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# A Quasi Experimental Study to Assess the Effectiveness of Ice Massage Over Energy Meridian Point Upon First Stage Labour Pain Among Primi Gravid Mothers Admitted at Svbch, Silvassa

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**ABSTRACT**

**Statement of the problem:** The present study "A quasi experimental study to assess the effectiveness of ice massage over energy meridian point upon first stage labour pain among primi gravid mothers admitted at SVBCH, Silvassa."

**Method:** Primigravid mothers from the labour room were randomly assigned to experimental group (30) and control group (30) by purposive sampling method. Standardized Modified Numerical Pain Intensity Scale were used to assess the labour pain during pre-test and post-test of ice pack massage among experimental and control group of primigravid mothers.

**Results:** Data analysis was done using mean, SD, unpaired 't'- tests and chi square test. The results revels that there is a significant difference in the labour pain between the experimental group and control group ($t=2.9259$ $p<0.0049$) after the administration of ice pack massage. So, the research hypothesis H1 is accepted at 0.05 level of significance. The demographic data was depicted that there was no significant association between pre-test labour pain score with selected demographic variable among primi gravid mothers during first stage of labour.

**Interpretation and conclusion:** The results show that ice pack massage during labour proved to be effective non pharmacological methods of treatment to reduce labour pain of mothers in labour. The study concluded that ice pack massage was effective in reducing the level of labour pain.

**Keywords:** Effectiveness, Ice massage, Labor pain, Energy Meridian point, primi gravid mothers

## INTRODUCTION

### Background of the study

Being mother is one of the most blessed and the challenging job in this world. Giving birth to a new life and making it walk through the new world holding its hand showing a good trial makes a mother victory in her life. The none months of pregnancy, as well as labour and delivery are filled with many physical and psychological changes.

The mother, the source of life, requires both mental and physical care at this point in order to move above

this plateau. This support can be provided by a variety of source and in a variety of way. They anticipate receiving support in the form of physical comfort promotion using a combination of non- pharmacological and pharmaceutical techniques.

The world health organization (WHO) defines normal birth as "spontaneous in onset, low risk at the start of labour and remain so throughout labour and delivery. The infant is born spontaneously in the vertex position between 37 and 42 completed weeks of pregnancy".

**Mechanism of action**

Ice massage over the LI4 energy meridian point is a technique that has been studied for its potential to reduce labour pain.

1. COLD STIMULATION – The cold temperature stimulates the nerves in the li4 area, sending signals to the brain.
2. RELEASE OF NEUROTRANSMITTERS- The cold stimulation triggers the release of neurotransmitters such as endorphins, dopamine, and serotonin, which helps to reduce pain perception.
3. GATE CONTROL THEORY- The cold stimulation activates the gate control theory, where the cold sensation closes the "gates" to the brain, reducing the transmission of pain signals.

**Need of the study**

Being a mother is one of the most difficult, frustrating, exhausting, anxiety-inducing, and profoundly fulfilling responsibilities a woman can undertake in her lifetime. Labor is the most crucial time in a woman's life, and childbearing is the most memorable experience of her life. It is a natural physiological phenomenon. The minimization of pain and suffering during childbirth has been the main emphasis of birth educators for a number of decades.

Pain management is a significant issue because labor pain is severe and rapidly worsens. Uterine contractions, cervical dilatation, and the stretching of the vagina and pelvic floor to make room for the presenting part are the main causes of labor discomfort in the late first and second stages. The central nervous system receives unpleasant sensory input, which is the source of the impression of intense pain during labor. The thoracic, lumbar, and sacral nerves—that is, T10, T11, T12, L1, S2, S3, and S4—are thought to transmit these painful impulses; nevertheless, when individual women's accounts are examined, it is possible to observe a rise or decrease in pain levels during birth.

A midwifery education seminar in Florida in 1993 and the University of southern Queensland in 1992 both found that ice pack massage is an excellent way to ease labor pain during contractions. medicines that change the natal and sensory awareness of pain have been the mainstay of labor pain management over the years. However, these medicines have unpleasant side effects, such as partial paralysis from epidurals, confusion from opiates, and a significant loss of memory.

**Objectives**

1. Assess the labour pain score among primi gravid mothers before intervention in control and experimental group.
2. Assess the labour pain score among primi gravid mothers after intervention in control and experimental group.
3. Assess the effectiveness of ice pack massage on post-test labour pain score among experimental and control group of primi gravid mothers.

4. Find out an association between pre -test labour pain score with selected demographic variable among primi gravid mothers during first stage of labour.

**Hypothesis**

1. H1: - There is a significant difference between post-test score of labour pain among primi gravid mothers during first stage of labour in the experimental group and control group.
2. H2: - There is an association between the pre -test scores of pains among in primi gravid mothers during first stage of labour with their selected demographic variable.

**Operational Definition**

**Effectiveness:**

Effectiveness means the extent to which a specific intervention,procedure, or service produces a beneficial result under real-world condition.[11]

In this study, it refers to the extent to which the ice pack massage has impact on the reduction of labor pain for primi gravid mothers in the first stage labor as measured by modified numerical pain intensity scale.

**Ice massage:**

A form of local heat and cold therapy in which ice is used to massage the affected area, reducing pain, inflammation and muscle spasms.[13]

In this study, it refers to application of ice massage between the thumb and fore finger within 3 to 4mm of web of the skin during the time of uterine contractions.

**Labor pain:**

Labour pain is the pain caused by the contraction of the uterine muscles and the compression of the nerves in the cervix and vagina, which occurs in the final stage of pregnancy and prepares the uterus for childbirth. [12]

In this study, it refers to the degree of pain a primigravid mother experiences during contractions in the first stage of labor as measured by modified numerical pain intensity scale.

**Energy Meridian point:**

Energy meridian points are specific points on the body where the flow of energy can be controlled. These points are part of the body's energy system and can be stimulated through pressure or massage to balance the body's energy. [14]

It is situated between first metacarpal within 3-4mm of skin between the thumb and fore finger.

**First stage of labor :**

The first stage of labour is the period from the onset of true labour pains until the cervix is fully dilated to 10 cm, marking the end of the first stage and beginning of the second stage of labour.[12]

In this study, it refers to the period from 4-8 cm cervical dilatation which is identified by per vaginal examination findings.

**Primi- Gravid Mothers:**

A primi gravid mothers are the woman who are pregnant for the first time.

**DELIMITATIONS**

**This study is delimited to: -**

- 4 weeks of data collection.
- Assessment of the level of labour pain was limited to active stage of 1st stage of labour.

- 60 subjects only.
- Labour pain is measured before and after the intervention using a numerical pain intensity scale.

## REVIEW OF LITERATURE

**Hulya Turkmen Phd, Rn, Sera Cetinkaya Rn, Hafis Kilic Rn, Serpil Dincer Tunarn, Mehmet Sirvanci Md, Hilmi Mutlu Md, 2024**, conducted a study on the effect of ice massage applied to the sp6 point on labour pain, labour comfort, labour duration, and anxiety: randomized control clinical trial. Method a single masked, randomized controlled trial was conducted with 100 nulliparous women, including 50 intervention group and 50 control group. The VAS pain score of the pregnant women in the intervention group were significantly lower compared with the control group following the intervention at of 4-5 cm, 6-7 cm, 8-9 cm, ice application to the sp6 point during stage 1 labour pain is reduced, increase comfort, and reduced anxiety.

**Farah Salsabila Jan 11, 2023** conducted a study on the effects of sp6 and li4 acupressure points on pain and duration reduction during the first stage of labor: An evidence-based case report. There were three articles relevant with the eligibility criteria. Three studies of randomized controlled trials showed that acupressure on SP6 point could relieve pain and acupressure on LI4 point could reduce time during the first stage of labor. A systematic review and meta-analysis found that acupressure on SP6 and LI4 points could manage length and pain severity of labor. A study concluded that an application of combining acupressure on SP6 and LI4 was found to have an effect on relieving labor pain and reducing labor time during the first stage.

**Wafaa T Elgzar, Majed S Alshahrani, Heba An Ibrahim, 11/2024**, conducted a study on the non-pharmacological labour pain relives methods: utilization and associated factors among midwives and maternity nurses in Najran, Saudi Arabia. This study explores the utilization of non-pharmacological labour pain relive methods and its associated factors among midwives and maternity nurses. A cross-sectional research was conducted the result revealed that 68.3% of participants utilized non-pharmacological labour pain relive methods. In addition, working unit, providers- patient ratio, working hours, non-pharmacological labour pain relive attitude where significant determinants of non-pharmacological labour pain relive utilization ($p<0.05$).

**Özden Tandoğan , Ümran Oskay 2024 Aug 30,** conducted a study on the effect of Rebozo technique on perceived labour pain and childbirth experience: A randomized controlled trial, Women in the rebozo group had lower pain levels during birth and greater birth satisfaction. Mean cervical dilation in the latent phase was 5.61 cm in the rebozo group and 5.71 cm in the control group. In the active phase, cervical dilatation was 6.03 cm in the rebozo group and 6.68 cm in the control group, and this difference was statistically significant ($P < .001$). In the transition phase, the birth time was 46.29 minutes in the rebozo group and 68.71 minutes in the control group ($P = <.007$**). In the total birth experience score, the rebozo group received an average of 68.52 points, while the control group received 51.58 points ($P < .001$). The study was concluded that the use of the rebozo technique throughout labor helps enhance her feelings about being pregnant, as well as heightening fulfilment with delivery.

## RESEARCH METHODOLOGY

**Research Approach-** Quantitative research approach

**Research Design**- A quasi-experimental research design, pre-test – posttest control group design

**Table no.1 Representation of quasi-experimental research design**

| | | | |
|---|---|---|---|
| **Experimental group** | **O1** | **X** | **O2** |
| **Control group** | **O1** | **-** | **O2** |

**Keys**

O1- Pre-test to assess the demographic variable and numerical pain intensity score

X- Intervention was given for consecutive 8 uterine contraction episode.

O2- Post-test done by using pain intensity pain score

## VARIABLES

### DEMOGRAPHIC VARIABLE

In the present study the baseline data are age, educational status, religion, occupation, living place, type of family, gestational age.

### INDEPENDENT VARIABLES

In the present study independent variable is ice massage on energy meridian point.

### DEPENDENT VARIABLE

In the present study, dependent variable is first stage of labour pain among primi gravid mothers.

## SAMPLE

In the present study the sample are antenatal primigravid mothers who have satisfied the inclusion criteria and admitted in Shri Vinoba Bhave Civil Hospital, Silvassa.

### SAMPLE SIZE

A sample of 60 primigravid mothers admitted in Shri Vinoba Bhave Civil Hospital, Silvassa.

### SAMPLING TECHNIQUE

Non probability, purposive sampling technique was adopted for this study.

## CRITERIA FOR THE SELECTION OF SAMPLES

### Inclusion Criteria

The study includes Primigravid mothers with

- 37- 41 weeks gestation in the first stage of labor
- Cervical dilatation between 4-8 cm as per vaginal finding
- Age limit 18-29 years

### Exclusion Criteria

This study includes primigravid mothers with

- High risk pregnancy (eclampsia,cardiac disease, CPD etc.)
- Mothers who are not willing
- Mothers who are receiving analgesics
- Mothers who have neurological condition (Raynaud's disease, paralysis of hands etc.)

## DESCRIPTION OF THE DATA COLLECTION INSTRUMENTS

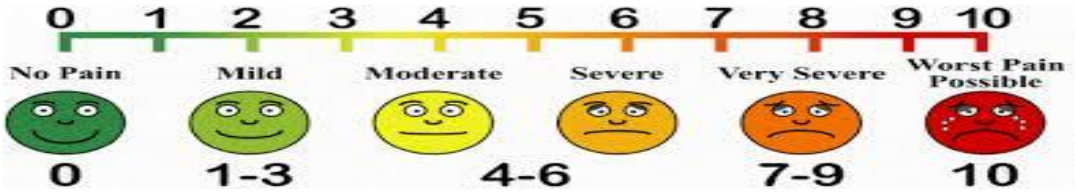
Based on the objectives of the study, data collection instrument was divided into two sections:

### TOOL – I: DEMOGRAPHIC DATA

The Demographic data had items on Age, Educational Status, Religion, Occupation, Living Place, Type of Family, Gestational Age.

**TOOL – II: NUMERICAL PAIN INTENSITY SCALE**

I took permission from Chella Binan, Executive Assistant, Wong-Baker FACES foundation, to use this scale in my study.




**RESULT**

**DATA ANALYSIS AND INTERPRETATION**

**SECTION-1: Percentage distribution of subjects according to their demographic variables.**

**Table.2: Frequency and percentage wise distribution of first stage labour pain among primi gravid mothers admitted at SVBCH according to their demographic variables. (n=60)**

| Demographic variables | Experimental group (n=30) | | Control group (n=30) | |
|---|---|---|---|---|
| | F | % | f | % |
| **1.Age in years:** | | | | |
| a) 18-20 | 12 | 40 | 8 | 26.7 |
| b) 21-25 | 9 | 30 | 13 | 43.3 |
| c) 26-30 | 9 | 30 | 9 | 30 |
| **2.Educational status:** | | | | |
| a) Illiterate | 1 | 3.3 | 3 | 10 |
| b) Primary education | 6 | 20 | 5 | 16.7 |
| c) Secondary education | 11 | 36.7 | 9 | 30 |
| d) Higher secondary | 7 | 23.3 | 6 | 20 |
| e) Under graduate | 5 | 16.7 | 7 | 23.3 |
| **3. Occupation:** | | | | |
| a) Home maker | 16 | 53.3 | 16 | 53.3 |
| b) Private employee | 9 | 30 | 11 | 36.7 |
| c) Govt.employee | 1 | 3.3 | 0 | 0 |
| d) Self-employee | 4 | 13.3 | 3 | 10 |
| **4.Gestational age of mother:** | | | | |
| a) 37 weeks | 2 | 6.7 | 9 | 30 |
| b) 38 weeks | 14 | 46.7 | 6 | 20 |
| c) 39 weeks | 9 | 30 | 8 | 26.7 |
| d) 40 weeks | 3 | 10 | 7 | 23.3 |
| e) 41 weeks | 2 | 6.7 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| **5.Area of residence:** | | | | |
| a) Urban | 13 | 43.3 | 16 | 53.3 |
| **b)** Rural | 17 | 56.7 | 14 | 46.7 |
| **6.Religion:** | | | | |
| a) Hindu | 28 | 93.3 | 27 | 90 |
| b) Muslim | 1 | 3.3 | 1 | 3.3 |
| c) Christian | 1 | 3.3 | 2 | 6.7 |
| **7.Type of family:** | | | | |
| a) Nuclear family | 11 | 36.7 | 14 | 46.7 |
| b) Joint family | 19 | 63.3 | 16 | 53.3 |

**SECTION-2: Labour pain score among primi gravid mothers before and after intervention in control and experimental group.**

**Table. 3 Mean difference of labour pain of primi gravid mothers depending on the intensity of labour pain among control and experimental group (n=60)**

| | Experimental group | | | | Control group | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Over all pain score** | **Mean** | **SD** | **Mean %** | **Over all pain score** | **Mean** | **SD** | **Mean %** | **Mean % Difference** |
| **Pre-test** | 10 | 6.2 | 1.349 | 62 | 10 | 6.133 | 1.383 | 61 | 1 |
| **Post-test** | 10 | 6.5666 | 1.006 | 65.6 | 10 | 7.4 | 1.191 | 74 | 8.4 |

The above table shows that in experimental group, pre-test mean score is 6.2±SD 1.349, Mean % is 62 and in control group pre-test mean score is 6.133± SD 1.383, Mean % is 61 and the obtained mean % difference value in pretest is 1.

In experimental group, the post-test mean score is 6.566±SD 1.006, mean% is 65.6 and in control group post-test mean score is 7.4± SD 1.191, mean % is 74 and the obtained mean% difference value in post-test is 8.4.

**Table-4: Frequency and percentage wise distribution of pretest and post-test pain scale score in both experimental and control group**

| **Level of pain** | **Experimental group** | | | | **Control group** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Pre test** | | **Post test** | | **Pre test** | | **Post test** | |
| | **F** | **%** | **f** | **%** | **F** | **%** | **f** | **%** |
| **No** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Mild** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Moderate** | 17 | 56.6% | 14 | 46.66% | 19 | 63.33% | 5 | 16.6% |
| **Severe** | 13 | 43.33% | 16 | 53.33% | 11 | 36.66% | 25 | 83.3% |
| **Worst** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Overall** | 30 | 100 | 30 | 100 | 30 | 100 | 30 | 100 |

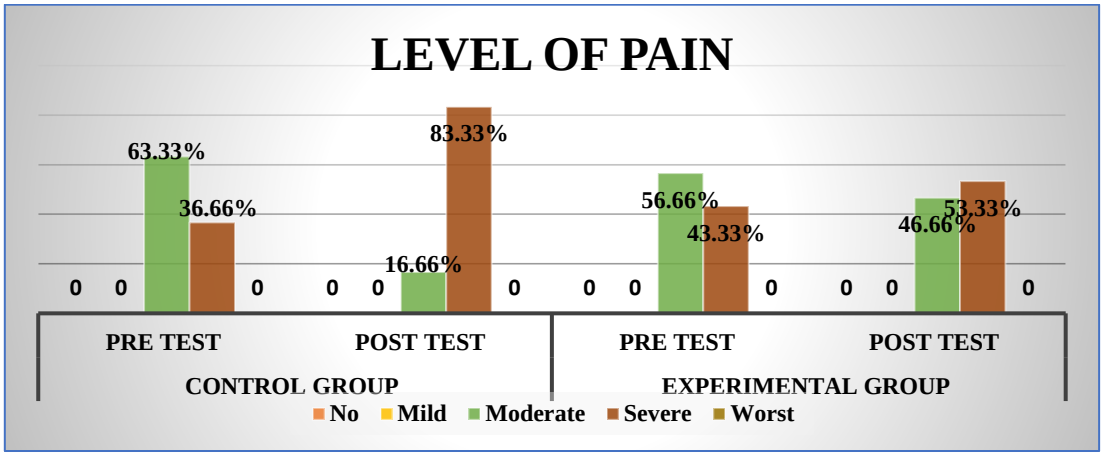



Fig.10.The above data shows that in experimental group, the highest pain scale score marked by primi mothers in pretest was moderate pain (17 mothers,56.66 %) and in post-test the highest pain scale score marked was severe pain (16 mothers,53.33%).

In control group the highest pain scale score marked by primi mothers in pretest was moderate pain (19 mothers,63.66 %) and in post-test the highest pain scale score marked was severe pain (25 mothers,83.33%).

**SECTION-3: Assess the effectiveness of ice pack massage on labour pain score among experimental and control group.**

**Table:5. Unpaired "t"-test between control and experimental group pre-test (n=60)**

| Level of pain | Mean | SD | t value | df | p value | LOS |
|---|---|---|---|---|---|---|
| **Experimental group** | 6.2 | 1.349 | 0.19 | 58 | 0.8434 | NS |
| **Control group** | 6.133 | 1.383 | | | | |

***p<0.05 significant, ** p<0.01 Highly significant & ***p<0.001 Very Highly significant, NS- Not significant**

| | Mean | SD | | | | |
|---|---|---|---|---|---|---|
| | | | t value | df | p value | LOS |
| Level of pain | post-test | post-test | | | | |
| **Experimental group** | 6.566666667 | 1.006301982 | | | | |
| **Control group** | 7.4 | 1.191926867 | 2.9259 | 58 | 0.0049 | HS |

**Table:6 Unpaired "t"-test between control and experimental group posttest(n=60)**

***p<0.05 significant, ** p<0.01 Highly significant & ***p<0.001 Very Highly significant, NS- Not significant**

The above table shows that in experimental group pre-test mean score is (6.2±SD 1.349) and control group pre-test mean score is (6.133± SD 1.383) and the obtained "t" values is 0.19 with p>0.8434, which is statistically non-significant.

The above table shows that in experimental group post-test mean score is (6.566±SD 1.006) and control group post-test mean score is (7.4± SD 1.191) and the obtained "t" values is 2.9259 with p<0.0049 which is statistically highly significant.

These findings reveal that there is a significant difference between post test score of experimental and control group. Hence, the research hypothesis (H1) is accepted.

**SECTION-4: Association between pre -test labour pain scores with the selected demographic variables among primi gravid mothers during first stage of labour**.

**Table 7: Association between pre -test labour pain scores with the selected demographic variables among primi gravid mothers during first stage of labour in experimental group**

| Demographic variables | MODERATE | | SEVERE | | χ2-value | p-value |
|---|---|---|---|---|---|---|
| | f | % | f | % | | |
| **1.Age in years:** | | | | | | |
| a) 18-20 | 9 | 30 | 3 | 10 | 3.64 | 0.162 |
| b) 21-25 | 3 | 10 | 6 | 20 | (df=2) | NS |
| **c)** 26-30 | 5 | 16.7 | 4 | 13.3 | | |
| **2.Educational status:** | | | | | | |
| a) Illiterate | 0 | 0 | 1 | 3.3 | 2.82 | 0.588 |
| b) Primary education | 3 | 10 | 3 | 10 | (df=4) | NS |
| c) Secondary education | 7 | 23.3 | 4 | 13.3 | | |
| d) Higher secondary | 5 | 16.7 | 2 | 6.7 | | |
| e) Under graduate | 2 | 6.7 | 3 | 10 | | |
| **3. Occupation:** | | | | | | |
| a) Home maker | 11 | 36.7 | 5 | 16.7 | 6.61 | 0.085 |
| b) Private employee | 2 | 6.7 | 7 | 23.3 | (df=3) | NS |
| c) Govt. Employee | 1 | 3.3 | 0 | 0 | | |
| d) Self-employee | 3 | 10 | 1 | 3.3 | | |
| **4.Gestational age of mother:** | | | | | | |
| a) 37 weeks | 2 | 6.7 | 0 | 0 | 3.11 | 0.540 |
| b) 38 weeks | 9 | 30 | 5 | 16.7 | (df=4) | NS |
| c) 39 weeks | 4 | 13.3 | 5 | 16.7 | | |
| d) 40 weeks | 1 | 3.3 | 2 | 6.7 | | |
| e) 41 weeks | 1 | 3.3 | 1 | 3.3 | | |
| **5.Area of residence:** | 8 | 26.7 | 5 | 16.7 | 0.22 | 0.638 |
| a) Urban | 9 | 30 | 8 | 26.7 | (df=1) | NS |
| b) Rural | | | | | | |
| **6.Religion:** | | | | | | |

| Demographic variables | MODERATE | | SEVERE | | χ2-value | p-value |
|---|---|---|---|---|---|---|
| | f | % | f | % | | |
| a) Hindu | 16 | 53.3 | 12 | 40 | 2.07 | 0.354 |
| b) Muslim | 0 | 0 | 1 | 3.3 | (df=3) | NS |
| c) Christian | 1 | 3.3 | 0 | 0 | | |
| **7.Type of family:** | | | | | | |
| a) Nuclear family | 6 | 20 | 5 | 16.7 | 0.03 | 0.858 |
| b) Joint family | 11 | 36.7 | 8 | 26.7 | (df=1) | NS |

***p<0.05 significant, ** p<0.01 Highly significant & ***p<0.001 Very Highly significant, NS- Not significant**

**Table 8: Association between pre -test labour pain scores with the selected demographic variables among primi gravid mothers during first stage of labour in experimental group**

| Demographic variables | MODERATE | | SEVERE | | χ2-value | p-value |
|---|---|---|---|---|---|---|
| | f | % | f | % | | |
| **1.Age in years:** | | | | | | |
| a) 18-20 | 4 | 13.3 | 4 | 13.3 | 0.85 | 0.654 |
| b) 21-25 | 9 | 30 | 4 | 13.3 | (df=2) | NS |
| **c)** 26-30 | 6 | 20 | 3 | 10 | | |
| **2.Educational status:** | | | | | | |
| a) Illiterate | 2 | 6.7 | 1 | 3.3 | 2.24 | 0.691 |
| b) Primary education | 3 | 10 | 2 | 6.7 | (df=4) | NS |
| c) Secondary education | 5 | 16.7 | 4 | 13.3 | | |
| d) Higher secondary | 3 | 10 | 3 | 10 | | |
| e) Under graduate | 6 | 20 | 1 | 3.3 | | |
| **3. Occupation:** | | | | | | |
| a) Home maker | 8 | 26.7 | 8 | 26.7 | 2.85 | 0.240 |
| b) Private employee | 9 | 30 | 2 | 6.7 | (df=2) | NS |
| c) Self-employee | 2 | 6.7 | 1 | 3.3 | | |
| **4.Gestational age of mother:** | | | | | | |
| a) 37 weeks | 7 | 23.3 | 2 | 6.7 | 3.33 | 0.343 |
| b) 38 weeks | 2 | 6.7 | 4 | 13.3 | (df=3) | NS |
| c) 39 weeks | 5 | 16.7 | 3 | 10 | | |
| **d)** 40 weeks | 5 | 16.7 | 2 | 6.7 | | |
| **5.Area of residence:** | | | | | | |
| a) Urban | 9 | 30 | 7 | 23.3 | 0.741 | 0.389 |
| **b)** Rural | 10 | 33.3 | 4 | 13.3 | (df=1) | NS |
| **6.Religion:** | | | | | | |

| Demographic variables | MODERATE | | SEVERE | | χ2-value | p-value |
|---|---|---|---|---|---|---|
| | f | % | f | % | | |
| a) Hindu | 17 | 56.7 | 10 | 33.3 | 2.88 | 0.236 |
| b) Muslim | 0 | 0 | 1 | 3.3 | (df=2) | NS |
| c) Christian | 2 | 6.7 | 0 | 0 | | |
| **7.Type of family:** | | | | | | |
| a) Nuclear family | 9 | 30 | 5 | 16.7 | 0.01 | 0.919 |
| b) Joint family | 10 | 33.3 | 6 | 20 | (df=1) | NS |

***p<0.05 significant, ** p<0.01 Highly significant & ***p<0.001 Very Highly significant, NS- Not significant**

Above table shows that, there is no any significant association between labour pain and demographic variables like age in year, educational status, occupation, gestational age of mother, area of residence, religion and type of family in experimental or control group. Hence the research hypothesis H2 is rejected for the association of labour pain score with selected demographic variable among primi gravid mothers during first stage of labour.

## DISCUSSION

The study was conducted on a quasi-experimental study to assess the effectiveness of ice massage over energy meridian point upon first stage labour pain among primi gravid mothers admitted at SVBCH, Silvassa.

Finding of the study discussed based on the hypothesis of the study. It represented following.

- Section – 1. Distribution of primi gravid mothers according to their demographic variables.
- Section – 2. Effectiveness of ice massage on post-test labour pain score among experimental and control group.
- Section – 3. The association between pre-test labour pain score with selected demographic variables among primi gravid mothers during first stage of labour.

**Section=1 distribution of primi gravid mothers according to their demographic variables.**

**Age in a year:** Majority of primi mothers, 12(40%) were having age <20 years in experimental group and 13(43.3%) were from 21–25-year-old in control group. Supportive study done by Mohana's study (2008) which reported that 12(48%) of them belongs to the age group of 21-25 years.[55]

**Education status:** Majority of primi mothers 11(36.7%) in experimental group and 9(30%) in control group were studied from secondary education. Similar study was done by Ananthi devi in 2012 which also reveals that majority of the primigravid mothers of the experimental and control group had secondary education: 18(60.0%) in experimental group and 17(58.6%) in control group.[56]

**Occupation:** Majority of primi mothers 16(53.3%) in experimental group and 16(53.3) in control group were unemployed. Supportive study done by K. Anbuselvi's (2009) shows majority of samples, 13(86.7%) were home makers. [58]

**Gestational age of mother:** Majority of the mothers,14(46.7%) in experimental group were having 38 weeks of gestational age and in control group, 8(26.7%) were from 39 weeks of gestational age. Supportive

study done by Ms. Sudha N (2011) shows that majority, 11(36.6%) mothers were in 39 weeks pf pregnancy.[59]

**Area of residence:** Majority of mothers 17(56.7%) in experimental group were living in rural area and 16(53.3%) mothers in control group were from urban area. Supportive study done by Ananthi devi (2012) reveals a large number of primigravid mothers from the urban area 15(50.0%).[56]

**Religion:** Majority of the primi mothers 28(93.3%) in experimental group and 27(90%) were Hindu; Similar study done by Ananthi devi (2012) shows that majority of the subjects belonged to Hindu religion 19(63.3%) in experimental group and 17(56.7%).

**Type of family:** Majority of mothers 19(63.3%) in experimental group and in control group 16(53.3%) belongs to joint family. In similar study done by Ananthi devi (2012), it is found that majority of the primigravid mothers belong to joint family 18(60.0%) in experimental group and 16(53.3%) in control group.

**Section=2 Effectiveness of ice massage on post-test labour pain score among experimental and control group.**

The above table shows that in experimental group post-test mean score is (6.566±SD 1.006) and control group post-test mean score is (7.4± SD 1.191) and the obtained "t" values is 2.9259 with $p<0.0049$ which is statistically highly significant.

These findings reveal that there is a significant difference between post test score of experimental and control group. Hence, the research hypothesis (H1) is accepted.

A similar study was conducted by A. Indumathi (2018) on effectiveness of ice massage in reduction of labour pain during first stage of labour among primigravid mothers. Their study findings showed that experimental group post-test mean score value was 5.13 ±SD 1.358 and control group post-test mean score was 8.43 ±SD1.082 . Obtained "t" values is 11.25 at 5% level of significance. The calculated t value is more than table value (2.002). This indicated that the ice massage therapy was effective.

**Section = 3 The association between pre-test labour pain score with selected demographic variable among primi gravid mothers during first stage of labour.**

In this study, there was no any significant association between labour pain and demographic variable in experimental and control group. The research hypothesis H2 is rejected for the association of labour pain score with selected demographic variable among primi gravid mothers during first stage of labour.

The similar study was conducted by Ms. Sudha N. (2011) on Effectiveness of acupressure vs ice massage over meridian point on labour pain in primi parturient women during first stage of labour at a selected hospital, salem. This study states that their baseline values were having no significant association between selected demographic variables and level of labour pain in both experimental group– I and experimental group-II. Hence it was concluded that H2 is rejected.

## CONCLUSION

In conclusion this study provides evidence supporting the effectiveness of the ice massage as a valuable tool in reduction of pain during first stage of labour pain upon primi gravid mothers. These finding contributes to the growing body of literature advocating for holistic and patient centred approaches in health care.

## NURSING IMPLICATIONS

Nursing implication of the study could be discussed under nursing education, nursing practice, nursing administration and nursing research.

## NURSING EDUCATION

- Nursing curriculum should update nursing student to identify and provide supportive health education to the primi-parturient women regarding ice massage for relieving pain during 1st stage of labour. That will be useful for nurses to provide information about ice massage over energy merdian point at home situation.
- Nursing education should emphasis the care of parturient women during labour and various measures to relieve labour pain. Student and teachers can work together in clinical area to alleviate pain during labour.
- Nurses can teach non pharmacological procedure that mother can do at themselves which reduces and relieve the pain without any side effects of medicine

## NURSING ADMINISTRATION

- The nurse administrator should co-ordinate her activity in promotive aspects of care among primi parturient women by participating, practicing, supervising ice massage.
- Nursing administrator should organize in service education programme regarding the effectiveness of ice massage on level of labour pain for staff nurses.
- The nursing curriculum should update nursing students to identify and provide quality care and hospital policy can include ice massage on care of primi-parturient women during 1st stage of labour and in turn help to reduce the hospital cost.

## NURSING RESEARCH

- There is a need for extended and intensive nursing research in the area of maternal and child health especially to assess the effectiveness of ice massage.
- Research should be done on innovative method of teaching, better practice of nursing care and development of good and effective policies to provide quality nursing care on labour pain management during 1st stage of labour.
- Nurses can use this study finding as evidence-based practice in reducing labour pain

## NURSING PRACTICE

- Ice massage to be used in various areas of community health centre and maternity centre.
- Midwife and student can use this intervention of ice massage as a routine care in reduction of labor pain.
- Ice massage to be used by multipurpose health worker and nursing assistants.
- Nurses should encourage and teach the partners to practice ice massage during labour.

## LIMITATION

- Generality- Finding may not be generalizable to all primi-gravid mothers having labour pain, as the study was conducted in a single setting.

- Per vaginal examination findings were taken from the written data from the patients file, which was done by the on-duty residents, consultants, nursing officers and the researcher in labour room as per patients' progress.

## RECOMMENDATIONS

- A similar study can be conducted on a large sample to generalize the findings.
- A study can be done to assess the knowledge and practice of ice massage among support persons in the labour ward.
- A study can be done to assess the effectiveness of structured teaching program on ice massage practice on reduction of labour pain among antenatal mothers.
- Comparison can be done by using this method of treatment between primi and multi mothers.

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