Original Article

Effectiveness of selected paced breathing on anxiety level and pain perception during first stage of labor among parturient in Pune

Abstract:

Introduction: Pain & anxiety is an important problem that pregnant women have to cope with during labor. When they are unable to control their pain they develop a negative idea and dissatisfaction with labor. Positive perception of childbirth experience can decrease pain, anxiety and depression in first –time mothers.

Objectives: The study was conducted to assess the intensity of pain experienced by the parturient in first stage of labor before and after implementation of selected paced breathing, to assess the level of anxiety experienced by the parturient during first stage of labor before and after selected paced breathing and also to evaluate the effectiveness of selected paced breathing on pain perception and anxiety level during first stage of labor.

Methods and Materials: Quasi –experimental research approach with pretest-posttest control group design was used for this study. Non-probability convenience sampling technique was used to select 60 (30 in each group) parturient in labour as sample from selected private and Govt hospitals, Pune. Data collection was accomplished by interview technique by using tool as Section-I-(baseline data), Section –II Observation checklist of breathing technique, Section –III--(0-10) NPIS, Section IV-State –Trait Anxiety Inventory. Pretest was conducted followed by administration of selected paced breathing in the form of cleansing and focal breathing to the experimental group only. Two posttests were conducted after 2 hours & 4 hours. Data was analyzed by using descriptive and inferential statistics.

Results: The average pain score experienced by parturient in control group were 7.43, 8.1 and 8.6 at pretest, after 2 hour and after 4 hours and in experimental group it was 8.03, 7.6 and 7.06 respectively. The average anxiety score in pretest, after 2 hours and after 4 hours are 68.33, 52.33 & 48.33 respectively in experimental group and 59.03, 65.87 & 69.53 respectively in control group. The pain perception and anxiety level remains in severe and very severe level in all the three tests in control group whereas these were significantly reduced to moderate category after the pretest in case of experimental group.

Conclusion: Selected paced breathing was found to be effective to ease the anxiety and pain perception of the parturient during first stage of labour.

Key Words: Effectiveness, selected paced breathing, anxiety level, pain perception first stage of labor, parturient, Pune.

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Introduction

Pain & anxiety is an important problem that pregnant women have to cope with during labor. When they are unable to control their pain they develop a negative idea and dissatisfaction with labor. Positive perception of childbirth experience can decrease pain, anxiety and depression in first –time mothers.[1-3]

Pregnant women who have inexperienced giving birth and who have misconceptions or misunderstanding of labor tend to have more fear and anxiety which can be accumulated since the pregnancy starts. As labor is approaching, their worry and fear can increase, making them enter the fear – tension pain cycle. Thus, it can be seen that pain can be caused by both physical and mental factors, which is difficult to pinpoint. In brief, pain is an important problem that pregnant women have to cope with during labor.[4]

When they are in pain and they are unable to control their pain they develop a negative idea and dissatisfaction with labor. This is a misinterpretation of the labor and labor pain which affects

their behavior as first- time mothers. It can also affect the relationship and interaction between the mothers and their newborns. On the other hand, positive perception of childbirth experience can decrease anxiety and depression in first –time mothers. Thus, an important role nurses have to play is to relieve pain during labor and enable pregnant women to cope with labor pain and delivery appropriately. The ways to reduce pain include pharmacologic and non-pharmacologic pain management.[5]

So the present study was undertaken to assess the intensity of pain experienced by the parturient in first stage of labor before and after implementation of selected paced breathing to assess the level of anxiety experienced by the parturient during first stage of labor before and after selected paced breathing and also to evaluate the effectiveness of selected paced breathing on pain perception and anxiety level during first stage of labor.

Hypothesis

H1: There is significant difference in pain perception & level of anxiety before and after selected paced breathing during first stage of labor among the parturient.

Conceptual framework

The conceptual framework adopted for the study was General System Model.

• Feedback is not included in the study
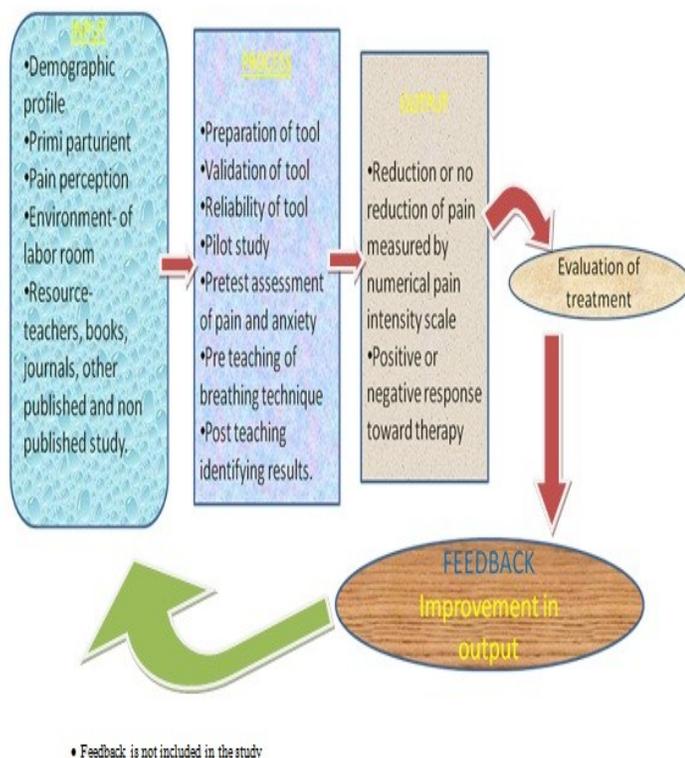
Methodology

The quasi –experimental research approach with pretest-posttest control group design was used for this study. Non-probability convenience sampling technique was used select 60 (30 in each group) parturient in labour as sample. The study was conducted at Bharati Hospital & Research Centre, Bharati Ayurveda Hospital and Sonawane Maternity Home of Pune City. Data collection was accomplished by interview technique by using tool which consisted of four sections: Section-I-baseline data of parturient, Section –II- Observation checklist of breathing technique, Section –III--assessment of intensity of pain by (0-10) NPIS, Section IV- assessment of level of anxiety by State –Trait Anxiety Inventory. Validity and Reliability of the NPIS and STAI was established by inter-observer reliability. Pretest was conducted to assess the pain perception and anxiety level in both the groups followed by administration of selected paced breathing in the form of cleansing and focal breathing to the experimental group only. Two posttests were conducted i.e. at 2 hours & 4 hours after. Data gathered was analyzed by using descriptive and inferential statistics. Based on the analysis interpretations were made.

Result

Table 1: Frequency and percentage distribution of the parturient according to selected personal characteristics in both the groups (n=30+30)

SI no.	Characteristics	Group I Control group		Group II Experimental group	
		f	%	f	%
	Age (years)				
01	1.1) 18-20 yrs	10	33.33	12	40
	1.2) 21-25 yrs	18	60	15	50
	1.3) 26-30 yrs	2	6.66	3	10
	1.4) 30 yrs and above	---	---	---	---
	Education				
02	2.1) Illiterate	2	6.66	3	10
	2.2) Primary	6	20	3	10
	2.3) Secondary	10	33.3	14	46.66
	2.4) Higher secondary	6	26.66	6	20
	2.5) graduation	3	10	3	10
	2.6) any other	3	10	1	3.33
	Type of family				
03	3.1) Nuclear	21	70	19	63.33
	3.2) Joint	9	30	11	36.66
	Gravida				
04	4.1) Primigravida	30	100	30	100
	Occupation				
05	5.1) House wife	23	76.66	26	86.6
	5.2) Working	7	23.3	4	13.3

Data presented in Table 1 shows that in control group majority of the samples (60%) belongs to the age group of 21-25 years and in experimental group 50% are belongs to the age group of 21-25 years. In control group 33.3% were having secondary education and in experimental group 46.6% were having secondary education. Maximum samples in experimental group [86.6%] and control group [76.6%] were house wives. 70% of the samples in control group belong to nuclear family and in experimental group 63.3% belongs to nuclear family. All the parturient in both the group were primigravida.
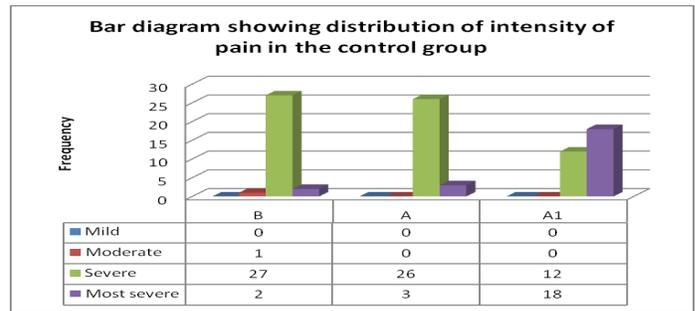
Table 2: Percentage distribution of the parturient as per breathing technique performed before, during and after contraction in experimental group   n=60

Sr. no.	Characteristics	%
i. Breathing technique performed before contraction (cleansing breathing)		
1	Takes a deep breath by the nose	93
2	Blows it out through the mouth	79.66
3	Repeats the whole procedure in rhythmic manner	67.66
4	Takes a breath before and after contraction	86
ii. Breathing technique performed during contraction (focal breathing)		
1	Breath in for a count of 4 sec. or as per convenient.	91.66
2	Able to hold the breath for a moment between in-spiration and expiration.	62
3	Slowly breaths out for double the count.	86.33
4	Does during each contraction	93.33
5	Able to concentrate on her breath	45
Iii. Breathing technique performed after contraction (cleansing breath)		
1	Takes a deep breath by the nose	96.33
2	Blows it out through the mouth	91
3	Repeats the whole procedure in rhythmic manner	71
4	Takes the breath before and after contraction	95.33

The researcher had used three types of breathing to be performed by the parturient before, during and after contraction namely cleansing breathing, focal breathing and again cleansing breathing. The data presented in Table 2 represents the percentage distribution of the parturient as per breathing technique performed before, during and after contraction in experimental group. The data further shows that while performing cleansing breath before contraction maximum of the samples (93%) were able to take a deep breath by nose, 79.66% were able to blow out through the mouth, 67.77% were able to repeat the procedure in a rhythmic manner and 86% of the parturient were able to take a breath before and after contraction. While performing the focal breathing during contraction 91.66% were able to breathe in for a count of 4 secs, 62% were able to hold the breath for a moment between inspiration and expiration, 86.33% were able to slowly breaths out for double the count., 93.33% were able to do during each contraction and 45% only could able to concentrate on her breath. While performing the
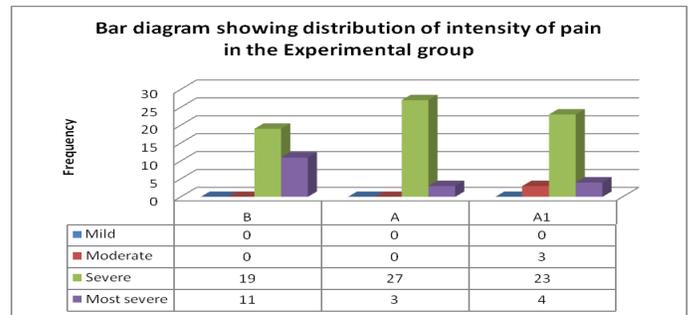
cleansing breath again after the contraction it is seen from the data presented in above table that 96.33% were able to take a deep breath by nose, 91% were able to blow out through the mouth, 71% were able to repeat the procedure in a rhythmic manner and 95.33% of the parturient were able to take a breath before and after contraction.

Figure 1: Bar diagram showing the frequency distribution of the parturient in control group in pre-test, post-test 1 & 2 as per their pain perception

Bar diagram showing distribution of intensity of pain in the control group

	B	A	A1
Mild	0	0	0
Moderate	1	0	0
Severe	27	26	12
Most severe	2	3	18

From the data presented in Figure 1 it is evident that the control group parturient experienced severe and very severe pain in all the test i.e. pre-test, post-test 1 (after 2 hours) & post-test 2 (after 4 hours)

Figure 2: Bar diagram showing the frequency distribution of the parturient in experimental group in pretest, posttest 1 & 2 as per their pain perception

Bar diagram showing distribution of intensity of pain in the Experimental group

	B	A	A1
Mild	0	0	0
Moderate	0	0	3
Severe	19	27	23
Most severe	11	3	4

From the data presented in Figure 2 it is evident that the experimental group parturient experienced severe and very severe pain in pretest but in posttest 1 (after 2 hours) & posttest 2 (after 4 hours) very few of the parturient experienced very severe pain.

Table 3: Comparison of intensity of pain experienced by both Control & experimental groups   n=60
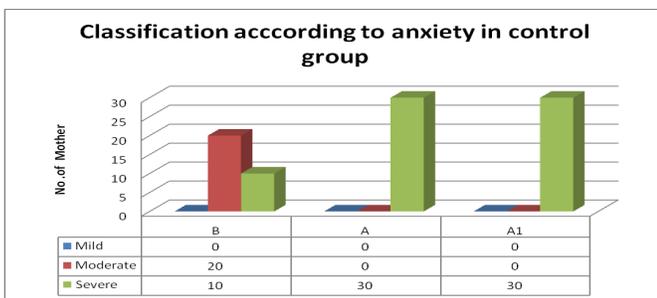
Group	Control		Experimental	
	Average	Variance	Average	Variance
B (pre test)	7.43	1.01	8.033	0.861
A (post test after 2 hours)	8.10	3.33	7.600	0.731
A1 ((post test after 4 hours))	8.60	0.39	7.067	1.444

The data in Table 3 reveals the comparison of intensity of pain between control & experimental group. It is computed by using "t" test and the resulting "p" values were in pretest (0.0004), after 2 hrs (0.04) & after 4 hrs (0.001) which are less than 0.05. So, the H0 was rejected, i.e. there is significant difference in the intensity of pain at all three stages and is more seen in control group than the experimental group.

Assessment of the pain intensity experienced by control group before, after 2 hours and after 4 hours of teaching is done by ANOVA test and the resulting "p" value (0.002) is less than 0.05, so the investigator rejected H0 and accept H1, i.e. there is significant increase in the intensity of pain in the control group.

Assessment of the pain intensity experienced by experimental group before, after 2 hours and after 4 hours of teaching is also done by ANOVA test and the resulting "p" value (0.001) is less than 0.05, so the H0 is rejected and H1 is accepted. So it can be said that as the parturient practiced selected paced breathing during the first stage, there is significant reduction in the intensity of pain in the experimental group.

Figure 3: Bar diagram showing the frequency distribution of the parturient in experimental group in pretest, posttest 1 & 2 as per their anxiety level

Classification acccording to anxiety in control group

	B	A	A1
Mild	0	0	0
Moderate	20	0	0
Severe	10	30	30

From the data presented in Figure 3 it is evident that the control group parturient experienced moderate & severe anxiety in pretest. In posttest 1 (after 2 hours) & posttest 2 (after 4 hours) all of the parturient experienced severe anxiety.

Figure 4: Bar diagram showing the frequency distribution of the parturient in experimental group in pretest, posttest 1 & 2 as per their anxiety level

Classification acccording to anxiety in experimental group

	B	A	A1
Mild	0	0	0
Moderate	2	29	30
Severe	28	1	0
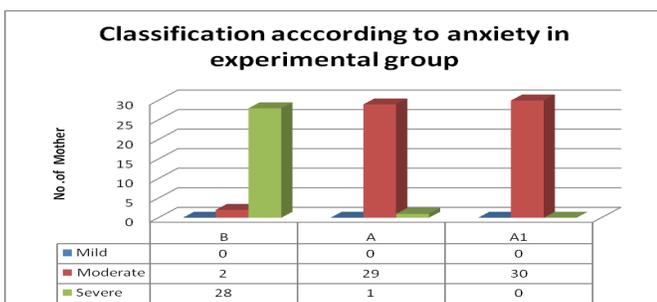
From the data presented in Figure 4 it is evident that the experimental group almost all the parturient (28) experienced severe anxiety in pretest but in posttest 1 (after 2 hours) & posttest 2 (after 4 hours) they experienced moderate level of anxiety.

Table 4: Comparison of the level of anxiety experienced by both Control & experimental groups   n=60

Group	Control		Experimental	
	Average	Variance	Average	Variance
B	59.03	11.30	68.33	18.09
A	65.87	7.45	52.33	12.76
A1	69.53	11.72	48.33	6.289

The data presented in Table 4 depicted the comparison of the level of anxiety between control & experimental group. The "t" test is being computed and the resulting "p" values for before (0.0003), after 2 hrs (0.0001) & after 4 hrs (0.0001) which are less than 0.05, so the investigator rejected H0, i.e. there is significant difference in the level of anxiety at all three stages and is more seen in control group than the experimental group.

Difference of Anxiety level of the control group in pre test and posttest is calculated using ANOVA test and the result indicates that the obtained "p" value (0.0007) is less than 0.05, therefore it can be said that there is significant increase in the level of anxiety in the control group.

Same way the difference of Anxiety level of the experimental group in pre test and posttest is also calculated using ANOVA test and the result indicates that the "p" value obtained (0.0007) is less than 0.05. Hence there is significant reduction in the level of anxiety in the experimental group.

Discussion

This study was a quasi-experimental research designed to determine the effect of selected paced breathing on pain perception and anxiety level during first stage of labor in primigravida mothers. In this section the major finding of the present study has been discussed with reference to the results obtained by others investigators. The study done by various investigators suggested that different methods of childbirth preparation place varying emphasis on the use of breathing patterns as coping tools for the laboring woman. While the concept of individuality is an overriding one, all breathing techniques taught in classes should be based on the scientific literature and should include room for each couple's uniqueness.[7-9]

The maintenance of relaxation, proper oxygenation and the use of attention focusing, if needed, is the goal ultimately, it is the laboring woman who chooses from among all the coping techniques taught those that will best assist her as she embarks on one of the greatest adventures of her life.[10]

Recommendation

- Study can be replicated on large sample in different setting so that findings can be generalized to large population.

- A study may be conducted on the attitude of the hospital personal to the policy of administration of non-pharmacological methods during labor.

- A comparative study can be done to study the effect of other non-pharmacological measures with breathing technique to reduce anxiety and pain.

- A study can be including effect of teaching on outcome of labor or Apgar score of the baby.

- The study can be replicated in different settings to strengthen the findings

Acknowledgement

Ethical consideration

All administrative permission from hospitals was taken. Informed written consent was taken from participants before data collection. All the data were kept confidential and used for research purpose only.

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