International Journal of Midwifery and Nursing Practice

E-ISSN: 2663-0435
P-ISSN: 2663-0427
Impact Factor (RJIF): 6.18
www.nursingpractice.net
IJMNP 2025; 8(2): 39-43
Received: 23-06-2025
Accepted: 27-07-2025

Marlene Peter
Associate Professor, Choithram College of Nursing, Indore, Madhya Pradesh, India

Varsha Hariharan
Clinical Nurse, Midwife, Specialist Lactation Consultant, Women Wellness and Research Center, Hamad Medical Corporation Doha, Qatar

Dr. Prachi Awasthi
Professor, Choithram College of Nursing, Indore, Madhya Pradesh, India

Corresponding Author:
Marlene Peter
Associate Professor, Choithram College of Nursing, Indore, Madhya Pradesh, India

Effectiveness of acupressure therapy (LI4 point) on labour pain intensity and cervical dilatation during first stage of labour

Marlene Peter, Varsha Hariharan and Prachi Awasthi

DOI: https://www.doi.org/10.33545/26630427.2025.v8.i2a.210

Abstract
Labor pain is one of the most intense experiences for women, influenced by coping abilities, environment, and psychosocial factors. To explore safe non-pharmacological options, a quasi-experimental study was conducted in selected hospitals of Indore to assess the effectiveness of acupressure therapy (Li4 point) on labor pain and cervical dilatation during the first stage of labor. Thirty parturients were selected through purposive sampling, with the experimental group receiving Li4 acupressure during contractions and the control group receiving routine care. Pain intensity was assessed using the Numerical Pain Assessment Scale and Modified Fordyce Pain Behavior Scale, while cervical dilatation was observed using the WHO simplified partograph. Results revealed that acupressure significantly reduced labor pain (t28=4.25, t28=5.42), enhanced cervical dilatation (t28=2.9), and shortened labor duration (t28=3.12). The study concluded that Li4 acupressure therapy is an effective, simple, and beneficial technique for improving maternal outcomes during labor.

Keywords: Parturient, labor pain intensity, cervical dilatation, acupressure therapy, LI4 acupressure point, first stage of labor, effectiveness

Introduction

Background of the study

Cervical dilatation relates with dilatation of the external os and effacement is determined by the length of the cervical canal in the vagina. In primigravida, the cervix may be completely effaced, feeling life a paper although not dilated enough to admit a fingertip. While in multipara, dilatation and taking up occur simultaneously which are more abrupt following rupture of the membranes. Generally, there are two options for pain relief during labour and for the augmentation of labour, this use either pharmacological or non-pharmacological method. Pharmacological methods have adverse side effects for the mother and foetus, whereas non-pharmacological methods are free from side effects. Acupressure is a non-invasive method which is used to augment labour, provide pain relief, and shorten delivery time. Lee MK, Chang SB, Kang DH (2004)

Need of the study

Pain is inevitable, suffering is optional" -Sheryl Tuttle Ross.

Pain is a symptom that cannot be objectively assessed. It can't be assessed just by seeing the expression of the mother and know precisely what hurts, how badly, what the pain feels like and at what intensity it is perceived. Pain during labour is therefore what the person experience and says about it. (WHO 2010**)**

Women think that caesarean section is the best method to get relieved from pain during labour. In U.S and Canada studies revealed that nearly 31.8% go for caesarean section, and more than 22% of women undergo induction of labour to prevent pain during labour. According to WHO statistics in India out of 80% of caesarean sections 18% of women go for caesarean section to prevent pain during labour process.

Review of Literature

Shenoy, S.T. *et al*. (2010) Conducted a study on evaluate the effect of acupressure administered during the active phase of labour on primi mothers rating of labour pain. Seventy-one mothers randomized to receive acupressure at spleen 6 (sp6) point on both legs

during contractions over a 30 minutes period (acupressure group), 80 women to receive light touch at sp6 on both legs during the same period of time (touch group) and 78 women to receive standard routine care. Finally, they found that acupressure seems to reduce pain during the active phase of labour in primi mothers giving birth in a context in which social support and epidural analgesia are not available. Finding revealed that there was significant reduction in labour pain intensity while giving acupressure on sp6 point (p<0.001), less reduction during light touch (p<0.05) and no reduction when standard care is given. However, the treatment effect is small which suggest that acupressure may be most effective during the initial phase of labour.

Statement of the problem

"A quasi-experimental study to assess the effectiveness of acupressure therapy (Li4 point) on labour pain intensity and cervical dilatation during first stage of labour among parturient admitted in selected hospitals of Indore in the year 2016-2017."

Objectives of the study

1. To assess the labour pain intensity among parturient before acupressure therapy/routine care during first stage of labour of experimental group and control group.
2. To assess the cervical dilatation among parturient before acupressure therapy during first stage of labour of experimental group.
3. To assess the cervical dilatation among parturient before routine care during first stage of labour of control group.
4. To assess the labour pain intensity among parturient after an interval of every 30 minutes in experimental group and control group.
5. To assess the progress in cervical dilatation among parturient after acupressure therapy in experimental group.
6. To assess the progress in cervical dilatation among routine care in control group.
7. To compare the labour pain intensity among parturient of experimental group and control group.
8. To compare the cervical dilatation among parturient of experimental group and control group.

Hypotheses of the study

1. **$H0_1$:** There is no significant reduction in the labour pain perception among parturient during first stage of labour after the acupressure therapy at the level of P<0.05.
2. **H_1:** There is significant reduction in the labour pain perception among parturient during first stage of labour after the acupressure therapy at the level of P<0.05.
3. **$H0_2$**: There is no significant progress in the dilatation of cervix among parturient during first stage of labour after the acupressure therapy at the level of P< 0.05.
4. **H_2**: There is significant progress in the dilatation of cervix among parturient during first stage of labour after the acupressure therapy at the level of P< 0.05.

Research Methodology

Material and Methods

Material

- **Approach:** A Quantitative & evaluative research approach was used in the study
- **Design:** A non-equivalent control group design
- **Setting:** Selected Govt. Hospitals of Indore

Method

- **Sampling technique:** Non-probability purposive sampling.
- **Sample:** 15 parturient during labour pain in first stage of labour in control group and 15 parturient during labour pain in first stage of labour in experimental group
- **Sample size:** 30

Inclusion Criteria

- Parturient who are undergoing normal vaginal delivery.
- Parturient who are in 1st stage labour from 4 cm onwards.
- Parturient who has completed 37 weeks of gestation.
- Parturient who are primi gravida mothers.
- Parturient who can speak and understand Hindi.

Exclusion Criteria

- Parturient with medical complications.
- Parturient with any kind of surgical history.
- Parturient who are receiving any kind of non-pharmacological and pharmacological pain relieve measures.

Validation of the tool

Validity is a criterion for evaluation the quality of measure of an instrument. Content validity refer to the degree to which an instrument measures what it is supposed to measure. **(**Polit, Denise. And Hunger Bernadette.P.1999)

The prepared tool with statement, objectives, and hypotheses was submitted to 5 obstetrics and gynecological department expert and one stastician and one is acupressure therapist. Necessary changes were made as per suggestions given by the expert's opinion.

Reliability of the tool

Reliability of the research instrument is defined as the extent to which the instrument yields the same results on repeated measured. It is then concerned with consistency, accuracy, precision, stability, equivalence and homogeneity **(**Kothari, C.R. 2006).

Reliability of modified Fordyce behavioral labor pain scale and visual analogue pain scale. The reliability was calculated by using the inter-rater method, which measures the coefficient of internal consistency. The correlation obtained by using Karl Pearson's Coefficient of correlation formula. The reliability was calculated and obtained value was r=0.86 which showed that the tool was reliable.

Section I: Socio-Demographic Variables

In the experimental group (15 parturients), the majority (33.3%) were aged 21-25 years, while in the control group (15 parturients), most (46.7%) were aged 21-25 and 26-30 years. Regarding education, 46.7% in the experimental group had primary school education, whereas 40% in the control group had never attended school. Most participants were Hindu (66% experimental, 60% control). Homemakers dominated in both groups (80% experimental, 66.7% control), with 33.3% working women in the control group.

Knowledge about acupressure was very limited: 93.3% in

the experimental and 86.7% in the control group had no prior information. Antenatal records showed that 73.3% (experimental) and 86.7% (control) were booked cases, with >3 antenatal visits reported in 80% (experimental) and 66.7% (control).

Family presence during the first stage of labor was noted in 86.6% (experimental) and 100% (control). In the experimental group, the mother-in-law was most commonly present (46.6%), whereas in the control group, the mother was present in 40% of cases.

Section II: Assessment of labour pain intensity on numerical pain assessment scale

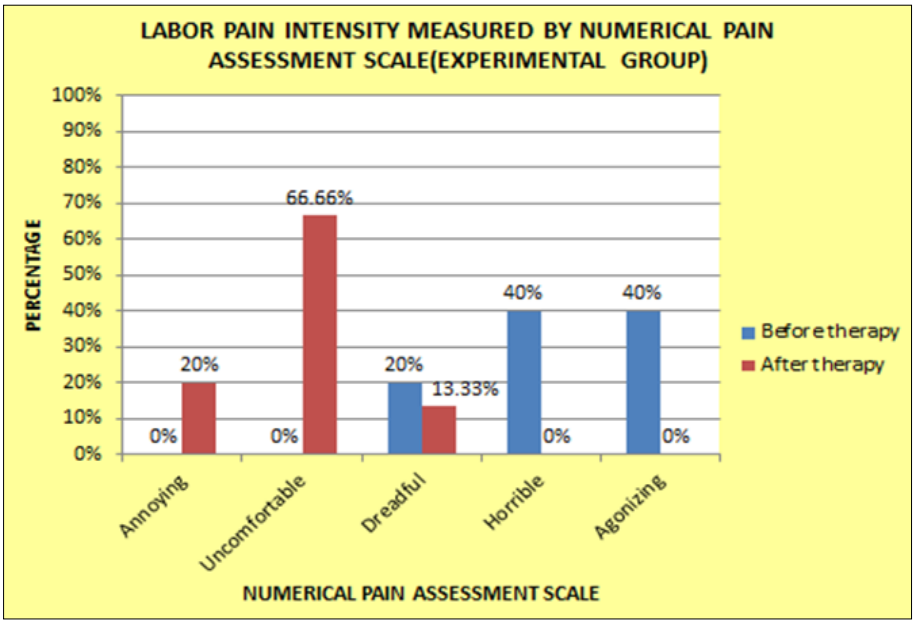

Fig 1: Bar Diagram Showing Distribution of Labour Pain Intensity Measured on Numerical Pain Assessment Scale among Experimental Group

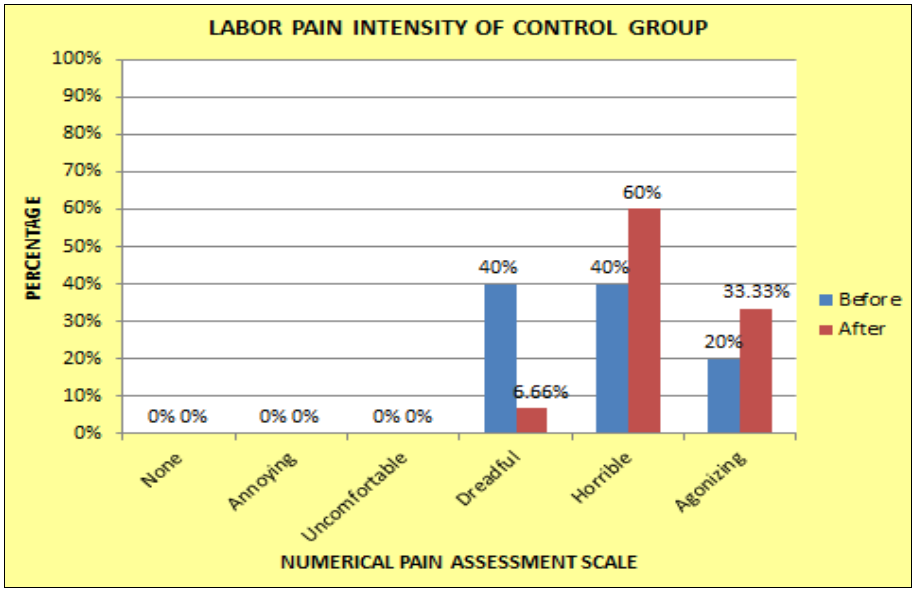

Fig 2: Bar Diagram Showing Distribution of Labour Pain Intensity Measured on Numerical Pain Assessment Scale among Control Group

The data presented in the graph shows the labor pain intensity among the experimental group measured on the Numerical Pain Assessment Scale. Before acupressure therapy, 40% of parturients experienced horrible and agonizing pain, and 20% reported dreadful pain. After the application of acupressure therapy, pain intensity was significantly reduced, with 66.6% reporting only uncomfortable pain, 20% annoying pain, and 13.3% dreadful pain.

In contrast, in the control group, before 30 minutes of routine care, 40% of parturients reported dreadful and horrible pain, and 20% experienced agonizing pain. After 30 minutes of routine care, there was no reduction in pain intensity. Instead, 60% continued to experience horrible pain, 33.3% agonizing pain, and 6.6% dreadful pain.

Table 1: Effectiveness of Acupressure Therapy on Experimental Group (Measured by Modified Fordyce Behavior Pain Scale)

TEST	Mean	Mean Difference	SD	SE	DF	T Value
Pre-test	10.13	3.2	0.95	0.24	14	13.58 * S
Post test	6.8					

Data in Table depicts that mean score of pain intensity assessed by Modified Fordyce Behavior Pain Scale for experimental group pre intervention was 10.13 and post intervention was 6.8. The mean difference was 3.2 with the SD of ±0.95.The computed „t" value 13.58 at degree of freedom 14.This indicates that there was significant difference in pre intervention score and post intervention assessed by Fordyce Modified Behavior Pain Scale among experimental group at the level of $p \leq 0.05$.Hence it was inferred that acupressure therapy (Li4 point) was effective in reducing labour pain and here, H1 was accepted.

Table 2: Comparison between experimental and control group (Post test) (Modified Fordyce Behaviour Pain Scale) (N=30)

Group	Mean	Mean Difference	SD	SE	DF	T Value
Experimental (n=15)	6.86	3.74	2.04	0.69	28	5.42 *S
Control (n=15)	10.6					

Section III: Assessment Of Cervical Dilataion Done Per Vaginally Observed By Partograph

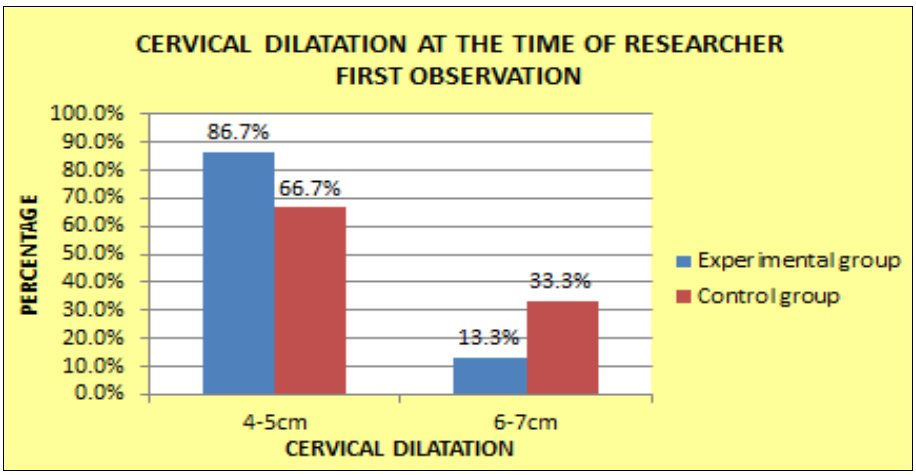

Fig 3: Bar Diagram Showing Distribution of Cervical Dilatation at the Time of Researcher's First Observation

Table 3: Comparison of First Observation Score of Cervical dilatation (Pre Test) (N=30)

Group	Mean	Mean Difference	SD	SE	DF	T Value
Experimental (n=15)	4.26	0.3	0.89	0.30	28	1.3 * NS
Control (n=15)	4.66					

Data in Table depicts that score of cervical dilatation assessed for experimental group was 4.26 and for control group was 4.66. The mean difference was 0.3 with the SD of ±0.89. The computed „t" value was 1.3 at degree of freedom 28.This indicates that there was no significant difference in first observation score of cervical dilatation of experimental group and control group at the level of $p \leq 0.05$.So it was inferred that both the groups taken for the study were homogeneous.

Table 4: Comparison of First Observation Score of Cervical dilatation (Post Test) (N=30)

Group	Mean	Mean Difference	SD	SE	DF	T Value
Experimental (n=15)	8.13	1.73	1.81	0.61	28	2.83 * S
Control (n=15)	6.4					

Data in Table revealed that post-test mean score of cervical dilatation for experimental group was 8.13 and for control group was 6.4. The mean difference was1.73 with the SD of ±1.81.The computed„t" value was 2.83 at degree of freedom 28. This indicated that there was significant difference in post intervention score of experimental group and control group at the level of $p \leq 0.05$.Hence it was inferred that acupressure therapy (Li4 point) was effective in reducing labour pain and here, H2 was accepted.

Discussion

Assessment of Labour Pain Intensity

Effectiveness within Experimental Group

Findings revealed no significant difference in pre- and post-intervention pain scores in the control group ($t14=2.08$, $p \leq 0.05$), whereas a significant reduction was observed in the experimental group on the Numerical Pain Assessment Scale ($t14=14.84$, $p \leq 0.05$). Thus, acupressure therapy (Li4 point) was effective, and H1 was accepted.

Comparison between Groups

A significant difference in pain intensity was found between the experimental and control groups ($t28=4.25$, $p \leq 0.05$), confirming the effectiveness of acupressure therapy.

Modified Fordyce Pain Behavior Scale:

No significant change was observed in the control group ($t14=1.85$, $p \leq 0.05$), whereas the experimental group showed significant reduction ($t14=13.58$, $p \leq 0.05$). Between groups, a significant difference was noted ($t28=5.42$, $p \leq 0.05$). Hence, H1 was accepted.

Supporting evidence: A study by Vijaya Kumar & Annapoorani (2010) also reported significant reductions in labor pain with acupressure.

Assessment of Cervical Dilatation

H_2: There is significant progress in cervical dilatation among parturients receiving acupressure therapy. Findings revealed a significant difference between experimental and control groups ($t28=3.12$, $p \leq 0.05$), indicating Li4 acupressure enhances cervical dilatation. Thus, H2 was accepted.

Supporting evidence: Anderson (2006) also demonstrated

that Li4 and BL67 acupressure significantly reduced labor pain and promoted uterine contractions.

Conclusion

Pregnancy is a precious event in every woman's life, and labor pain management plays a crucial role in ensuring a positive experience. This study demonstrated that Li4 acupressure is safe, effective, and beneficial for both mother and baby. It reduces labor pain intensity, enhances cervical dilatation, shortens labor duration, and helps avoid unnecessary medical interventions without interfering with uterine contractions.

Midwives should be encouraged to adopt evidence-based practices like acupressure to support women during labor, moving beyond traditional beliefs. Overall, the findings confirm the effectiveness of Li4 acupressure and highlight its potential as a simple, non-invasive method to improve maternal satisfaction and outcomes during the first stage of labor.

Acknowledgement

Not available

Author's Contribution

Not available

Conflict of Interest

Not available

Financial Support

Not available

References

1. Behmanesh F, Pasha H, Zeinalzadeh M. Effect of heat therapy on labor pain and the time of labor in primigravidae. Iranian Red Crescent Medical Journal. 2007;11(2):188-192.
2. Brown S, Douglas C, Flod L. Women's evaluation of intrapartum, non-pharmacological pain relief methods used during labor. Journal of Perinatal Education. 2001;10(3):1-8.
3. Caton D, Corry MP, Frigoletto FD, Hopkins DP, Lieberman E, Mayberry L, *et al*. The nature and management of labor pain: executive summary. American Journal of Obstetrics and Gynecology. 2002 May;186(5 Suppl Nature):S1-S15.
4. Chang MY, Chen CH, Huang KF. A comparison of massage effect on labor pain using the McGill Pain Questionnaire. Journal of Nursing Research. 2006;14(3):190-197.
5. Dixon WJ, Massey FJ. Introduction to statistical analysis. 4th ed. New York: McGraw-Hill; 1983.
   Gentz BA. Alternative therapies for the management of pain in labor and delivery. Clinical Obstetrics and Gynecology. 2001;44(4):704-735.
6. Hesketh T, Zhu WX. Traditional Chinese medicine: health in China one country, two systems. Retrieved 2011 Feb 15 from: https://en.wikipedia.org/wiki/Traditional_Chinese_medicine
7. Heydari P, Mozhdeh F, Masloum SR, Tanbakouei K, Joudaki K. Effect of SP6 acupressure on length of labor. Iranian Journal of Obstetrics and Gynecology. 2008;11(2):15-22. Persian.
8. Hjelmstedt A. New research: acupressure treatment would reduce labor pain. Alternative and Complementary Medicine. 2009. Retrieved 2016 Feb 22 from: www.acupunture.blog.co.uk
9. Huntly AL, Coon JT, Ernst E. Complementary and alternative therapies for labor pain. American Journal of Obstetrics and Gynecology. 2003;191(1):36-44.
10. Kuti O, Faponle AF. Perception of labor pain among the Yoruba ethnic group in Nigeria. Journal of Obstetrics and Gynaecology. 2006;26(4):322-334.

How to Cite This Article
Peter M, Hariharan V, Awasthi P. Effectiveness of acupressure therapy (LI4 point) on labour pain intensity and cervical dilatation during first stage of labour. International Journal of Midwifery and Nursing Practice. 2025; 8(2): 39-43