour**. The control group received routine hospital care.

Data

The collected data were analyzed using **descriptive statistics (frequency, percentage, mean, and standard deviation)** and **inferential statistics (paired and unpaired t-test)** to evaluate the effectiveness of the intervention and compare pain scores between groups.

Analysis:

RESULTS

The study findings revealed that slow-paced breathing exercise was effective in reducing labour pain among primigravida mothers during the first stage of labour. The pre-test pain scores of the experimental and control groups were almost similar. After implementation of slow-paced breathing exercise, the experimental group showed a significant reduction in pain score compared to the control group.

Table 1: Distribution of Pre-test and Post-test Level of Labour Pain Among Primigravida Mothers in Experimental Group (n=30)

Level of Pain	Pre-test Frequency	Pre-test %	Post-test Frequency	Post-test %
Mild Pain (1–3)	0	0.0%	8	26.7%
Moderate Pain (4–6)	9	30.0%	18	60.0%
Severe Pain (7–10)	21	70.0%	4	13.3%
Total	30	100%	30	100%

Interpretation:

After practicing slow-paced breathing exercise, severe labour pain reduced from **70.0% to 13.3%**, showing improvement in pain management.

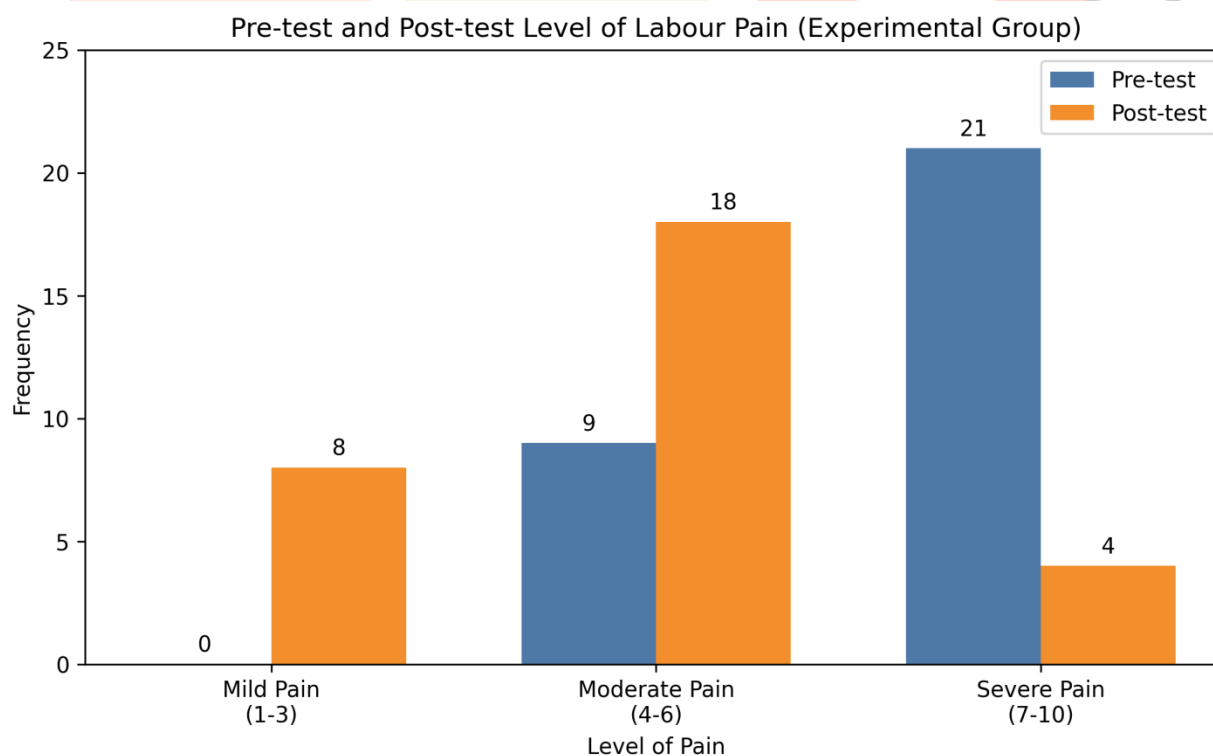
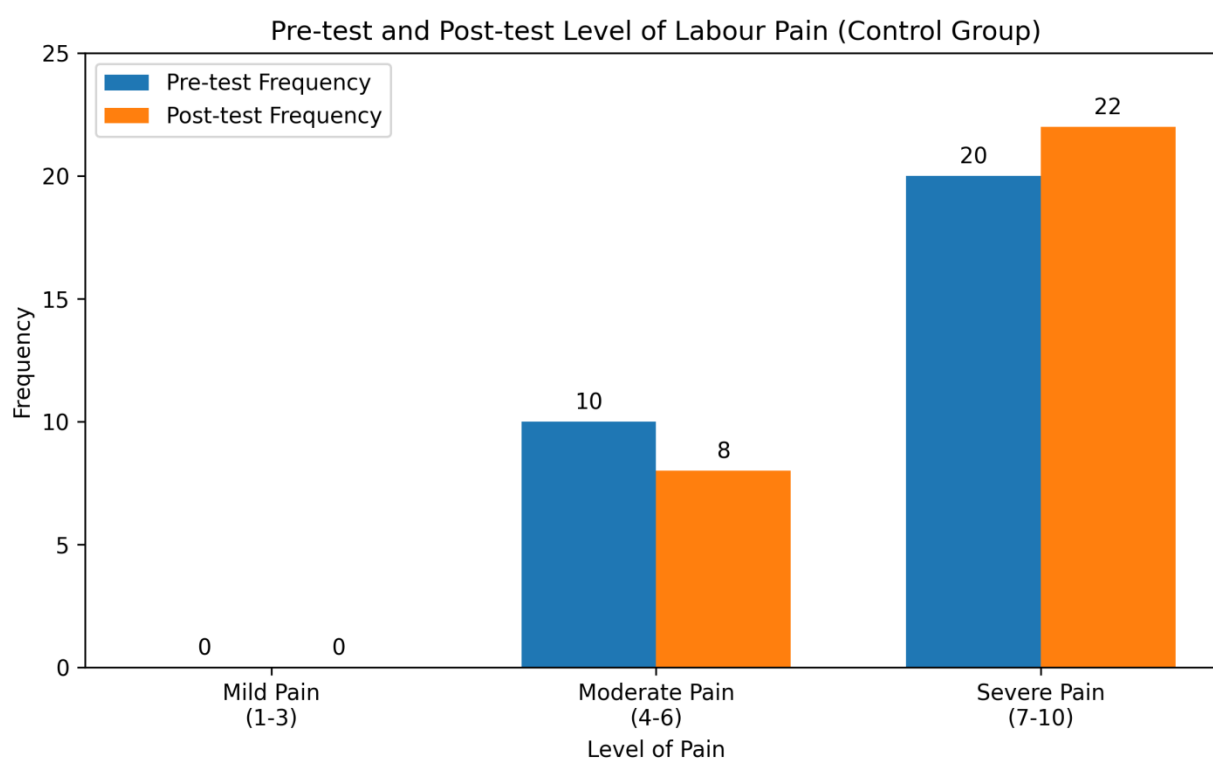


Table 2: Distribution of Pre-test and Post-test Level of Labour Pain Among Primigravida Mothers in Control Group (n=30)

Level of Pain	Pre-test Frequency	Pre-test %	Post-test Frequency	Post-test %
Mild Pain (1–3)	0	0.0%	0	0.0%
Moderate Pain (4–6)	10	33.3%	8	26.7%
Severe Pain (7–10)	20	66.7%	22	73.3%
Total	30	100%	30	100%

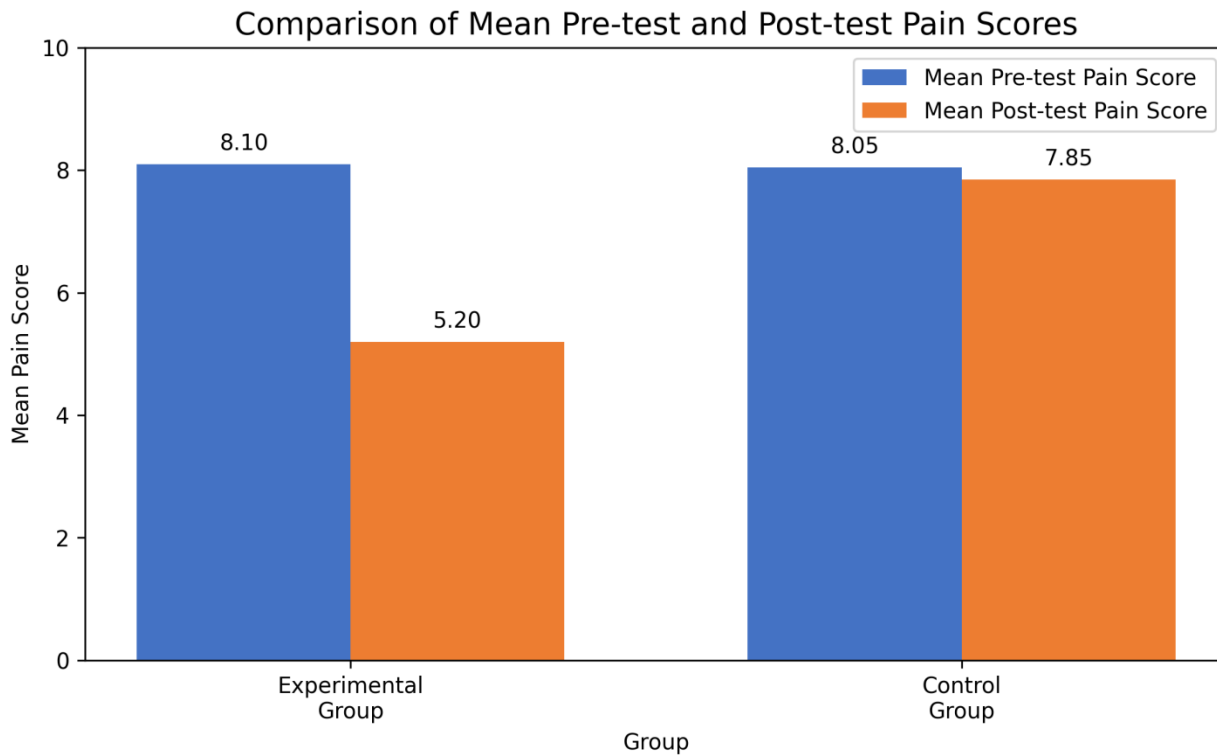
Interpretation:

The control group showed no significant reduction in labour pain.

**Table 3: Effectiveness of Slow-Paced Breathing Exercise on Labour Pain Among Primigravida Mothers**

Group	Mean Pre-test Pain Score	Mean Post-test Pain Score	Mean Difference	SD	t-value	p-value
Experimental Group	8.10	5.20	2.90	1.12	10.85	<0.001*
Control Group	8.05	7.85	0.20	0.96	1.24	>0.05

*Significant at $p < 0.05$ level



Interpretation:

The mean pain score decreased from **8.10 to 5.20** in the experimental group after slow-paced breathing exercise, indicating that the intervention was **highly effective in reducing labour pain among primigravida mothers during the first stage of labour.**

NURSING IMPLICATIONS

Nursing Practice

- Nurses working in maternity and labour units can implement **slow-paced breathing exercise as a safe, simple, and effective non-pharmacological pain management technique** during the first stage of labour.
- It helps primigravida mothers to cope with uterine contractions, promotes relaxation, reduces anxiety, and improves comfort during childbirth.
- Midwives and staff nurses can encourage and guide mothers to practice breathing exercises throughout the active phase of labour.

Nursing Education

- Nursing educators should include **slow-paced breathing techniques and other evidence-based non-pharmacological labour pain relief methods** in nursing curricula and clinical teaching programmes.

- Antenatal education programmes should provide practical training sessions for pregnant women regarding breathing exercises to prepare them for labour.
- Nursing students should be trained to apply relaxation techniques while providing holistic maternity care.

Nursing Administration

- Nurse administrators can develop and implement **standard protocols and guidelines for non-pharmacological labour pain management** in maternity units.
- Regular workshops and training programmes can be organized for nurses regarding the use of breathing techniques during labour.
- Hospital policies can support the integration of slow-paced breathing exercise as a part of quality maternal healthcare services.

Nursing Research

- Further research studies can be conducted using **larger sample sizes and different healthcare settings** to validate the effectiveness of slow-paced breathing exercise.
- Comparative studies can be carried out with other non-pharmacological pain management methods such as relaxation therapy, music therapy, and massage therapy.
- Evidence generated through research can help improve nursing practices related to maternal comfort and labour pain management.

CONCLUSION

The findings of the study concluded that **slow-paced breathing exercise significantly reduces pain perception among primigravida mothers during the first stage of labour**. The technique is a **simple, cost-effective, safe, and non-invasive intervention** that promotes relaxation and enhances coping ability during uterine contractions. Therefore, slow-paced breathing exercise can be effectively incorporated into routine maternity care practices to improve the quality of care and childbirth experience among mothers.

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