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“A STUDY TO ASSESS THE EFFECTIVENESS OF MODIFIED LAMAZE BREATHING TECHNIQUE ON LABOUR OUTCOME AMONG PRIMI PARTURIENT MOTHERS AT SELECTED HOSPITAL, KOLAR”

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ABSTRACT

Labour is a startling experience and its different in every woman, which includes physiological and psychological mechanism., Both pharmacological and non-pharmacological methods are available today and it is known that the non pharmacological options involve less risk when used in this process. Modified Lamaze breathing technique practiced during labor process by parturient mothers help to progress the labour and neonatal outcome, in the current era the woman are educated and actively involve themselves in decision-making and using self-comforting techniques and non-pharmacologic methods to enhance and progress the labour. **Methodology** By using simple random sampling technique (lottery method) among 60 primi parturient mothers 30 in group A (experimental group) and 30 in group B (control group) an experimental study was conducted in selected hospitals, kolar with the objectives to assess the labour outcome among primi parturient in group A (modified Lamaze breathing technique) and Group B (hospital routine nursing measures), to evaluate the effectiveness of group A versus group B on labour outcome among parturient mothers, To determine association between the selected demographic variables with labour, outcome among parturient mothers in group A and group B. The conceptual frame work used for the present study is based on King's goal attainment theory. The tool used for the study were modified Lamaze breathing technique observational check list to score the breathing technique, WHO partograph and labour assessment tool to score the labour outcome and neonatal outcome. The collected data was analysed and interpreted by using descriptive and inferential statistics. After analysis it is evident that the overall mean for effectiveness of labour outcome among group A (22.00) and SD 4.457, group B (20.27) SD 5.394 and neonatal outcome among group A (8.07) and SD 1.946, group B (7.40) SD 2.328. **Results** The study findings depict the mean difference in Labour events score ($t=1.5666$, $P=0.126$), Labour outcome ($t=1.357$, $P=0.180$) and Neonatal scores ($t=1.203$, $P=0.234$) was statistically significant. with Group A who received modified Lamaze breathing technique and had better outcome compared to mothers of Group B having only hospital routine nursing measures. Association analysis between independent and dependent variable revealed the chi-square value of selected demographic variables like age ($\chi^2=13.38$), qualification ($\chi^2=3.884$), occupation ($\chi^2=2.907$), religion ($\chi^2=4.591$) type of family ($\chi^2=2.283$), place of residence and ($\chi^2=1.007$), food pattern ($\chi^2=3.500$) were not found significant at 0.05 level of significance. Hence hypothesis proved. And the study concludes that modified Lamaze breathing technique is effective on labour outcome during labour process.

INTRODUCTION

Lamaze breathing is a technique used to help and relax during labor. Dr Ferdinand Lamaze, a French obstetrician, pioneered the Lamaze breathing technique in the late 1950s. Although the method was initially pioneered in breathing techniques to reduce labor pains and the techniques utilize several breathing patterns in order to encourage relaxation. The breathing patterns include inhaling for five seconds, then breathing out for five seconds. Another option is the two short breaths, then one deep breath exercise that sounds like “hee heehooooo.” The last breath should be released through the mouth. Lamaze breathing techniques are designed to keep focused on breathing—not on pain experienced during childbirth, according to Modern Stork. Lamaze is also designed to help

to conserve energy while giving birth—this helps to reduce the level of exhaustion following birth. Hence made the investigator to select this technique for study.

NEED FOR THE STUDY

According to the latest data from 150 countries, currently 18.6% of all births occur by CS, ranging from 6% to 27.2% in the least and most developed regions, respectively. Latin America and the Caribbean region has the highest CS rates (40.5%), followed by Northern America (32.3%), Oceania (31.1%), Europe (25%), Asia (19.2%) and Africa (7.3%). Based on the data from 121 countries, the trend analysis showed that between 1990 and 2014, the global average CS rate increased 12.4% (from 6.7% to 19.1%) with an average annual rate of increase of 4.4%. The largest absolute increase occurred in Latin America and the Caribbean (19.4%, from 22.8% to 42.2%), followed by Asia (15.1%, from 4.4% to 19.5%), Oceania (14.1%, from 18.5% to 32.6%), Europe (13.8%, from 11.2% to 25%), Northern America (10%, from 22.3% to 32.3%) and Africa (4.5%, from 2.9% to 7.4%).

OBJECTIVES

- To assess the labour outcome among parturient mothers in group A (Lamaze breathing with hospital routine measures) Group B (hospital routine measures)
- To evaluate the effectiveness of group A versus group B on labour outcome among parturient mothers
- To determine association between the selected demographic variables with labour outcome among parturient mothers in group A and group B.

OPERATIONAL DEFINITIONS

Effectiveness It refers to the outcome of Lamaze breathing technique with Hospital routine measures versus hospital routine measures during first stage of labour, by using Modified WHO partograph (Maternal outcome) to assess the cervical dilatation, rupture of membrane, intensity of uterine contraction, duration of labour. APGAR score in 1 minute and 5 minutes (neonatal outcome) and admission to NICU.

Lamaze breathing: Group A primiparturient mothers were encouraged to take short breath i.e. take a deep breath by nose and blows it through mouth that makes a sound **hee hoo** and again short breath i.e. deep breath and with hold it for four seconds and will be asked to blow through mouth on the count of five which makes a sound hee hoo, the **technique is so called “hee hoo heee hoo”** same is practiced for 20 minutes with 10 minutes rest in left lateral position, which is scored using modified Lamaze breathing observational check list.

Parturient mothers: it refers to the women who is under going labor process, for the first time after completion of 38 gestational weeks and has admitted in the selected hospitals.

Labor outcome: it refers to both maternal and neonatal outcome

1. Maternal outcome- duration of labor, rate of cervical dilatation, intensity of uterine contraction, rupture of membrane, mode of delivery which will be assessed using modified labour assessment tool which will be retrieved from WHO partograph.

2. Neonatal outcome- APGAR score (at 1 minute and 5 minutes) and admission to neonatal NICU which will be retrieved from neonatal record.

Selected hospitals: ETCM hospital kolar, urban PHC, kolar.

ASSUMPTIONS

- All parturient mothers are in need of midwifery care during labour
- Lamaze breathing technique may have a significant influence on labour outcome, neonatal outcome.

HYPOTHESIS

NH₁: There will be no significant difference in labour, neonatal outcome among group A and group B at the rate of P<0.05

NH₂: There will be no significant association of selected demographic variable with labour, neonatal outcome in group A and group B at the rate of P<0.05.

Conceptual framework

Kings goal attainment theory is based on the concepts of personal, interpersonal and social system including perception, judgement, action, reaction, interaction and transaction.

- Perception
- Judgement
- Action
- Reaction
- Interaction
- Feed back

4. RESEARCH METHODOLOGY

RESEARCH APPROACH

Experimental approach Allow to make inferences about the relationship between independent variables and dependent variables, it also reduces variability and makes it easier to find differences in treatment outcomes.

Experimental designs are often considered the best type of research design, because the researcher can confidently determine that effect on the dependent variable is directly due to the manipulation of the independent variable. In this study the researcher confidently determined the effect on maternal outcome is directly due to practice of modified Lamaze breathing technique by the primi parturient mothers during active phase of labour.

According to Polit and Hungler (1999), "The strength of true experiment over other methods lies in the fact that experimenter can achieve greater confidence in the genuiness and interpretability of relationships because they are observed under careful conditions"¹⁵.



In experimental design the randomly selected subjects are intrigued purposefully, Hence, the experimental research approach was considered appropriate to evaluate the effectiveness of modified Lamaze breathing technique in labour outcome.

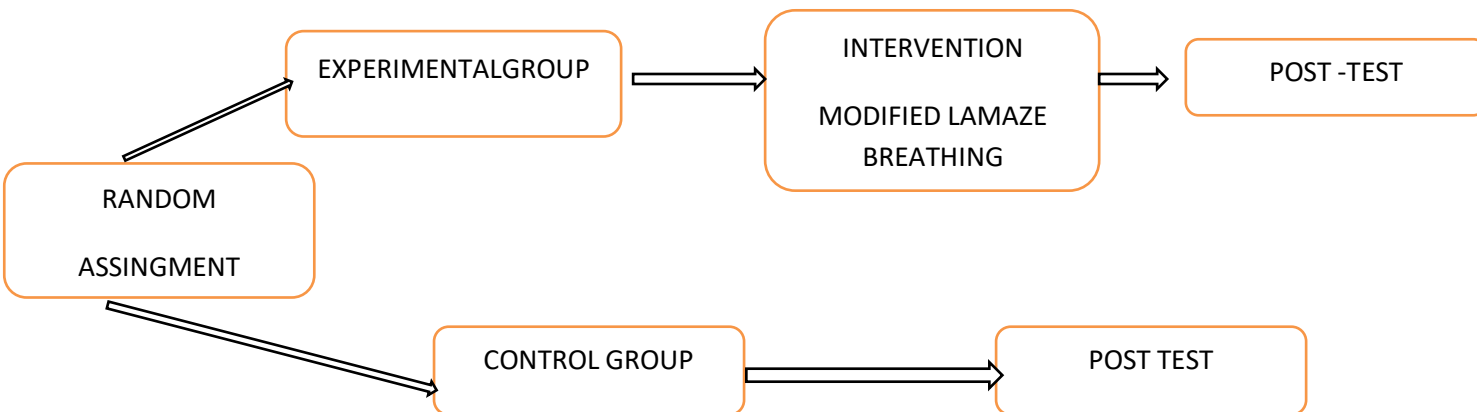
RESEARCH DESIGN

The research design is the overall plan or a blue print to conduct study for obtaining answers to the research questions being studied and for handling some of the difficulties encountered during the research process. While designing a study, researcher specifies which specific design will be adopted and what will be done to minimize bias and enhance the interpretability of results.

Research design is a set of instruction for the researcher to arrange and analyse data in certain ways that will control the subjects to be studied.

The research design selected for the study is " post-test only design". In the experimental approach, the investigator studies cause and effect relationship by exposing the experimental group to the treatment, then compares the result that of the control group which was not exposed to treatment.

The research design adopted for the study can be represented as:



Subjects were assigned using lottery method to experimental and control group, the intervention(modified Lamaze breathing technique)was introduced to the experimental group and post-test is done(assessed maternal outcome)were as in control group post-test done(assessed maternal outcome) without any intervention.

TABLE :1 Schematic Representation of the Experimental Study Design (Post Test only Design)

GROUP	INTERVENTION DURING ACTIVE PHASE OF LABOUR	POST TEST AFTER DELIVERY
Parturients in active labour (Experimental group)	Use of Modified Lamaze breathing technique	Labour outcome in terms of: ❖ Maternal outcome(Retrieved from WHO partograph) and neonatal outcome (Retrieved from neonatal records)
Parturients active labour (Control group)	Hospital routine nursing measures	Labour outcome in terms of: ❖ Maternal outcome (Retrieved from WHO partograph)and neonatal outcome(Retrieved from neonatal records)

SETTING

The investigator selected urban primary health centre, kolar as the setting of the study this hospital provides nursing and medical care, the hospital has a maternity and gynaecology ward with a bed strength of 30-50 and a labour theatre.

Population

In the present study, the population comprised of primi parturient mothers in active phase of labour with 4 cm of cervical dilatation, admitted in the labour room in the selected hospital in kolar, with consideration of inclusion and exclusion criteria.

SAMPLE

The process of selecting a number of individuals for the study in such a way that the individuals represent the larger group from which they are selected, it’s a process of choosing a representative portion of the entire population. Sample selected in this study are the primi parturient mothers with 4 cm of cervical dilatation, admitted in the labour room in the selected hospital, kolar.

SAMPLE SIZE

Trial study - in this study trial study was conducted in ETCM hospital kolar- among 06 mothers (Experimental group- 03, control group- 03)

Pilot study –in this study pilot study was conducted in ETCM hospital kolar- among 30 mothers (Experimental group- 15, control group- 15).

Final study –in this study main study was conducted in urban primary health centre, kolar -among 60 mothers (Experimental group- 30, control group- 30).

SAMPLING TECHNIQUE

Sampling is the process of selecting a portion of the population to obtain data regarding a problem. In this study the investigator had used simple random sampling technique- Lottery method 2-4 parturient mothers per day Mother who will take No 1 will be assigned to group A, No.2 to group B. Simple random sampling technique is the most pure and basic probability sampling design, every member of the population has an equal chance of being selected as subjects.

All primigravida mothers in the labour room of the selected hospital who met the inclusion criteria were selected for the study. A total of 60 subjects 30 in Group A and 30 in Group B were selected.

The criteria for selection of sample subjects:

- ❖ Mothers in active phase of labour with cervical dilatation 4 cm admitted in the labour room of the hospital.
- ❖ A normal singleton primi pregnancy.
- ❖ Vertex presentation & Occipito Anterior position of foetus.
- ❖ No associated complications of pregnancy (not a high-risk case).
- ❖ Regular Fetal Heart Sound.
- ❖ Willing to participate in the study

SAMPLING CRITERIA

Inclusion criteria

- 1.Parturient (primi gravida) mothers in first stage of labour (3-4 cm dilatation) who have completed 38 weeks of gestation available on the time of data collection.
- 2.Mother who is willing to participate in the study.

Exclusion criteria

- 1.Multi gravida mothers
- 2.Mother who is not willing to participate
- 3.Mothers with previous history of caesarean section
- 4.Mothers with high risk pregnancy.

DATA COLLECTION TOOLS AND TECHNIQUES.

- ❖ Structured Interview schedule
- ❖ Modified Lamaze breathing technique observation checklist
- ❖ Modified WHO Partograph to score maternal outcome
- ❖ labour outcome assessment tool.

The major steps taken for the development of the structured interview schedule were:

- Planning of the interview schedule
- Item construction
- Establishing validity and reliability of the tool

Table 2: The summary of the data collection tools and techniques is depicted in tabulated form

SL.NO	TOOL	PURPOSE	DATA COLLECTION TECHNIQUE
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01	Structured interview	To collect the background data	Interviewing
02	Modified Lamaze breathing technique observation checklist	To monitor the re-demonstration of Lamaze breathing by parturient mothers in experimental group.	observation
03	WHO Partograph Section A labour events	To monitor the progress of labour among the parturient mothers in experimental group and control group.	observation
04	Section B- labour outcome	To monitor the progress of labour among the parturient mothers in experimental group and control group	observation
05	Section c- neonatal outcome	To retrieve data from neonatal records	Data collection

DESCRIPTION OF STRUCTURED INTERVIEW SCHEDULE

Part – A: It composed of data such as age, education status, work pattern, religion, residential area, type of family, food pattern, habit of doing regular exercise, type of induction of labour, gestational age of the mother.

Part – B: It composed of data such period of gestation of primi parturients and method of induction used during labour process.

Modified Lamaze breathing technique observational check list

The primi parturient mothers were encouraged to take short breath i.e. take a deep breath by nose and blow it through mouth that makes a sound **hee hoo** and again short breath i.e. deep breath and withhold it for four seconds and asked to blows through mouth on the count of five which makes a sound hee hooo ,the **technique is so called “hee hoo heeeehooooo”** same is practiced for 20minutes with 10 minutes rest in left lateral position for 4 hrs, in active phase 1 technique is scored as 8 and each step practiced is scored as 1 false practice or no practice is scored as 0, maximum score is 384 for active phase of labour and minimum score is 189 which will be recorded until full cervical dilatation, if the mother continue to practice even in 2nd and 3rd stage of labour it will be scored as 1 for practiced and 0 if not practiced.

The check list is as follows HEE HOO-SHORT BREATH- STEP1. TAKE A DEEP BREATH BY THE NOSE

STEP 2. BLOW IT THROUGH MOUTH

HEEE HOOOO

SHORT BREATH STEP 3. TAKE A DEEP BREATH

STEP 4. WITH HOLD IT FOR 4 SEC

STEP 5. BLOW IT THROUGH MOUTH

Modified WHO Partograph It is used to record the observations of selected parturient in experimental group and control group. The partograph is a graphic recording of the progress of labour and other key findings regarding mother and baby during labour. The partograph starts with the active phase of 1st stage of labour. It comprised of 12 items on identification data of parturient, fetal heart sound, assessment of labour such as status of membranes, color

of amniotic fluid, dilatation of cervix, descent of head, frequency & duration of uterine contractions, moulding of fetal head, any drug administered and vital signs of parturient.

Scoring was given to the tool with the use of scoring sheet prepared by the investigator to assess the labour outcome.

Section-A (score sheet for labour events)

Labour onset is spontaneous, Liquor is adequate, Cervix dilates 1cm/2hrs, Uterine contractions in rhythm, Descent of head, Moulding of foetal head, Foetal heart sound.

Score 2: Favourable events (It means that the labour has followed the normal pattern) (i.e., labour onset is spontaneous, liquor is clear, cervix dilates 1 cm/hour, uterine contractions in rhythm,etc.)

Score1: Unfavourable events (It refers to any deviation from normal pattern)

The maximum score was 14 and the minimum score was 7. Score range of 11 - 14 was considered as a score indicating **favourable events**. Score range of 7 – 10 was considered as a score indicating **unfavourable events**.

Section-B

Score sheet for labour outcome

Progress in labour, Type of delivery, Nature of delivery, Duration of first stage of labour (Active Phase-Transition phase), Duration of second stage of labour, Duration of third stage of labour, Expulsion of placenta-assisted-manually-surgical, Maternal complications.

Score 3: Satisfactory outcome (It refers to the normally progressed labour with no complications to mother).

Score 2: Fair outcome (It refers to the labour outcome which is deviated from the normal not to the extent from which recovery is not possible).

Score 1: Poor outcome (It refers to the labour outcome which is fully deviated from the normal).

The maximum score was 24 and the minimum score was 08. The score were divided into three equal ranges for determining the levels of labour outcome:

Level of Maternal Outcome

Satisfactory outcome

Fair outcome

Poor outcome

Range of Scores

19 – 24

14–18

08–13

Section C -score sheet for neonatal outcome

- ❖ Fetal Heart Rate during labour
- ❖ APGAR score at 1 & 5 minutes
- ❖ Neonatal complications

Score : 3-satisfactory

2-Fair

1-poor outcome

Maximum score: 9 Minimum score: 3

Level of Neonatal Outcome

Range of Scores

Satisfactory outcome

07 – 09

Fair outcome

05 –07

Poor outcome

03- 05

Results The study findings depict the mean difference in Labour events score ($t=1.5666$, $P=0.126$), Labour outcome ($t=1.357$, $P=0.180$) and Neonatal scores ($t=1.203$, $P=0.234$) was statistically significant. with Group A who received modified Lamaze breathing technique and had better outcome compared to mothers of Group B having only hospital routine nursing measures. Association analysis between independent and dependent variable revealed the chi-square value of selected demographic variables like age ($\chi^2=13.38$), qualification ($\chi^2=3.884$), occupation ($\chi^2=2.907$), religion ($\chi^2=4.591$) type of family ($\chi^2=2.283$), place of residence and ($\chi^2=1.007$), food pattern ($\chi^2=3.500$) were not found significant at 0.05 level of significance. Hence hypothesis proved. And the study concludes that modified Lamaze breathing technique is effective on labour outcome during labour process.

CONCLUSION

The focus of this study was to assess the Effectiveness of modified Lamaze breathing technique on labour outcome among primi gravida mothers in selected Hospital, kolar.

NURSING PRACTICE:

The knowledge on childbirth preparation like Modified Lamaze breathing technique will be effective in midwifery practice. The midwives have a vital role in providing safe and effective nursing care to enhance the progress of labour outcome

NURSING EDUCATION

Nurse education needs to include non-pharmacological pain relief measures like modified Lamaze breathing exercises, in the curriculum of basic nursing education as a part of intra-natal care along with the physiology of labour and labour supportive techniques. Educate the students about various complementary and alternative therapies for labour management. Practical sessions also provided to give comprehensive care for the intranatal mothers. Encourage the students for effective utilization of research-based practice.

Nursing administration

Nursing administrators should take an initiative in creating policies or plans in providing education to women during pregnancy and help them in safe delivery. Managers & administrators need to facilitate the utilization of research-based nursing care aspects in day-to-day practices to formulate policies and make necessary changes in healthcare delivery system in the hospitals.

Nursing research

A profession seeking to improve the practice of its members and to enhance its professional stature strives for the continual development of a relevant body of knowledge. Nursing research represents a critically important tool for the nursing profession to acquire such knowledge.

Limitations

The study was limited only to primigravid mothers.

RECOMMENDATION

On the basis of the findings of the study the following recommendations are offered for future research:

1. A similar study could be conducted on a larger sample which would yield more reliable results.
2. A comparative study could be conducted with other non-pharmacological measures on labour outcome.

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