Effect of Acupressure on Labour Pain during First Stage of Labour among Primi Mothers in a Selected Hospital of Delhi

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Abstract
The study aimed to assess the degree of pain during labour in experimental and control groups before and after intervention and to compare the pain score during labour between the experimental and control groups after intervention. This experimental pre-test and post-test control group study was conducted on 60 primi mothers (30 each in experimental and control group) in Swami Dayanand Hospital, Delhi. The mean post-test pain score of control group (8.23) was higher than mean pre-test pain score (7.13) with a mean difference of 1.1 and standard deviation of 2.22. The obtained t-value (3.98) was higher than the t-value of 2.04 at df (29) at 0.05 level of significance. The mean post-test pain score in experimental group was 6.17 and mean post-test pain score of control group was 8.23 with a mean difference of 2.06 and standard deviation of 1.10. The t-value computed at 2.41 was more than the t-value of 2.00 at df (58) at 0.05 level of significance. The results indicate that Acupressure at point Li4 was effective in reducing the pain in experimental group. The findings suggest that the non-pharmacological method of pain relief measure like acupressure at point Li4 was effective in reducing labour pain in experimental group and in the control group it was found that pain was increasing as no intervention was done.

Objective
The objectives of the study were:
1. To assess the degree of pain during labour in experimental and control groups before and after intervention.
2. To compare the pain score during labour between the experimental and control groups after intervention.

Hypothesis
H1: There will be a significant difference in the pain score during labour of experimental group before and after intervention as evident from pain score assessed by numerical pain intensity scale at 0.05 level of significance.
H2: There will be a significant difference in the pain score during labour between experimental and control group after intervention as evident from pain score assessed by numerical pain intensity scale at 0.05 level of significance.

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childbirth is one of the most joyous events in women’s lives. In an effort to make childbirth a positive experience for women, there is an increasing emphasis on intrapartum pain management. For a woman in labour, her labour experience may depend on how well her physical, psychological and spiritual energies are balanced and harmonised. Acupressure points are specific locations along the meridians where the flow of qi gathers. Pressure applied to the traditional acupuncture points with the thumbs, tip of the index finger, or palm of the hand or pinching and squeezing as means of applying pressure stimulate the nerves and close the gate or trigger the release of the body’s natural endorphins and reduce labour pain.

A mother is often anxious, fearful and unable to cope with pain during labour. Fear induces restriction of circulation of the blood in the uterus thereby limiting in many ways, efficiency of the mechanism of the parturition. There is growing demand for natural childbirth and non-pharmacological methods of pain and anxiety relief during childbirth. Therefore the investigator felt that nursing research in this area will equip Nurses in skills for reducing pain in labour.

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score assessed by numerical pain intensity scale at 0.05 level of significance.

The conceptual model selected for this study was based on Nursing Process developed by Ida Jean Oralando in 1958.

**Review of Literature**

*Related to use of non-pharmacological methods to reduce labour pain:* Taavoni S, Abdolahian S, Haghani H, Neysani L (2011) evaluated the effect of a birth ball on labour pain, contractions and duration of the active phase of labour. In this randomised controlled trial, 60 primiparous women aged 18 to 35 years were divided into birth ball and control groups. Pain scores were measured by a visual analogue scale. Mean pain scores in the birth ball group were significantly lower than the mean pain scores in the control group (p<0.05). There were no significant differences between duration of the active phase of labour or the interval between uterine contractions in the two groups (p>0.05). Although the use of a birth ball had no effect on the duration of the active phase of labour, the duration of uterine contractions, or the interval between contractions, this complementary treatment could reduce the intensity of pain during the active phase of labour.

*Related to the effect of acupressure on general health:* Hsieh CH, Su TJ, Fang YW, Chou PH (2011) tested the efficacy of auricular acupressure on weight reduction and changes of waist circumference and waist-to-hip ratio. This study used a randomised design with one control group and one experimental group consisting of Asian young adults with a waist circumference ≥ 80 cm in the females and ≥ 90 cm in the males. At completion of eight weeks of auricular therapy, the total sample size was 55 young adults who ranged in age from 18 to 20 years. Each participant was treated weekly for ear acupressure in 10-minute sessions. Sessions continued for eight weeks wherein the control group received acupressure only while the experimental group received acupressure with the Japanese Magnetic Pearl on the ear acupoints. While both the control and treatment groups showed significant reduction (p ≤ 0.05) to body weight and waist circumference after eight weeks of treatment, only the group treated with Japanese Magnetic Pearls showed decreased waist-to-hip ratio. Thus, auricular acupressure may be a beneficial addition to weight loss programmes for young adults. Auricular acupressure is thus a reasonable option in the treatment of overweight and obesity in young adults.

*Related to effectiveness of acupressure on labour pain:* Kordi M, Firoozi M, Esmaili H (2010) compared the effects of Li-4 acupressure on labour pain in women during first stage of labour. A single blind randomised clinical trial study was carried out on 83 primipara women. Participants were divided into three groups including acupressure group, touch group, and the usual care (control group). The intensity of labour pain was measured using visual analog scale with the rating from 0-100 mm immediately, 30 minutes, and one hour after the intervention during the first stage of labour. Data were analysed using statistical tests of ANOVA, Chi-square, and exact chi-square. Acupressure group had lower labour pain in the active phase of the first stage of labour immediately after intervention than the other groups (p=0.026).

Results showed that Li4 acupressure reduced the intensity of labour pain in the first stage of labour without any side effects to mother and infant. This procedure can be used as a simple, safe and inexpensive method to relieve labour pain.

**Methodology**

It was quantitative experimental research study and adopted true experimental design – pre-test and post-test control group design.

**Symbolic representation of the Design**

\[
\begin{array}{ccc}
E & O1 & X & O2 \\
C & O3 & - & O4 \\
\end{array}
\]

E: Experimental group; C: Control group; X: Intervention (Acupressure): No treatment; O1: Assessment of pain before intervention in experimental group; O3: Assessment of pain before contraction; O2: Assessment of pain 30 minutes after intervention in experimental group; O4: Assessment of pain 30 minutes after contraction

The independent variable selected was intervention (acupressure). The dependent variable of the study was labour pain expressed by primi mothers. The study was undertaken at Swami Dayanand Hospital, Shahdara, Delhi on a total of 60 primi mothers - 30 each in experimental and control groups admitted to labour room.

**Sampling Technique:** Simple random sampling through lottery method was adopted.

Permission was taken from Jamia Hamdard Institutional review board. Acupressure training was done from Abha Nature Cure Hospital Training & Research Institute, Kabool Nagar, Shahdara, Delhi from 3 April 2011 to 3 July 2011. The tool for the data collection consisted of four sections.

**Part 1:** Structured interview schedule for assessing...
demographic variable was prepared comprising of 1-7 items of personal data: age, religion, education, occupation, monthly income, age during marriage and any antenatal class attended.

**Part 2:** Obstetrical history proforma consisted of 3 items which includes LMP, EDD, FHS, booked and unbooked cases.

**Part 3:** Labour assessment proforma consisted of 7 items: date and time of onset of labour pain, presentation of foetus, membrane present or not, dilatation of cervix effacement of cervix, duration of contraction and frequency of contraction.

**Part 4:** Numerical pain intensity scale - represented on a line showing 0 to 10 score, where 0 indicated no pain, 1 to 3 indicated mild pain, 4 to 6 indicated moderate pain and 7 to 10 indicated severe pain.

In both experimental and control groups, assessment of mothers was done for cervical dilatation and the contractions. Data was obtained by interview schedule and from the records of the women. Pain level was noted by using numerical pain intensity scale in experimental group during contraction. In experimental group, acupressure was given to primi mother on acupoint Li4 intermittently for a total duration of 30 minutes at the commencement of each contraction and till it stooped. At the end of the intervention numerical rating scale was administered to record pain level.

In the control group, acupressure was not given to the women. Numerical pain intensity scale was administered to note the pain level after 30 minutes of intermittent contractions.

**Data Analysis**

Descriptive and inferential statistic was used and t-test was computed to do the comparison of the groups. Comparison between pre-test and post-test pain score of experimental group and post-test comparison of both groups is shown in Tables 1 and 2.

**Results**

The mean post-test pain score of experimental group was 6.17 and mean pre-test pain score was 6.90 with mean difference of 0.73 and standard deviation of 2.14. The t-value was computed and found to be 3.05, which was more than the t-value of 2.00 at df (29) and 0.05 level of significance. Hence research hypothesis H1 was accepted. Acupressure at point Li4 was effective in reducing pain in experimental group.

In control group, the mean post-test pain score was 8.23 with a mean difference 2.06 and standard deviation of 1.10. The t-value was computed and found to be 2.41, which was more than the t-value of 2.00 at df (58) and 0.05 level of significance. Thus, the difference obtained in the mean post-test pain score was a true difference and not by chance. Hence research hypothesis H2 was accepted. Acupressure at point Li4 was effective in reducing the pain in experimental group.

**Discussion**

The study indicated that the application of acupressure had a positive effect in reducing the labour pain.

These findings were found to be similar to those of Kordi et al (2010) who compared the effect of Li-4 acupressure on labour pain in women during first stage of labour. In their study, acupressure group had lower labour pain in the active phase of the first stage of labour immediately after intervention than the other groups (p=0.026). Li4 acupressure reduced the intensity of labour pain in the first stage of labour.

The findings of the present study were also similar to those by Chung et al (2003) who determined the effect of Li4 and BL67 acupressure on labour pain during the first stage of labour and showed that there was a significant decrease in labour pain in the active first phase of labour (p=0.041) and acupressure was significantly more effective than control (p=0.017).

Our findings were also similar to those by Lissa Borup (2009) who compared the effect of Li4 acupressure.

![Table 1: Pre-test and post-test pain score of experimental group (n=30)](image1.png)

<table>
<thead>
<tr>
<th>Research group</th>
<th>Observation</th>
<th>Mean</th>
<th>MD</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group</td>
<td>Pre-test</td>
<td>6.90</td>
<td>0.73</td>
<td>691</td>
<td>.126</td>
<td>5.81*</td>
</tr>
<tr>
<td>n1 =30</td>
<td>Post-test</td>
<td>6.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.05 level; t (29) = 2.04, p<0.05 level of significance.

![Table 2: Post-test pain score of experimental and control Groups: comparison (n1+ n2= 60)](image2.png)

<table>
<thead>
<tr>
<th>Research group</th>
<th>Observation</th>
<th>Mean</th>
<th>MD</th>
<th>SD</th>
<th>SE</th>
<th>t'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental group</td>
<td>Post-test</td>
<td>6.17</td>
<td>1.93</td>
<td>2.10</td>
<td>284</td>
<td>6.77*</td>
</tr>
<tr>
<td>n1=30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control group</td>
<td>Post-test</td>
<td>8.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n2=30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Significant at 0.05 level; t (58) = 2.00, p<0.05 level of significance.
acupressure with transcutaneous electric nerve stimulation (TENS) and traditional analgesics for pain relief and relaxation during delivery with respect to pain intensity, birth experience, and obstetric outcome. Results showed that use of pharmacological and invasive methods was significantly lower in the acupressure group (acupressure vs. traditional, p<0.001; acupressure vs. TENS, p= 0.031).

Implications

Nursing personnel can be imparted skills in these manoeuvres, which can be recommended for use in practice. The pregnant woman along with her husband also can be educated in the antenatal period by the nurse to prepare them for labour. Students should be educated about various complementary and alternative therapies for pain management in labour.

Limitations

(i) The study was conducted with small number of sample due to shortage of time for data collection; (ii) Pain is a subjective feeling which is uniquely perceived by different individuals at different time; (iii) Pressure applied is not measurable, so its accuracy cannot be checked.

Recommendations

i) A study can be done to assess the effectiveness of other maternity acupressure point for pain management during labour.

ii) A study can be done to assess the effectiveness of other nursing measures such as warm water bath, and labour support for effective pain management during labour.

References


4. Kordi M, Firoozi M, Esmaili H. Effect of Li4 acupressure on labour pain in the first stage of labour in nuliparous women. 2010 Apr 29;16(1): 3-4


Modified Criteria of Incentives for Life Membership

The criteria was revised as follows:

a) Citation may be given instead of Gold Plated Pin.

b) The revised criteria for awarding incentives to TNAI members enrolling Life Members are as follows:

<table>
<thead>
<tr>
<th>Members Enrolled (within a span of 2 years)</th>
<th>Award</th>
<th>Mode of Awarding</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 20 - 50 Life Members</td>
<td>Cash award of Rs. 1,000/- with Certificate</td>
<td>Award will be sent to the recipient</td>
</tr>
<tr>
<td>&gt; 51 - 100 Life Members</td>
<td>Cash award of Rs. 2,000/- with Certificate</td>
<td></td>
</tr>
<tr>
<td>&gt; 101 - 300 Life Members</td>
<td>Cash award of Rs. 2,500/- with Citation</td>
<td></td>
</tr>
<tr>
<td>&gt; 301 - 500 Life Members</td>
<td>Cash award of Rs. 3,000/- with Citation</td>
<td></td>
</tr>
<tr>
<td>&gt; 501 + Life Members</td>
<td>Cash award of Rs. 3,500/- with Citation</td>
<td>TNAI would pay AC-III tier train fare to-and-fro with one day’s boarding / lodging (for the day of receiving the incentive award during the TNAI conference)</td>
</tr>
</tbody>
</table>