

Effectiveness of Shiatsu Massage on First Stage Labour Pain among Parturient Mothers

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Abstract

Childbirth is an experience in a woman's life that holds the power to transform her forever. The objective of the study was to assess the effectiveness of Shiatsu massage upon first stage Labour pain among the parturient mothers. In this pre-test, post-test experimental study, 60 parturient mothers were selected by simple random sampling technique among which 30 were assigned to the control group and 30 mothers to the experimental group. The labour pain level was assessed by the visual pain analogue scale, and foeto maternal parameters using modified WHO partograph before and after intervention for both control and experimental group of parturient mothers. The experimental group was provided with Shiatsu massage on UB30 of the sacro-meridian region for 10 minutes for every two hours along with the routine care and the control group was treated only with the routine care during the labour process. The results showed a significant difference in after therapy pain score, at $p < 0.001$ between the control and experimental group. The foeto maternal parameters like foetal heart rate, uterine contraction and cervical dilatation was stable throughout the labour process. The Shiatsu massage was effective in reducing the level of labour pain perception. The management of labour pain is a primary responsibility of the nurse. Midwives can be empowered to provide Shiatsu massage as non-pharmacological pain management during childbirth.

Key words: Shiatsu massage, Labor pain, First stage labour, Parturient mothers

Labor pain is an unavoidable and unpleasant experience a mother has to undergo during the time of delivery. In 2019, globally 81 percent of births were assisted by skilled health professionals, which generally includes a medical doctor, nurse or midwife (Unicef, 2021). In India (2016), 90 percent of the deliveries are conducted in health facilities but the rate of caesarean delivery increased to 17.2 percent where WHO recommends only 10-15 percent. Caesarean section rates were high especially in Southern states like Telangana at 57.7 percent and Tamil Nadu at 34.1 percent (NHS-2016) (Spoorthy, 2019).

Need for the study: New generation mothers like to make the labour process a memorable event for which pain management is need of the hour. Labour pain can be relieved by various pharmacological, complementary and alternative methods. Pilewska-Kozak et al (2017) revealed that most of the puerperal women are interested in non-pharmacological methods of pain relief. One among the no-pharmacological method is Shiatsu massage. It is a non-invasive procedure, a Japanese form of complementary medicine, means finger pressure. This massage was done along the acupressure energy meridian points. Acupressure points

used for labour pain reduction are LI4, SP6 & UB 30. In India, no literature exists to support the Shiatsu massage for labour pain relief, although it could be practiced easily and safely by midwives. Hence the researcher felt its importance to assess the effectiveness of Shiatsu massage upon first stage labour pain.

Review of Literature

Batool et al (2015) conducted randomised control trials to evaluate the effect of Shiatsu Technique on Labor Induction in Post-Term Pregnancy; 288 women with post-term pregnancy, who referred to consulting clinic at Ali- Ibn- Abi -Talib Hospital, in Zahedan-Iran in 2010-2011 were selected as samples through random tables. Shiatsu technique was conducted on the participants of intervention group on three points by an experienced midwife. The results revealed that 82 women (56.9%) in Shiatsu group had spontaneous initiation of labour, whereas the number of women was only 12 (8.3%) in control group. The study concludes that Shiatsu technique can be used as one of safe complementary methods for post-term pregnancy induction.

Systematic review on relaxation technique for pain management in labour was conducted by Smith et al (2018). Massage, reflexology and other manual methods for pain management in labour were re-

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viewed to assess the effect, safety and acceptability. Cochrane Pregnancy and Childbirth's Trials Register (30 June 2017) was searched and included a total of 14 trials, 10 of these (1055 women) contributed data to meta-analysis. The authors concluded that Massage, warm pack and thermal manual methods may have a role in reducing pain, reducing length of labour and improving women's sense of control and emotional experience of labour. The study pointed to the need for further research to address these outcomes and to examine the effectiveness and efficacy of manual methods for pain management. So, the authors undertook this experimental study.

Objectives

The study had three objectives:

1. To assess and compare the level of labour pain and foeto maternal parameters before and after Shiatsu massage among control and experimental group.
2. To determine the level of satisfaction upon Shiatsu massage among experimental group of parturient mothers.
3. To find out the association between the selected demographic, obstetrical variables and the level of labour pain before and after Shiatsu massage in control and experimental group.

Hypothesis

Ho1: There will be no significant difference between level of pain before and after Shiatsu massage in control and experimental group.

Ho2: There will be no significant association between selected demographic variables, obstetrical variables and level of pain before and after Shiatsu massage in control and experimental group.

Materials and Methods

It was an experimental study using pre-test and post-test design. The study was conducted in Andhra Mahila Sabha Hospital located in suburban Chennai. Sixty parturient mothers were selected by simple random sampling technique among which 30 were assigned to control group and thirty to experimental group. Mothers who were in active phase of first stage of labour with 4 to 10 cm cervical dilatation were included in the study. High risk mothers, mothers with bad obstetrical history, who were not in active phase of first stage of labour, were excluded from the study.

Description of the Tool

The tools were developed after extensive review of literature, and in consultation with the experts. Demographic variable proforma consisted of age, educational status, occupation, type of family and area of residence. Data were collected from mothers through

interview method. Obstetric variable proforma consisted of gravida, parity, gestational age, number of antenatal visits, APGAR score of the baby, gathered from the medical records of mother. Pain and foeto-maternal parameters like cervical dilatation, uterine contraction and FHR were assessed using Visual analogue scale and Modified WHO partograph through interview and observation methods. The validity of the tools was obtained from the experts in the field and reliability of the tool was found using inter rater method.

Ethical considerations: Ethical clearance and approval to conduct the study was obtained from institutional Ethics committee. After getting permission from the hospital authorities, purpose of the study was explained clearly to the participants and informed consent was obtained. Participants, confidentiality was maintained throughout the study and was informed about their voluntary participation; they could withdraw at any time during the study.

Intervention protocol: The researcher was trained for one week on Shiatsu massage therapy and certified before data collection. Protection of human rights was maintained and the data was collected day and night in months of May and June. The labour pain level was assessed by the visual pain analogue scale and foeto maternal parameters using modified WHO partograph before intervention for both control and experimental group of parturient mother.

Shiatsu massage was provided at the cervical dilatation of 4 -10 cm for 10 minutes at UB30 point for Experimental group of parturient mother (Fig 1). Each mother in experimental group received the Shiatsu massage on an average for 20 to 30 minutes. The pain level and foetomaternal parameters were assessed after each intervention and with the cervical dilatation of 4-5 cm, 6-7 cm, 8-10 cm for both groups with the same tools. The level of satisfaction on Shiatsu massage was assessed in the experimental group of parturient mothers using rating scale after delivery.

Results

The data obtained were analysed using descriptive and inferential statistics. Table 1 shows that majority of the parturient mothers were between the

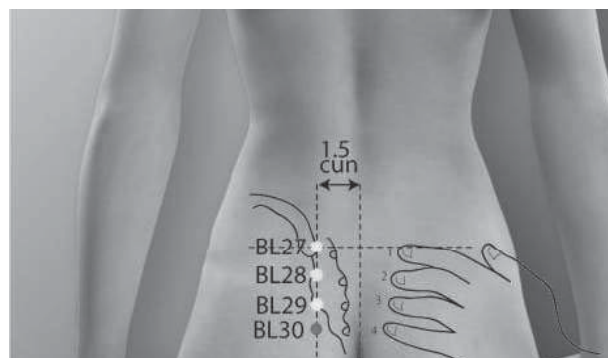


Fig 1: Cervical dilatation effected through Shiatsu massage.

Table 1: Frequency and percentage distribution of demographic variables among control and experimental group (N=60)

Demographic variables	Control group		Experimental group	
	n	p	n	p
<i>Age in years</i>				
20-25	16	53.33	18	60
26- 30	14	46.66	12	40
<i>Educational status</i>				
High School	3	10	2	6.66
Higher secondary	12	40	15	50
Graduate and above	15	50	13	43.33
<i>Type of family</i>				
Nuclear family	22	73.33	26	86.66
Joint family	8	26.66	4	13.33
<i>Area of residence</i>				
Urban	14	46.66	14	46.66
Sub urban	16	53.33	16	53.33
Rural				
<i>Whether received information regarding labour pain relief and Shiatsu massage</i>				
Yes	-	-	-	-
No	30	100	30	100

ages 21 - 25 years (53.33% , 60%), majority of them lived in nuclear family (73.33%, 86.66%), resided in sub urban area (53.33%, 53.33%) and none of them were aware of Shiatsu massage (100%, 100%) in the control and experimental group respectively regarding Shiatsu massage previously.

Obstetrical variables: Majority of the mothers were in the age range 39-40 weeks of gestation (43.33%, 63.33%) respectively during delivery. All of them at-

tended more than four antenatal visits and APGAR score of new born at birth were between 7-10.

Table 2 reveals that majority of parturient mothers had moderate pain (83.33%, 80% respectively in two groups) and significant number of them had moderate pain (80%, 80% respectively) before and after Shiatsu massage in control and experimental group respectively.

There was significant difference in pain score at $p < 0.001$ when compared with control and experimental group of parturient mothers (Table 3). Hence null hypothesis Ho1 was rejected.

In regard to foeto maternal parameters like cervical dilatation, uterine contraction and FHR, there was no significant difference between control and experimental group of parturient mothers before and after therapy. Majority of the women were highly satisfied (86.66%) with Shiatsu massage for labour pain

There was no significant association between demographic variables like age, educational status, type of family, area of residence, and previous information regarding pain relief and level of labour pain before and after Shiatsu massage in the control and experimental group of parturient mothers. Hence null hypothesis Ho2 was retained. There was no significant association between obstetrical variables like gravid, parity, gestational age in weeks, number of antenatal visit, cervical dilatation, duration of first, second and third stage of labour with the level of labour pain after Shiatsu massage in the control group. Hence null hypothesis Ho3 was retained.

Table 2: Frequency and percentage distribution of level of labour pain before and After shiatsu massage (N=60)

Level of Pain	Before therapy		After therapy	
	n	p	n	p
Control Group				
No pain	-	-	-	-
Mild pain	5	16.66	-	-
Moderate pain	25	83.33	26	86.66
Severe pain	-	-	4	13.33
Worst possible pain	-	-	-	-
Experimental Group				
No pain	-	-	-	-
Mild pain	6	20	6	20
Moderate pain	24	80	24	80
Severe pain	-	-	-	-
Worst possible pain	-	-	-	-

Discussion

Parturient mothers (100%, 100%) in the control and experimental group did not receive previous information about Shiatsu massage which shows that they were not familiar with the various alternative pain relief measures. Hence it is the duty of the nurse midwives to explain to the mother about various methods available for pain relief during labour.

Majority of the women in the control and experimental group were between 39-40 weeks of gestation (43.33%, 63.33% respectively), respectively during delivery. This proves that risk of pre-term labour, post-term labour, maternal and foetal complications was reduced with regular antenatal check-ups, and advanced screening methods. The health care workers were playing a vital role in delivering the baby at the right time without leading to post-term labour complications. This view was supported by Caughey

Table 3: Mean and standard deviation of level of pain among control and experimental group (N=60)

Group	Before therapy			After therapy		
	Mean	SD	't'	Mean	SD	't'
Control Group	4	1.17	13.33***	5.8	0.88	42.85***
Experimental Group	4.6	0.81		3.6	0.81	

et al (2007) in their study. It proves that maternal complications were high beyond 40 weeks of gestation.

Majority of the women (100%) in each the control and experimental group attended more than four antenatal visit emphasising that most of the women were aware about the importance of regular antenatal check-up in reducing the complications. It is felt by the researcher that recent advances in the health care services improved the outcome of labour through increased antenatal visits.

Majority of women in the control group had moderate pain (83.3%) before Shiatsu massage and had severe pain (13.33%) after Shiatsu massage. There was significant difference in pain score at $p < 0.001$ when compared with control and experimental group of parturient mothers. Hence null hypothesis H_01 was rejected.

The findings of the study by Batool et al (2015) are coherent with Shiatsu massage for spontaneous initiation of labour; 82 women (56.9%) in Shiatsu group had spontaneous initiation of labour, whereas the number of women was only 12 (8.3%) in control group. Women who had used Shiatsu technique were significantly more likely to have spontaneous labour than those women who did not. Results of the study showed that Shiatsu technique can be used as one of safe complementary methods for post-term pregnancy induction.

Many women need some type of pain-relieving measures to deal with pain during childbirth. The management of labour pain is a primary responsibility of the nurse. Interventions to reduce pain perception are one of the essential aspects of nursing care that must be considered during a labour.

As there was no difference in foeto-maternal parameters like cervical dilatation, uterine contraction and FHR before and after therapy among control and experimental study, this signifies the Shiatsu massage will not have any adverse effect on the foeto-maternal parameters and hence it is safe to practice.

Nursing Implications

Most of the parturient mothers opt to use some form of pain-relieving method to help them cope during labour. Hence it becomes a necessity for the midwives to have adequate knowledge and skill about various

non-pharmacological methods. Though various non-pharmacological methods are available, Shiatsu massage technique is non-invasive, safe and effective and even the spouse and the family members can be taught to do Shiatsu massage. Thus, administrators can train the nurses to perform Shiatsu massage to promote comfort for the mother in labour.

Recommendation

- A comparison study can be conducted in different stages of labour.
- Study on effectiveness of Shiatsu massage on LI4 and SP6 acupressure points can be conducted.
- A comparison can be made between different types of alternative and complementary therapies.

Conclusion

This study shows that Shiatsu massage was effective in reducing the labor pain perception and improving the coping level of parturient mothers. Shiatsu massage is a non-invasive procedure and has no adverse effects on the mother and the foetus. Hence the midwives could be encouraged to use this as a pain relief method during labour.

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