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Effect of lamaze breathing and psychosomatic relaxation techniques on labour pains and its outcome

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Abstract---Background: Labour is an emotional experience and involves both physiological and psychological mechanisms. Even if a woman is thrilled about being pregnant, a new baby adds emotional stress to life. Childbirth has always been associated with pain. The study's objectives are to assess the level of pain during labour and the effectiveness of Lamaze Breathing relaxation techniques on the outcome of labour. Methods: The quantitative research approach was used by implementing the Post-test control group research design. About 50 samples were selected by executing the purposive sampling technique. Independent variables were the Lamaze breathing relaxation techniques, while dependent variables were the labour pains and Outcome of Labour. Data from the participants were obtained by administering the observational techniques. A visual descriptor scale was used to assess the level of pain. Result: About 72% of the women in the control group had moderate labor pain, while 44% of the women in the experimental group had moderate pain. About 44% of them had severe labour pain, and the p values were 0.032, which indicates a significant effect of Lamaze breathing relaxation techniques in reducing the labour pain. Regarding the outcome of labour, 80% of the women in the study group completed labour in 12-14 hours since the p-value corresponding to the duration of labour is less than 0.05 in the experimental group. Conclusion: It is concluded that Lamaze breathing techniques have a significant effect in reducing the pain and improving the positive outcome of labour.

Keywords---lamaze breathing, psychosomatic relaxation techniques, labor pain, labor outcome, parturient women.

Introduction

Pregnancy is a lovely, exciting journey in every woman's life, and she is sacred with the imaginative nurturing power to build a bridge to the future. Childbirth is a process, and it is a cherished memory in every married couple's life.¹ When a woman delivers, she is not just delivering a baby but giving birth to a parent; becoming a parent is one of the paramount events in her lifecycle. However, a dull or sharp pain is an immense uncomfortable sensation in our body that can cause annoying feelings and devastating outcomes in labour. This pain is influenced by emotional and physical factors such as lack of awareness regarding labour, lack of skills in controlling the pain, and inexperience.² The women must know the various alternative techniques required to be adapted in labour to experience the healthy childbirth process.³

The primi parturient women are scared of labour due to a lack of information regarding the childbirth process, its duration, bearing down techniques, and the pain; therefore, education to these women play an imperative role in preparing themselves for the labor process, diverting their mind from this pain.⁴ According to the Indian culture, people do not talk about childbirth in many regions, and many women are aware only that the labor process causes massive pain. It is challenging for primi parturient women to regulate and manage the pain during labour. Usually, women scream with the labour pains and are exhausted much earlier in using their energy and power to push the fetus when it is unnecessary.⁵ That results in early rupture of membranes, prolonged labor, and other obstetrical complications for mother and baby; finally, the birth causes a bitter experience for the mother and the entire family. Thus the management of women in the first stage by the health care professionals is essential to enhance the better fetal and maternal outcomes of the labour. ⁶

An obstetrician in the 1950s developed the Lamaze relaxation breathing technique. The majority of the birth educators take a series of sessions for the antenatal women from conception to birth to extend the awareness to these women regarding the birthing process and actual things that need to be performed during labour.⁷ The Lamaze mainly focuses on patterned breathing techniques, including muscle relaxation, patterned breathing, and diverting focus from pain.⁸ Muscle relaxation and patterned breathing techniques aid the parturient women in relaxing voluntary muscles to a considerable amount. And also, these techniques shift the women's focus from negative emotion to breathing movements that help the mother keep herself calm in the process of childbirth and augment their buoyancy levels to give birth to a child.⁹

Lamaze techniques have been profoundly proven to assist the parturient women in comprehending how to cope with the labor pains that help improve the mother's comfort and expect a positive outcome of the labor.¹⁰ Most researchers have educated pregnant women using Lamaze breathing relaxation techniques.¹¹ However, current researchers have proposed using Lamaze relaxation breathing

techniques in an outlook to provide comfort to the parturient women and evaluate the outcome of the labor

Objectives of the study

1. To assess the level of pain during 1st stage of labour
2. To assess the effectiveness of Lamaze patterned breathing relaxation techniques on labor pain during labor.
3. To assess the effectiveness of Lamaze patterned breathing relaxation techniques on the outcome of labour.

Methodology

The current study used a quantitative research approach by executing a post-test control group research design. The study was conducted in labour rooms of selected hospitals. The samples were then parturient women who were available in the labor room. The total sample size was 50 parturient women, divided into two groups; 25 were in control, and 25 were in the experimental group, and there were selected by adopting the purposive sampling technique after considering inclusion criteria and exclusion criteria. Informed consent was obtained from both groups. The independent variables are Lamaze breathing relaxation techniques, while the dependent variables are labour pains and the outcome of labour.

Immediately after the completion of the above procedure, the level Labour pain was assessed using the Visual Analogue Scale (VAS); subsequently, the outcome of the labor was assessed. The tool was divided into three sections. Section -A consisted of the demographic data, section -B had the items of VAS to approximate the level of pain, and section -C consisted of bearing down efforts, duration of the labor, mode of the delivery, and placenta expulsion time to understand the outcome of labour. Reliability was assessed by using the inter-rater method, and the r value for the above tool items is 0.87. A pilot study was conducted to develop an insight into the actual process of sample data analysis and to check the feasibility and anticipate challenges in the main study. The data were analyzed by using descriptive and inferential statistics.

Lamaze breathing relaxation techniques were taught to the experimental group for 10 minutes. The procedure was taught to them as follows; breathing and relaxation techniques were divided into three phases according to intensity and duration of pains and contractions, a) Organize breath: which includes deep inhalation from the nose, take a pause for 5seconds and exhale from the mouth and b) shallow and rapid breath: instructed women to inhale by mouth and exhale from the mouth and as soon as intensity and duration of pain increases in the active phase of labour, the third phase of Lamaze starts c) Deep inhalation from mouth and exhalation from the mouth by adopting techniques of bearing down efforts. The control group in the present study were provided the normal routine care according to hospital policy.

Table 1: Distribution of the samples based on their personal characteristics
n=25, 25

Demographic variable		Experimental group		Control group		p-value
		Freq	%	Freq	%	
Age	18- 25 years	16	64%	12	48%	0.526
	26-30 years	7	28%	11	44%	
	30-35 years	2	8%	2	8%	
	Above 35 years	0	0%	0	0%	
Religion	Hindu	10	40%	12	48%	0.642
	Muslim	8	32%	7	28%	
	Christian	5	20%	6	24%	
	Other	2	8%	0	0%	
Education	Profession or Honours	3	12%	0	0%	0.616
	Graduate or Postgraduate	6	24%	8	32%	
	Intermediate or Post High School diploma	8	32%	8	32%	
	High School certificate	3	12%	5	20%	
	Middle School certificate	2	8%	2	8%	
	Primary School Certificate	3	12%	2	8%	
Occupation	Profession	1	4%	0	0%	0.500
	Semi Profession	4	16%	4	16%	
	Clerical, Shop Owner	2	8%	3	12%	
	Skilled Owner	0	0%	3	12%	
	Semi-skilled worker	3	12%	3	12%	
	Unskilled Worker	4	16%	5	20%	
	Unemployed	11	44%	6	24%	
Monthly income of family	>Rs. 41430	1	4%	0	0%	0.002
	Rs. 20715-41429	10	40%	4	16%	
	Rs. 15536-20714	6	24%	3	12%	
	Rs. 10357—15535	2	8%	3	12%	
	Rs. 6214-10356	6	24%	3	12%	
	Rs. 2092-6213	0	0%	5	20%	
	Rs. <2091	0	0%	7	28%	

Table 2 : Distribution of the samples based on their Obstetrical characteristics

Demographic variable		Experimental group		Control group		p-value
		Freq	%	Freq	%	
Gestational age	28 – 32 weeks	0	0%	0	0%	1.000
	33- 36 weeks	0	0%	0	0%	
	37 – 40 weeks	25	100%	25	100%	
Antenatal check - ups	Regular	25	100%	25	100%	1.000
	Irregular	0	0%	0	0%	
	Nil	0	0%	0	0%	
Phase of labour	Latent phase	20	80%	19	76%	1.000

	Active phase	5	20%	6	24%	
True onset of labour pains	<2 hours	19	76%	6	24%	0.001
	>2 hours	6	24%	19	76%	

Table 3: Assessment of the level of pain during labour
n=25, 25

Labour Pain	Experimental group		Control group	
	Freq	%	Freq	%
No pain	0	0%	0	0%
Mild	0	0%	0	0%
Moderate	18	72%	11	44%
Severe	5	20%	11	44%
Very severe	2	8%	3	12%
Worst possible	0	0%	0	0%

Table 4: Effectiveness Lamaze Patterned Breathing relaxation techniques on labour pain during labour
n=25, 25

	Mean	SD	t	Df	p-value
Experimental	5.6	1.08	1.89	48	0.032
Control	6.2	1.16			

The researcher has applied paired t-test to check the significance between the two groups after Lamaze patterned breathing techniques on pain during labour. The average labour pain score among experimental and control groups was 5.6 and 6.2, respectively, with a t-value of 1.89 at 48 degrees of freedom. The corresponding p-value was smaller than 0.05, which means Lamaze patterned breathing relaxation techniques have a significant impact on diverting the women's focus from pain.

Table 5: Effect of Lamaze Patterned Breathing relaxation techniques on outcome of labor
n=25, 25

Outcome of Labour		Experimental group		Control group		p-value
		Freq	%	Freq	%	
Bearing down efforts	Adequate	17	68.0%	12	48.0%	0.359
	Not adequate	5	20.0%	10	40.0%	
	Mother feels tired	3	12.0%	3	12.0%	
Duration of labour	12 - 14 hours	20	80.0%	10	40.0%	0.007
	14 - 16 hours	3	12.0%	12	48.0%	
	>16 hours	2	8.0%	3	12.0%	
Mode of delivery	Normal Vaginal Delivery with episiotomy	20	80.0%	15	60.0%	0.113
	Vaginal Delivery without episiotomy	0	0.0%	0	0.0%	

	Vaginal delivery by an application of instruments	0	0.0%	4	16.0%	
	Lower Segment Caesarean Section	5	20.0%	6	24.0%	
Duration of placental expulsion	5-10 minutes	8	32.0%	4	16.0%	0.371
	10-15 minutes	2	8.0%	4	16.0%	
	More than 15 minutes	15	60.0%	17	68.0%	

Discussion

Scientific advancements include using alternative therapies in labour to minimize the discomforts in pregnancy and labour.¹² However, pregnant women are perpetually concerned about their forthcoming childbirth and related disquiets and associated complications.¹³ It is one of the reasons to raise the number of caesarean section cases across India. In clinical practice, the researcher encountered that the primi mothers were not informed or not provided an adequate knowledge and explanation about the process and management of the first stage of labor.¹⁴ When the women are in the 1st stage of labour, much in the early period, the majority of them start the bearing down efforts before they enter the active phase of labour, which leads to over exertion and tiredness in women, can't perform the same when there is the actual requirement.¹⁵ This is also one reason for increasing the number of caesarean section deliveries.^{16,17,18}

In the current study, about 72% of the women had moderate labour pain in the experimental group; remaining had severe labour pains. In contrast, 44% of the women had moderate labour pain in the control group.^A A similar study on the impact of breathing exercises on pain relief during childbirth by executing a quasi-experimental research design.¹⁸ VAS and three types of breathing exercises were administered to shift the focus of women from pain. In their experimental group, the pain level was significantly lower in the slow deep breathing type (2.82 ± 0.60) than in the other two types.¹⁹ The study concluded that pain levels in both groups increased during the labor process but less in the study group.

In the present study, the researcher has applied a two-sample t-test to check the effectiveness of Lamaze patterned breathing relaxation techniques on labour pain during labour to control the labour pain in parturient women. Average labour pain score among experimental and control groups are 5.6 and 6.2, respectively, with a t-value of 1.89 at 48 degrees of freedom. A supporting study was conducted to assess the effectiveness of relaxation breathing techniques for control of labour pains in 1st and 2nd stages of labour.²⁰ Investigators were instructed to perform breathing techniques while the control group was given routine care. Pain perception was significantly less in the experimental group compositely with the control group. The control group's mean values and experimental were 7.55 and 4.55, respectively. The statistical t value was 3.36, and the p-value was less than 0.001 had a great significant effect on controlling the labor pains and a positive experience by mother²¹

In the experimental group, about 80% of the women had delivered their baby within 12-14 hours, while 60% of women in the control group completed their labour in 14-16 and more. Another similar study results display no significant

effect in reducing the duration of 1st stage of labour and labour pains after administration of Lamaze breathing techniques. ²¹

Recommendations

A comparative study can be conducted using different Lamaze techniques in different settings.

Conclusion

The current study concludes that the use of Lamaze patterned breathing relaxation techniques are found to be effective in improving the overall well-being of pregnant and parturient mothers, aids in alleviating their fears and anxieties, and assisting them in becoming more confident about their childbirth feeling with more comfort.

Ethical clearance

This study was approved by the Institutional Research Committee, Symbiosis College of Nursing, Symbiosis International Deemed University, Pune, and hospital authorities. Informed consent was obtained from the participants

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Conflict of interest: Nil

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