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RESEARCH ARTICLE

EFFECTIVENESS OF NURSE LED CHILD BIRTH PREPARATION PROGRAMME UPON KNOWLEDGE AND BEHAVIORAL RESPONSES DURING LABOUR AMONG PRIMI MOTHERS

Ms. Chanamthabam Roshinibala Devi M.Sc (N), Dr. Latha Venkatesan M.Sc (N), M.Phil (N), Ph.D (N) Ph.D
(HD&FS), M.BA (HM) and Ms. Pandiselvi R. M.Sc (N), M.B.A

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Abstract

A Nurse Led Child Birth Preparation Programme is a great way to prepare mothers for labour and birth. Many times it led to intra partum mal- adaptive coping behavior resulting in premature bearing down efforts, maternal exhaustion, dehydration, asking to take for caesarian section. This study was aim to assess the effectiveness of Nurse Led Childbirth Preparation Programme upon Knowledge and Behavioral Responses during Labour among Primi Mothers in a selected hospital, Chennai. Study was conducted using Quasi Experimental Research Design; seventy mothers were selected for the study using consecutive sampling technique. Data was conducted by using tools such as Demographic Variable Proforma, Obstetrical Variable Proforma, Structured Knowledge Questionnaire on Child Birth Preparation, and Observational Rating Scale on Behavioral Responses during Labour. The collected data were statistically analyzed and the results revealed that child birth preparation mean knowledge scores in posttest was higher (M = 11.22 & SD = 2.55) than pre-test (M = 6.06 & SD = 1.66) of primi mothers in experimental group. This difference was found to be statistically significant at $p < 0.001$. And also there was a significant difference in post-test mean knowledge scores on child birth preparation between control (M = 6.11 & SD = 1.64) and experiment (M = 11.22 & SD = 2.55) group of primi mothers at $p < 0.001$. In addition, mean scores of behavioural responses during labour was higher in experimental (M = 56.66 & SD = 13.66) than control (M = 48.03 & SD = 13.05) group of primi mothers. This difference was found to be statistically significant at $p < 0.001$. The findings indicated that educational opportunity focusing on child birth preparation programme among primi mothers can enhance their positive attitude toward vaginal birth, empower them against the fear of childbirth and decline the maternal request for unnecessary cesarean childbirth.

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Corresponding Author:- Ms. Chanamthabam Roshinibala Devi , E- mail – chroshini1002@gmail.com

Introduction:-

“Child birth is a natural phenomenon” Childbirth is one of the greatest events in every woman’s life, especially among primi mothers. Many of the mothers do not know about what changes takes place and their role. At this time, the mother needs lots of help for the realization and acceptance of childbirth as a normal physiological phenomenon (Annamma Jacob, New Delhi). The women who are pregnant for the first time is said to be Primi gravida, they are very new to the pregnancy. Hence, lack of knowledge about the physiological and psychological changes during pregnancy and labour process and care of baby (Farisni 2019). Knowledge of birth preparedness in pregnant women is the process of planning for safe delivery (Markos. 2014). The first structured childbirth education programme came from England. “Read Method,” which advocated reducing pain in childbirth by using knowledge to diminish fear, which in turn, decreased pain, was the basis for prepared childbirth classes (Masterpasqua, 1982).

Between 1990 and 2015, maternal mortality worldwide dropped by 44% between 2016 and 2030, as part of the sustainable development goals, the target is to reduce the global maternal mortality ratio to 70 per 100 000 live births (WHO) Child birth education has influenced the practice of obstetrics remarkably during the past 50 years.

Cochrane meta analysis of mixed 6 studies concluded that nurse led relaxation classes and birth preparation programme for low risk mothers decrease the number of caesarian section. (Gruen at al, 2011).

Child birth education was suggested by Byrne e al (2014) as a specific strategy to help reduce anxiety of childbirth and alleviate concerns about labor pain. Nurse play a vital role in preparing the mothers during pregnancy to make the mothers understand the nature and effects of pain and to have safe delivery. With the emerging need of a culturally combatable child birth education , the investigator develop and administered a child birth preparation programmed for primi mothers to cope up during pregnancy and during labor to have safe delivery and positive maternal outcome .

Objectives:-

1. To assess the level of knowledge on child birth preparation among control and experimental group of primi mothers.
2. To determine the effectiveness of nurse led child birth preparation programme upon knowledge among control and experimental group of primi mothers.
3. To determine the effectiveness of nurse led child birth preparation programme upon behavioural responses during labour among control and experimental group of primi mothers.
4. To find out the correlation between knowledge scores on child birth preparation and behavioral responses during labour among experimental group of primi mothers.

Hypotheses

Ho1: There will be no significant difference in knowledge scores on child birth preparation between pre and post-test in control and experimental group of primi mothers.

Ho2: There will be no significant difference in pre and post-test knowledge scores on child birth preparation between control and experimental group of primi mothers.

Ho3: There will be no significant difference in behavioural response scores during labour between control and experimental group of primi mothers.

Ho4: There will be no correlation between knowledge on child birth preparation and behavioural responses during labour among control and experimental group of primi mothers.

Methods and Materials:-

This study was conducted after obtaining ethical clearance from IEC of the institution and permission from concerned authorities of the city. The study conducted using Quasi Experimental Research Design at two selected Hospitals, Chennai. Samples of 70 primi mothers who volunteered and consented to participate in the study were recruited. From the selected two hospitals the sample were assigned 35 in control and 35 in experimental group who were between 36 – 40 weeks of gestation with low risk pregnant women and expected normal delivery were selected in the study using consecutive sampling technique. Those participants' not completing all the phases of the study was excluded. Therefore, the final sample size was 67 and was considered for analysis, with 32 in experimental group and 35 in control group.

Tools

Data was conducted by using tools such as Demographic Variable Proforma, Obstetrical Variable Proforma, Structured Knowledge Questionnaire on Child Birth Preparation, and Observational Rating Scale on Behavioral Responses during Labour through self administration method and observational method.

Structured Knowledge Questionnaire

Structured Knowledge Questionnaire on Child Birth Preparation tool is used to measure the level of knowledge of primi mothers. It consists of 16 items. Respond to the right option score - 1 and wrong answer score - 0. A total score each item range from 0- 1 and the total obtainable scores ranges from 0- 16. Obtained score was interpreted as poor knowledge (<30%) moderate knowledge (31- 63%) adequate knowledge (>64%), ie higher the score have adequate knowledge.

Observational Rating Scale on Behavioral Responses during Labour

Observational Rating Scale on Behavioral Responses during Labour used to observe the behaviour responses of the primi mothers during labour.

The instrument consists of 30 items regarding physiological and psychological behaviour in all stage of labour. It is 4 point rating scale (Never 0, Sometimes - 1, Often - 2, Always - 3) scoring was given based on the responses of the mothers. Score from each item range from 0 - 3. A total score is obtained by adding numerical responses for each item. The obtainable score range from 0 - 90. obtained score was interpreted as poor responses (<40%) moderate responses (40- 60%) and good responses (>60%), ie higher the score better good responses.

Data collection

After initial introduction the researcher obtained written consent from the selected mothers to participate in the study. An assurance was given regarding nurses led child birth preparation programme before the data collection procedure was initiated.

The waiting room of the antenatal OPD was used for taking classes regarding child birth preparation programme. Structured Knowledge Questionnaire on Child Birth Preparation during antenatal period through self-administration method. Observational Rating Scale on Behavioural Responses during Labour was used to observe the physiological and psychological behavioural responses of primi mothers during labour through observational method. Confidentiality were maintained throughout the study. Collected data was analyzed based on the objectives.

Results:-

Regarding demographic variables, majority of the primi mothers were aged between 20-27 yrs (74.28%, 75%), Hindus (65.63%, 40%), Graduates (91.43%, 78.13%), Professional workers (68%, 40%), living as nuclear family (77.14%, 53.13%) and from urban area (68.57%, 87.50%) in control and experimental group of primi mothers respectively.

With regards to obstetrical variables (figure:1), majority of the primi mothers were in between 36-37 weeks of gestation (68.57%, 59.37%) in control and experimental group respectively.

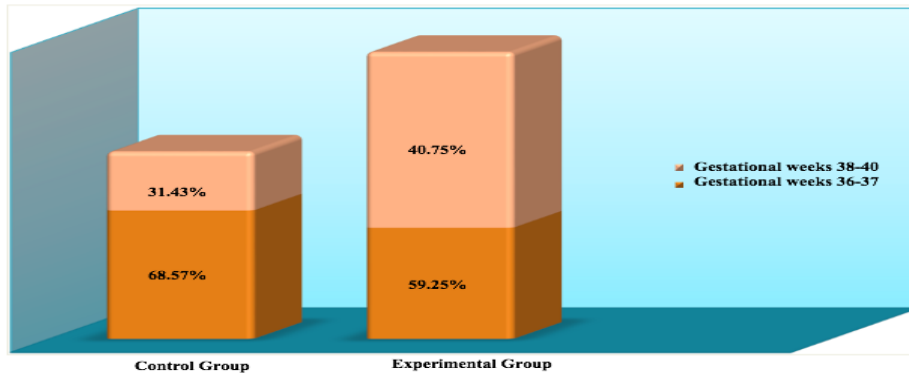


Fig 1:- Percentage Distribution of Gestational Weeks in Control and Experimental Group of Primi Mothers.

Findings revealed that, in pretest majority of the primi mothers had moderate level of knowledge on child birth preparation in control and experiment group (69%, 74%) respectively. Whereas in post-test majority of the primi mothers had moderate level of knowledge in control group (72%) but 69% of the mothers in experimental group had adequate level of knowledge on child birth preparation.

In terms of knowledge scores Table 1 revealed that, in control group there was no significant difference in mean knowledge scores on child birth preparation between pre-test (M = 5.57 & SD = 1.62) and post-test (M = 6.11 & SD = 1.64) with ‘t’ value of 1.96 at p> 0.05. Whereas in experimental group there was a significant difference in mean knowledge scores on child birth preparation between pre-test (M = 6.06 & SD = 1.66) and post-test (M = 11.22 & SD = 2.55) with ‘t’ value of 11.20 at p< 0.001. This can be attributed to the effectiveness of nurse led child birth preparation programme upon knowledge of primi mothers. Hence, the null hypothesis **Ho1** “There will be no significant difference in knowledge scores on child birth preparation between pre and post-test in control and experimental group of primi mothers was rejected”.

Table 1:- Comparison of Mean and Standard Deviation of Knowledge Scores on Child Birth Preparation between Pre and Post-test in Control and Experimental Group of Primi Mothers.

Knowledge	Max score	Control Group (n = 35)				Experimental Group (n = 32)			
		Mean	SD	Mean diff	Paired ‘t’ test & p value	Mean	SD	Mean Diff	Paired ‘t’ test & p value
Pre-test	16	5.97	1.62	0.14	1.966 p>0.05	6.06	1.66	(0.89)	11.20 p< 0.001
Post-test	16	6.11	1.64			11.22	2.55		

Findings in Table 2 depicts that, there was no significant difference in pre-test mean knowledge scores on child birth preparation between control (M = 5.97 & SD = 1.62) and experimental group (M =6.06 & SD = 1.62) of primi mothers with ‘t’ value of 0.227 at p>0.05. However, there was a significant difference in post-test mean knowledge scores on child birth preparation between control (M = 6.11 & SD = 1.64) and experiment group (M =11.22 & SD = 2.55) of primi mothers with ‘t’ value of 9.64 at p< 0.001. Hence, the null hypothesis **Ho2** “There will be no significant difference in pre and post-test level of knowledge on child birth preparation between control and experimental group of primi mothers was rejected”.

Table 2:- Comparison of Mean and Standard Deviation of Pre and Post-test Knowledge Scores on Child Birth Preparation between Control and Experiment Group of Primi Mothers in Pre and Post-test.

Group	Max score	Control Group (n = 35)		Experimental Group (n = 32)		Independent 't' test & p value
		Mean	SD	Mean	SD	
Pre-test	16	5.97	1.62	6.06	1.66	0.227 p > 0.05
Post-test	16	6.11	1.64	11.22	2.55	9.646 P< 0.001

In control group only 28% of the primi mothers had good behavioral responses during labour, whereas in experimental group majority of the mothers had good behavioral responses (78.12%) during labour. In terms of knowledge scores Table 3 shows that, there was a significant difference in mean scores of behavioural responses between control (M = 48.03 & SD = 13.05) and experimental group (M = 56.66 & SD = 13.66) of primi mothers during labour with ‘t’ value of 2.638 at p< 0.001.. Hence, null hypothesis **Ho3** “There will be no significant difference in behavioural response scores during labour between control and experimental group of primi mothers was rejected”.

Table 3:- Comparison of Mean and Standard Deviation of Behavioural Responses Scores during Labour between Control and Experimental Group of Primi mothers.

Group	Max score	Mean	SD	Mean diff	Independent 't' test	p value
Control (n = 35)	90	48.03	13.05	(9.59)	2.638	p<0.001
Experiment (n=32)	90	56.66	13.66			

Findings in Table 4 shows that, there was a weak correlation (r = 0.09, at p> 0.05) between the knowledge and behavioural responses in control group of primi mothers. Whereas in experimental group, there was a moderate correlation (r = 0.59, at p < 0.001) between the knowledge and behavioural responses. From the findings we can inferred that there was a correlation between the knowledge and behavioural responses during labour. Hence null hypothesis **Ho4** “There will be no correlation between knowledge of child birth preparation and behavioural responses during labour among control and experimental group of primi mothers was rejected”.

Table 4:- Correlation between Knowledge on child birth preparation and Behavioural Responses during labour in Control and Experimental Group of Primi mothers.

Variables	Control Group (n = 35)				Experimental Group (n = 32)			
	Mean	SD	'r' value	p value	Mean	SD	'r' value	p value
Knowledge	6.11	1.64	0.092	p>0.05	11.22	2.55	0.590	p<0.001
Behavioural Responses	48.03	13.05			56.33	13.33		

Discussion:-

The study was undertaken to assess the effectiveness of nurse led childbirth preparation programme upon knowledge, behavioral responses during labour among primi mothers. Study findings revealed that, Majority of the mothers in experimental group (69%) had adequate level of knowledge on child birth preparation and there was statistically significant difference in mean knowledge scores on child birth preparation between pre-test (M = 6.06 & SD = 1.66) and post-test (M = 11.22 & SD = 2.55), (t = 11.20 , p < 0.001). And also there was a significant difference in post-test mean knowledge scores on child birth preparation between control (M = 6.11 & SD = 1.64) and experiment group (M = 11.22 & SD = 2.55) of primi mothers (t = 9.64, p < 0.001).

The findings are in conformity with the study conducted by Malata, Ellen Chirwa (2011) on assessment of the effectiveness of childbirth education in Malawi where a sequential quasi experimental design was used to assess the structured child birth education programme. Healthy pregnant women of 30 weeks gestation were selected with the total sample size 104 and 105 for the control and experimental group. The control group attended the normal antenatal clinic and the experimental group enrolled in a child birth education programme in addition to the antenatal clinic. For the experimental group there was significance difference (p < 0.05) in mean pre and post-test scores. The results showed that the child birth education programme imparted knowledge to the experimental group who receive more effective childbirth education.

In experimental group majority of the mothers had good behavioral responses (78.12%) during labour and there was statistically significant difference in mean scores of behavioural responses between control (M = 48.03 & SD = 13.05) and experimental group (M = 56.66 & SD = 13.66) of primi mothers during labour (t = 2.638, p < 0.001).

The above finding is consistent with the findings of Kresheh (2018), who conducted an exploratory, descriptive study to implement and evaluate the proposed childbirth preparation programme. Out of the 107 sample of mothers the effectiveness of the program was noticed through the improvement of pregnancy outcomes. The results showed that the mothers who attended the education had an increased sense of control over the childbirth process, and it increased the benefits and duration of breastfeeding and knowledge of family planning. The study also showed a high rate of participants' satisfaction and suggestions of improved pregnancy outcomes.

The present study revealed that there was a weak correlation (r = 0.09, at p > 0.05) between the knowledge and behavioural responses in control group of primi mothers. Whereas in experimental group, there was a moderate correlation (r = 0.59, at p < 0.05) between the knowledge and behavioural responses during labour. Hence null

hypothesis **Ho4** “There will be no correlation between knowledge of child birth preparation and behavioural responses during labour among control and experimental group of primi mothers was rejected”.

The findings of the present study is also consistent with the findings of a cross-sectional study to determine the knowledge, attitude and practice towards pelvic floor muscle exercise (PFME) among antenatal women in Kelantan by Rosediana (2012). The findings reported that the proportion of antenatal women with good knowledge, attitude and practice score were about 51.8%, 96.4% and 10.7% respectively. There was a significant positive correlation between knowledge and practice score ($p = 0.012$). He concluded that despite good attitude, the overall knowledge and practice on PFME were still poor that needed more attention from primary doctors.

From the findings it can be inferred that the mothers who received child birth education had improved their knowledge and behavioral responses during labour. This can be attributed to the positive correlation between knowledge and behavioural responses during labour.

Recommendations:-

Conducting on a large sample to generalize the results by using true experimental study for the higher level of evidence. A comparative study can also be conducted between rural and urban primi mothers and also between primi and multi gravida mothers.

Conclusion:-

Study findings showed that after intervention there was a significant improvement in knowledge and behaviour responses during labour. So, nurse led child birth preparation programme was found to be effective to increase knowledge related to child birth and enabled them to prepare themselves for child birth. Primi mothers who were exposed the classes on nurse led child birth preparation programme significantly possessed more knowledge and good coping capacity during labour process than mothers who were not exposed to classes on nurse led child birth preparation programme. There was a significant correlation between the knowledge and behavioural responses during labour.

Therefore, from the study it can be concluded that nurse led child birth preparation programme prepare the primi mothers for the process of labour and child birth. It also helps them to feel relaxed during the whole process of labour, thus having a favorable maternal outcome.

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