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EFFECTIVENESS OF EDUCATIONAL PROGRAMME ON KNOWLEDGE REGARDING LAMAZE BREATHING TECHNIQUE ON PAIN MANAGEMENT DURING LABOR AMONG STAFF NURSES OF SELECTED HOSPITALS.

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Abstract: **Introduction**: Women experience childbirth as a natural process in their lives. Lamaze breathing is a widely used technique in childbirth to manage pain and anxiety during labor. This study evaluates the effectiveness of an educational program on Lamaze breathing techniques for pain management among staff nurses in selected hospitals. Objective: 1.To assess the pre test score knowledge regarding the Lamaze breathing technique on pain management during labor among staff nurse in selected hospitals. 2. To assess the effectiveness of educational programme on knowledge regarding Lamaze breathing technique on pain management during labor among staff nurses of selected hospitals. 3. To find an association of study findings with selected demographic variables. **Methodology:** Non- probability convenience sampling technique used in pre-experimental one-group pre-test post-test design. The study was conducted among 52 staff nurses in selected hospitals, utilizing a self-structured knowledge-based questionnaire. Statistical analysis included descriptive statistics, paired t-tests for comparing pre-test and post-test scores, and chi-square tests for association analysis. **Results:** The pre-test showed that 80.8% of nurses had moderate knowledge, 11.5% had inadequate knowledge, and only 7.7% had adequate knowledge. After the educational intervention, 94.2% of nurses demonstrated adequate knowledge, while 5.8% had moderate knowledge. The mean difference score was 13.63, with a 35.9% improvement. The paired t-test value ($t = 26.965$) was statistically significant at $p < 0.001$, indicating a significant improvement in knowledge levels. The area of work was the only demographic variable showing a significant association with post-test knowledge levels ($\chi^2 = 7.838$, $p = 0.049$).**Conclusion:** The study confirms that an educational program effectively enhances nurses knowledge of Lamaze breathing techniques for pain management during labor. The findings highlight the importance of training staff nurses to improve maternal care during childbirth.

Keywords: Educational Programme, Lamaze Breathing Technique, Staff Nurses, Pain Management, Labor.

I. INTRODUCTION

The Lamaze technique, also known as the Psychoprophylaxis method or simply Lamaze, began as a prepared childbirth technique. As an alternative to medical intervention during childbirth, it was popularized in the 1950s by the French obstetrician Fernand Lamaze and based on his observations in the Soviet Union. Lamaze aims to build a mothers confidence in her ability to give birth through classes that help pregnant women understand how to manage pain in ways that facilitate labor and promote comfort, including relaxation techniques, movement and massage.[1]Women experience childbirth as a natural process in their lives. First-time birth attendants would certainly have some apprehension about the outcome of the birth. Pregnant women usually worry about the pain they experience during labor and delivery. Labor pain is one of the most important pains. Controlling labor pain is a major concern in obstetrics. Today, the interest in non-pharmacological methods can be useful because of their experience in work and also because of the lack of side effects.[2] Good health before pregnancy can help a mother cope with the physical and emotional stress of pregnancy, labor and delivery.[3] Breathing along with relaxation reduced the sensation of pain, so women could give birth without medication. Despite falling asleep, llama mothers were able to give birth "awake and conscious".[4]The study conducted by Sharda Nagvanshi, MP, India (2020) reported that The overall percentage of knowledge in the experimental group for the pre-test was insufficient, i.e., 80% of the staff nurses, and the amount of knowledge score was moderate in 20% of staff nurses; however, after video-assisted teaching, the post-test knowledge score 18 improved to 13.33% as moderate knowledge, and 86.66% of staff nurses demonstrated the knowledge score. Researcher recommended that it essential to

improve the knowledge of staff nurses regarding Lamaze breathing technique. that study can be done with large samples for better generalization and similar studies conducted in other setting.[5]

I.1 STATEMENT OF THE PROBLEM

To Assess Effectiveness Of Educational Programme on Knowledge Regarding Lamaze Breathing technique On Pain Management During Labor Among Staff Nurses Of Selected Hospitals.

II. OBJECTIVES

a. To assess the pre test score knowledge regarding the Lamaze breathing technique on pain management during labor among staff nurse in selected hospitals.
b. To assess the effectiveness of educational programme on knowledge regarding Lamaze breathing technique on pain management during labor among staff nurses of selected hospitals.
c. To find an association of study findings with selected demographic variables.

III. Hypothesis

H_0: There is no significant difference between the pre- test and post- test knowledge score regarding Lamaze breathing technique on labor pain management among staff nurses in selected hospitals.

H_1: There is significant difference between the pre- test and post- test knowledge score regarding Lamaze breathing technique on labor pain management among staff nurses in selected hospitals.

IV. Assumption

Educational programme may be effective in improving knowledge regarding Lamaze breathing technique on pain management during labor among staff nurses of selected hospitals.

V. MATERIALS AND METHODS

5.1 Approach and Design : A Quantitative research approach and Pre-experimental one group pretest posttest design

5.2 Study Setting : The study conducted in Selected Hospitals.

5.3 Sample Size : 52

5.4 Sample Size Estimate :

Calculates the sample size to get the following confidence interval: **proportion ± 0.05**.
The standard deviation is based on the proportion (p) is:
$\sigma = \sqrt{(p(1-p))} = 0.5$.
$\alpha = 1 - 0.95 = 0.05$.

$$p = 1 - \frac{\alpha}{2} = 1 - \frac{0.05}{2} = 0.975$$

You may use $p = \alpha/2$, and get the same sample size.

$Z_p = Z_{0.975} = 1.96$, You may instead use $Z_{\alpha/2} = Z_{0.025} = -1.96$.

The required sample size is:

$$\mathbf{n = \frac{Z^2_{0.975} * p(1 - p)}{MOE^2}}$$

$$\mathbf{n = \frac{1.96^2 * 0.5(1 - 0.5)}{0.05^2} = 384.1459}$$

Since the population size is finite: N=60, the corrected sample size is:

5.5 Sampling Technique : Non-probability sampling technique

5.6 Criteria for Sample Selection: Inclusion criteria: Staff nurses of Obstetrics and Gynaecology ward and Staff nurses those who are willing to participant in the study. **Exclusion criteria:** Staff nurses who have completed training on Lamaze breathing technique pain management during labor.

5.7 Variables:

Independent variable- Educational Programme
Dependent variable: Knowledge

5.8 Data Collection Tool

Section A: Demographic variables data sheet
Section-B: Self-structured questionnaires on knowledge.

5.9 Description of Tool:

Tool consist of two sections i.e Section A and Section B.

Section A : It consist of demographic profile of the staff nurses, it includes of 5 demographic variables i.e Age of Staff Nurse, Gender , Professional Experiences, Educational Qualification, Area of work. The investigator constructed this tool to collect the background data of the study subjects and to identify the influence of sample characteristics with the knowledge in them.

Section B : The Self – Structured Questionnaires of Lamaze breathing technique consist of 38 questions. Score 1 was given for each correct answer for every questionnaires. It included 24 questions regarding general knowledge and 14 question regarding skill Assessment of knowledge score were categorized into 3 categories Inadequate (0-12), Moderate (13-25), Adequate (26-38).

5.9 Validity and Reliability Tool

Content validity : The tool content validity was assessed by 11 experts for 38 items. Each item was rated relevant by 10 experts, yielding an I-CVI of 0.91 and an overall S-CVI/Ave of 0.91, which indicates excellent

Construct validity: Construct validity was assessed through Exploratory Factor Analysis (EFA) using Principal Component Analysis (PCA). Supported by PCA (KMO = 0.82, Bartlett's χ^2 = significant,). Components with eigenvalues greater than 1 were extracted, and items demonstrated factor loadings above 0.40, establishing that the tool effectively measured the intended constructs of knowledge.

Reliability Tool : In this study reliability was tested on 12 samples by Test Retest Method. The questionnaire was said to be reliable if the correlation coefficient was more than 0.7 The reliability for the questionnaire was calculated by the by using test retest method of reliability, it is found to be 0.94 and hence tool was reliable and valid.

5.10 Data Collection Process:

The data gathering process commenced from 10th December 2024 to 20th December 2024 . Prior to data collection, the investigator took permission from the respective and concerned authorities. The investigator selected subjects who met the inclusion criteria. The investigator introduced him and explained the purpose of the study and assured them of the confidentiality of the data collected. The investigator then took the written consent from the subjects for their participation in the study. A pre-test in the form of questionnaire was administered. The investigator carried out Educational programme on knowledge regarding Lamaze breathing technique on the same day intervention given. The post-test was given on the 8th day using the same tools on the same participants with same code.

5.11 Description of Programme:

Data was collected from 52 staff nurses who attended the Educational programme on Lamaze Breathing Technique. The tool consisted of a structured questionnaire with 38 items, validated by 11 experts. The teaching plan was delivered using lecture-cum-discussion method with AV aids such as flash cards, charts, handouts, and pamphlets. Pre-test and post-test assessments were administered to evaluate participants knowledge regarding Lamaze breathing technique. Responses were scored and analyzed to assess improvement in knowledge after the educational intervention. It focusing on exercise and relaxation techniques used to reduced labor pain. The session lasted for 45 minutes.

VI. STASTICAL ANALYSIS:

All results calculated using SPSS version 26. Overall result for the outcome variables listed in tables and graphs for both Descriptive statistics (Mean, Mean percentage, Standard deviation)and Inferential statistics (paired t-test for knowledge gain, chi-square for associations)**.**

VII. RESULT

Table 1: Frequency and percentage distribution of demographic variables of the Staff Nurses

n=52

Demographic Variables	Frequency	Percentage
Age		
21 – 25	15	28.8
26 – 30	13	25.0
31 – 35	10	19.2
35 – 45	12	23.1
Above 45	2	3.8
Sex		
Female	52	100.0
Male	-	-
Professional experience (in yrs)		
1 – 3	12	23.1
4 – 6	13	25.0
7 – 10	10	19.2
10 – 15	13	25.0
Above 15	4	7.7
Educational qualification		
Diploma in nursing	9	17.3
B.Sc. Nursing	19	36.5
Post Basic B.Sc. Nursing	10	19.2
M.Sc. Nursing	14	26.9
Doctorate	-	-
Area of work		
General ward	7	13.5
OT	6	11.5
ICU	3	5.8
Labour ward	36	69.2

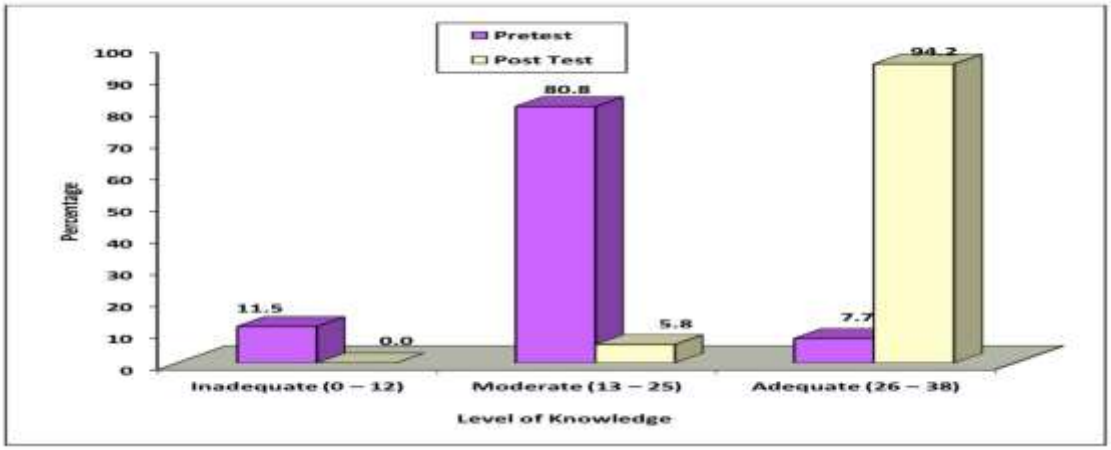
The table 1 indicated that most of the staff nurses, 15(28.8%) were aged between 21 – 25 years, 52(100%) were female, 13(25%) had 4 – 6 years of professional experience, 19(36.5%) were educated upto B.Sc. Nursing and 36(69.2%) were working in labour ward.

Table 2: Frequency and percentage distribution of pretest and post test level of knowledge regarding Lamaze Breathing Technique on Pain Management during labour among staff nurses.

n=52

Level of Knowledge	Pretest		Post Test	
	F	**%**	**F**	**%**
Inadequate (0 – 12)	6	11.5	-	-
Moderate (13 – 25)	42	80.8	3	5.8
Adequate (26 – 38)	4	7.7	49	94.2

The table 2 illustrate that in the pretest, 42(80.8%) had moderate knowledge, 6(11.5%0 had inadequate knowledge and (7.7%) had adequate knowledge and after the intervention of Educational program in the post test, significant improvement in the level of knowledge was observed 49(94.2%) had adequate knowledge and 3(5.8%) had moderate knowledge regarding Lamaze Breathing Technique on pain management.



Graph 1 : Percentage distribution of pretest and post-test level of knowledge regarding Lamaze Breathing Technique on Pain Management during labour among staff nurses

The graph presents the percentage distribution of pre-test and post-test knowledge levels regarding the Lamaze Breathing Technique on Pain Management during Labor among staff nurses. The three categories of knowledge levels are Inadequate (0–12), Moderate (13–25), and Adequate (26–38).

Table 3 : Association of post-test level of knowledge of Lamaze Breathing Technique on Pain Management during labour among staff nurses with selected demographic variables.

n=52

Demographic Variables	Moderate		Adequate		Chi-Square test & p-value
	F	%	F	%	
Age					χ^2=1.415
21 – 25	1	1.9	14	26.9	d.f=4
26 – 30	0	0	13	25.0	p=0.842
31 – 35	1	1.9	9	17.3	N.S
35 – 45	1	1.9	11	21.2	
Above 45	0	0	2	3.8	
Sex					-
Female	3	5.8	49	94.2	
Male	-	-	-	-	
Professional experience (in yrs)					χ^2=1.179 d.f=4
1 – 3	1	1.9	11	21.2	p=0.882
4 – 6	1	1.9	12	23.1	N.S
7 – 10	0	0	10	19.2	
10 – 15	1	1.9	12	23.1	
Above 15	0	0	4	7.7	
Educational qualification					χ^2=0.938
Diploma in nursing	0	0	9	17.3	d.f=3
B.Sc. Nursing	1	1.9	18	34.6	p=0.816
Post Basic B.Sc. Nursing	1	1.9	9	17.3	N.S
M.Sc. Nursing	1	1.9	13	25.0	
Doctorate	-	-	-	-	
Area of work					**χ^2=7.838**
General ward	2	3.8	5	9.6	**d.f=3**
OT	0	0	6	11.5	**p=0.049**
ICU	0	0	3	5.8	**S***
Labour ward	1	1.9	35	67.3	

*p<0.05, S – Significant N.S – Not Significant, p>0.05

The table 3 depicts that the demographic variable area of work (x^2= 7.838, p=0.049) had statistically significant association with post test level of knowledge of Lamaze Breathing Technique on Pain Management during labour among staff nurses at p<0.05 level and the other demographic variables did not show statistically significant association with post test level of knowledge of Lamaze Breathing Technique on Pain Management during labour among staff nurses at p< 0.05 level.

VIII. DISCUSSION

The present study shows that most of the staff nurses, 15(28.8%) were aged between 21 – 25 years, 52(100%) were female, 13(25%) had 4 – 6 years of professional experience, 19(36.5%) were educated upto B.Sc. Nursing and 36(69.2%) were working in labour ward. The study concluded that knowledge regarding Lamaze breathing technique among staff nurses in selected Hospitals was found to be less. The knowledge scores of pre tests were less as compared to the post-test scores. When it has come

to the association between post -test knowledge with selected demographic variables. There is need to provided Knowledge regarding selected aspects of Lamaze breathing technique among staff nurses. The present study supported by Shireen Owiez Hassan 2020 it conducted on a group of midwives in the Holy Kerbala governorate, using the pre and post test. The data were collected using the self-report method. The results of the study indicated that (83.3%) of the midwives showed a lack of knowledge, in post test after applying educational programme, the midwives expressed good knowledge (86.7%). The study concluded that there is an improvement in the knowledge of midwives after the post-test of the experimental group due to the educational program of the Lamaze method. The study recommended training midwives staff by implementing such a training program that really helps to improve their knowledge.[6]

CONCLUSION:

The present study assessed Effectiveness of Educational Programme on Knowledge Regarding Lamaze Breathing Technique on Pain Management during Labor among Staff Nurses of Selected Hospitals. The findings demonstrate that educational programs significantly improve nurses knowledge of Lamaze breathing techniques, addressing existing knowledge gaps and enhancing the quality of maternal care. The study supports the integration of Lamaze breathing techniques into routine nursing training programs to ensure that staff nurses are well-equipped to assist laboring mothers.

Ethical consideration:

The study conducted after approval of Institutional Ethics Committee of Government Medical College, Nagpur (IEC/2097 Dated 23.2.2024). Written consent taken from the each participant for participation in the study. Throughout the study, confidentiality will be maintained. Freedom to withdraw from the study at any point of time assured.

Limitations:

1. The availability of time is limited for data.
2. The study was limited to obstetrics and gynecological nursing staff.
3. Study limited to only selected hospitals.

Recommendations:

1. A similar study can be conducted on large scale.
2. A similar study can be replicated by using other innovative sources.
3. A comparative study can be done to evaluate the effectiveness of Video assessed teaching versus educational programm on Lamaze breathing
4. A similar study can be replicated by using other Sampling Technique.
5. A Similar studies can be conducted in other settings also.

Conflict of interest:

There is no conflict of interest in the study. No any risk factors to the subjects of the study.

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