A Quantitative Investigation on the Impact of Massage Therapy in Reducing the Intensity of Pain during Labor in Primi-para admitted in DHQ hospital Muzaffargarh, Southern Punjab, Pakistan

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ABSTRACT

background: Worldwide, women who opt for normal delivery, especially primi-para, must bear intense labor pain. Labor pain is considered as a normal mechanism. Still, its management is imperative to reduce the rate of increased elective cesarean section and other labor-related complications. the uterus and cervix are the primary sources of strong pain signals that go through the thoracic 10-lumbar 1 area (t10-l1) during labor due to the physiological processes involved in the delivery process.

Objective: the objective of the current study was to find out how effleurage massage therapy affected primi-parous' labor pain severity. **Materials and methods**: the design employed was a randomized control trial (RCT). the consenting volunteers were first chosen in the labor of maternity and gynecology department of the district headquarters hospital in Muzaffargarh, Punjab, using non-probability convenient sampling. in the second phase, the cases or control group was chosen using a randomized procedure, sometimes known as the lottery method. the intervention group (n=70) and control group had equal representation. the three sections of the research questionnaire included visual analogue pain scale, WHO partrograph, and sections on demographic and obstetric data.

The university of health sciences in Lahore Pakistan's ethical review committee granted the ethical permission. chi-square and the t-test were used to analyze the data and look into the effect. **Results:** the mean labor pain score of the intervention group (3.40±0.77, 5.71±0.75 and 7.94±0.59) was lower than that of the control group (4.91±0.88, 7.74±0.70 and 9.57±0.50) at the 4-5cm, 6-7cm and 9-10cm dilatation, respectively, following the administration of effleurage massage treatment. **Conclusion**: based on the results, it can be said that effleurage massage therapy significantly lessens the intensity of labor pain during the active first stage of labour in primi-para

Index terms- labor pain, primi-para, effleurage, massage

Introduction

The process of giving birth is referred to as "the labor." In terms of science and biology, it is described as the end of pregnancy. [1] A typical, straightforward vaginal birth is a physiological procedure that shortens the mother's hospital stay and is safer than a cesarean section. [2] However, this physiological

mechanism may be adversely affected by pain and fear during labor. [3] Every woman who gives birth vaginally experiences excruciating agony, which is influenced by physiological, psychological, and societal elements. The intensity and nature of labor pain differs amongst women, and parity has an effect as well.[4] In order to lower the rate of increased elective cesarean sections, labor pain management is essential.[5] The World Health Organization states that a 5% to 15% caesarean rate is optimum; yet, in Pakistan, 25% of newborns are delivered via cesarean section.[6] For half of the women having elective C-sections, avoiding labor pain is the main reason for preference.[7]

The major causes of labor pain increasing from moderate to severe are contractions of the uterus and cervical dilatation. Early labor pain is visceral, and it is challenging to distinguish it from other forms of pain. Contrary to popular belief, lower abdominal discomfort is the only location of significant pain during the late stages of labor. [8]

It is thought that the thoracic, lumbar, and sacral nerves are responsible for transmitting these uncomfortable sensations. The uterus and cervix use the thoracic 10-lumbar 1 area (T10-L1) to transmit visceral pain during labor. [9] That is the reason every woman who gives birth vaginally feels unbearable pain; however, physiological, psychological, and cultural factors may also play a role. Each woman experiences labor pains differently, both in terms of intensity and type, and parity affects labor pains as well. [10]

A non-pharmacological method of treating pain, massage therapy produces relaxants and the hormone endorphin, both of which are useful in reducing pain. A common complementary and alternative medicine (CAM) used to enhance health and wellbeing is massage treatment. [11]

Objective of the Study: To find out if effleurage massage therapy may reduce labor pain intensity in primi-para during the active ist stage of labor.

MATERIALS AND METHODS

The study's design was a randomized control trial (RCT), and its nature was cross-sectional. The investigator selected the DHQ hospital in Muzaffargarh, where the investigation was carried out. The medical and nursing departments at this hospital were well-known for their excellence. The maternity and gynecology department included 260 beds, a surgical room, a neonatal critical care unit, and a labor and delivery room. The target group consisted of all primi-parous women who were admitted to the labor room at DHQ Hospital Muzaffargarh for delivery while in the active first stage of labor. Seventy primi-gravid women with low-risk pregnancies participated in the trial; low-risk pregnancy is described by the WHO as "meaning that there are no active problems.

Inclusion Criteria

A woman who was primi-para, had a single fetus in a cephalic position, intact amniotic membranes, was pregnant at low risk, had a gestational age between 18 and 35, was experiencing spontaneous labor pain with a cervical dilation of 4-5 cm and appropriate uterine dynamics, and had not taken medication from the time of admission to the hospital until the time of randomization was required to be eligible for participation.

Exclusion Criteria

Women who had cognitive or psychiatric issues, any medical or obstetric risk factors, complicated or obstructed labor, or intrauterine fetal mortality were excluded.

Two Stage Sampling

Every primi-parous woman at the hospital labor ward who fulfilled the study's inclusion requirements was extended an invitation to take part. Non-probability convenient sampling was employed in the first phase to choose study participants who were willing to take participate. Using the randomization procedure (lottery method), participants were divided into two groups for the second stage: the control group and the cases.

Sample Size

The following formula was used to determine the sample size while maintaining an 80% research power and a 5% significance level.

$$n = \frac{\left(Z_{1-\beta} + Z_{1-\frac{\alpha}{2}}\right)^2 (\sigma_1^2 + \sigma_2^2)}{(\mu_1 - \mu_2)}$$

Data Collection Tool

There were three components to it. In the first section, information about demographics and obstetrics was covered. In the second section, a partrograph provided by the World Health Organization was examined. This tool measures the intensity of labor by taking into account factors like maternal identification, fetal heart rate, color of amniotic fluid, fetal skull molding, cervical dilatation, fetal descent, uterine contractions, whether oxytocin was given or not, maternal vital signs, and urine output. In the third section, a visual analogue pain scale was used to assess pain and assign a score between 0 and 10. It was created in 1921 by Hayes and Patterson [12]. A single handwritten mark was placed at one point along a 10-cm line, representing a continuum between the two ends of the scale: "no pain" on the left end (0 cm) and "worst pain" on the right (10 cm). The scores were based on self-reported measures of symptoms. [13]

The visual analogue scale (VAS) showed a good level of reliability when measuring acute pain, according to intraclass correlation coefficients (ICC). Ninety percent of the pain scores could be repeated within a millimeter. According to these findings, the VAS was deemed reliable enough to measure acute pain. [14]

RESULTS:

Table 4.1: Background Characteristics of the Respondents

Background Characteristics		Intervention Group	Control Group
Age (Years)	18-22	21 (60%)	17 (49%)
	23-27	14 (40%)	18 (51%)
Residence	Rural	12 (34.3%)	13 (37.1%)
	Urban	23 (65.7%)	22 (62.9%)
Educational Status	Illiterate	11 (31.4%)	8 (22.86%)
	Primary	15 (42.8%)	21 (60%)
	Middle	4 (11.42%)	3 (8.57%)
	Higher	5 (14.38)	3 (8.57%)
Occupation Status	Working	2 (5.7%)	1 (2.9%)
	Housewives	33 (94.3%)	34 (97.1%)
Income Status	Low	18 (51.4%)	15 (42.9%)
	Average	16 (45.7%)	17 (48.6%)
	High	1 (2.9%)	3(8.5%)

Table 4.2: Obstetric Information

Obstetric Information		Interventional Group (n=35)	Control Group (n=35)	P-Value
Gestational age		37.74 ± 0.74	38.34 ± 0.76	0.463
Onset of labor pain	<6 Hours	17 (48.6%)	29 (82.9%)	0.003*
	> 6 Hours	18 (51.4%)	6 (17.1%)	
Membrane status at the onset of the active phase	Intact	32(91.4%)	27(77.1%)	0.101
	Rupture	3(8.6%)	8(22.9%)	
Timing of membranes Ruptures in relation to cervical dilatation		7.82 ± 1.24	8.20 ± 1.47	0.246

Effect of Effleurage Massage on Intensity of Labour Pain

Independent sample t test was applied to compare the labour pain level in control and interventional group at different cervical dilatations.

Table 4.3: Comparison of Pain Intensity at Different Cervical Dilatations

Pain Score	Intervention Group	Control Group	p-value
At 4-5 cm dilatation	3.40 ± 0.77	4.91 ± 0.88	< 0.001*
At 6-7 cm dilatation	5.71 ± 0.75	7.74 ± 0.70	< 0.001*
At 8-9 cm dilatation	7.94 ± 0.59	9.57 ± 0.50	< 0.001*

*Significant

DISCUSSIONS

Massage therapy with effleurage and pain threshold at 4-5 cm dilation

A recent randomized controlled trial found that giving laboring women effleurage massage therapy at 4 to 5 cm cervical dilation during the initial stage of labor considerably reduced the intensity of their discomfort. The mean pain score at 4-5 cm cervical dilation for both the intervention and control groups revealed a statistically significant difference in mean pain score. The research also shows that massage therapy can effectively lower labor discomfort when given to women who are in the early stages of labor. Chang et al. found that there was a 16 mm decrease in labor pain intensity on the 100 mm visual analogue scale (VAS) at 3-5 cervical dilation in their study.

Massage therapy with effleurage and pain threshold at 6-7 cm dilation

The current study's findings demonstrated that women receiving massage therapy had considerably lower mean pain scores at various dilatation lengths than did the women in the control group. The intervention group's mean pain score at 6-7 cm of dilation was 5.71±0.75, whereas the control group reported 7.74±0.70. Our findings and those of a few other studies in this field are in agreement. Massage reduces the amount of pain and length of delivery, according to research on the effects of massage on labor pain and childbirth duration.[17] The results also corroborate those of another study, which found that the group receiving massage therapy had reduced pain.

Effleurage massage therapy with a 6-7 cm dilatation pain threshold

The results of this study showed that compared to the women in the control group, massage treatment recipients had significantly lower mean pain scores at different dilatation lengths. At 6-7 cm of dilation, the intervention group's mean pain score was 5.71±0.75, while the control group reported 7.74±0.70. Our results are consistent with those of a few other research conducted in this sector. Research on massage's effects on labor pain and the length of childbirth shows that it shortens both the pain and the duration

of delivery.[17] Additionally, the outcomes support a different study's findings that the group undergoing massage therapy experienced less pain.

Massage therapy with effleurage and pain threshold at 8–9 cm dilation

The results of the current study seemed to indicate a statistically significant difference in the severity of labor pain, favoring the massage intervention because the experimental group's pain score dramatically decreased as compared to the control group. the study wherein labor pain was significantly reduced in the initial stage when back massages were employed.[19] Another study found that giving women support throughout labor through therapies like massage and music creates a calm atmosphere and enhances their experience of giving birth.[20]

Conclusion

The results of this study show that effleurage massage therapy can successfully lessen the intensity of labor pain in primiparas during the active phase of labor. Massage is an easily implemented, reasonably priced technique that has the potential to improve patient satisfaction and lower stress and difficulties for laboring women.

Additionally, among primiparous moms, massage has no negative side effects and increases the rate of spontaneous normal delivery as opposed to cesarean delivery. Therefore, massage can be regarded as one of the complementary techniques to lessen pain in women throughout various stages of labor due to its lower cost and adverse effects.

The results of the study provide a foundation for understanding how effleurage massage therapy can lessen labor discomfort. Given the paucity of knowledge on common massage techniques for easing labor pain in Pakistan, this study highlights the necessity for large-scale, nationwide follow-up research in this field. More investigation is needed to explore additional aspects that can effect labour pain, such as age, culture, prior labour pain experience, and psychological disorders, in order to reveal more considerable pain reductions.

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