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A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Plotting Of Partograph among the Nursing Students in Selected Nursing Colleges of Vadodara

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Abstract: **The objectives of the research are to assess the existing knowledge regarding plotting of partograph among the nursing students, evaluate the effectiveness of structured teaching programme on knowledge regarding plotting of partograph among the nursing students and assess the pretest knowledge scores regarding plotting of partograph with the selected demographic variables of the nursing students.An Evaluative research approach with pre experimental one group pretest posttest design was used. Data was collected by convenient sampling method from 50 internship GNM students from Sigma Institute of Nursing and Nrupur Institute of Nursing Science & Research. Tool consists of 5 demographic variables and 25 structured knowledge questionnaires regarding plotting of partograph, administered before and after STP. Data was analyzed by using inferential and descriptive statistics. Computed t test revealed that mean post test knowledge score regarding plotting of partograph (20.28 ± 3.08) was significantly higher than mean pre test knowledge score (12.76 ± 3.49) at p<0.05 level. The't' value was significant (t= 2.0096) at p<0.05 level indicating the structured teaching programme regarding plotting of partograph was effective. The study findings revealed that STP was highly effective in improving knowledge of plotting of partograph among nursing students.**

Keywords: **Effectiveness, Knowledge, Structured teaching programme, Plotting of partograph, Nursing students.**

1. INTRODUCTION

Labor has been termed the most dangerous journey a human ever under takes. The reason being that although it is a natural process but complications can arise at any time during its course. One of the tools used to monitor labor and prevent prolonged and obstructed labor is the partograph, a preprinted one-page form on which labor observations are recorded. The purpose of the partograph is to help health care providers record, interpret, analyze, and use data to make clinical management decisions while labor is in progress. The form provides a graphic overview of the progress of labor and records information about maternal and fetal condition during labor.

The partograph provides information about deviations from the normal progress of labor and about abnormalities of maternal or fetal condition during labor. It alerts providers when a woman may need an intervention and facilitates ongoing evaluation of the effects of those interventions.

An important development in the management of labour was the introduction of the partogram. A partograph is a representation of the changes that occur in labour, including cervical dilatation, fetal heart rate, maternal pulse, blood pressure and temperature. It also shows a numerical record of features such as urine output and the volume and type of intravenous infusions (including oxytocin drips). It is therefore possible at a glance to identify deviations from normal in any of this variable.

The partograph has following advantages:-

- It depicts the progress of labor at a glance.
- It enables failure to progress to be readily recognized.
- It is simple to use.
- It provides a practical teaching aid.
- It is an efficient means of exchange of technical information about labor progress between teams of care givers.

The partograph can be used by midwives personnel to assess the progress of labor to identify when intervention is necessary. Studies have shown that using the partograph can be highly effective in reducing complications from prolonged labor for the mother such as postpartum hemorrhage, sepsis, uterine rupture and its sequelae and for the newborn like death, anoxia, infections, etc. It is very useful to assist in make the correct decision about transfer, Caesarean birth, or other life-saving interventions. Partograph is one of the very important tools for monitoring the labor. This helps in identifying the prolonged labor, decision for augmented labor and for the operative birth. This make to reduce the maternal mortality rate during the intranatal period.

Safe Motherhood Conference organized jointly by The World Bank, WHO and the United Nations Population Fund concluded with a "Call to Action." This call demands that health workers involved in the care of mothers and children take positive action now to reduce maternal mortality and morbidity. Among the actions called for are to ensure that all pregnant women are screened by supervised and appropriately trained non-physician health workers where appropriate, with relevant technology including partographs as needed, to identify those at risk and to provide prenatal care and care during labor, as expeditiously as possible. As part of the Safe Motherhood, World Health Organization promoted a partograph with a view to improving labor management and reducing maternal and fetal morbidity and mortality. Introduction of the partograph with an agreed labour management protocol reduced both prolonged labour and the proportion of labors requiring augmentation. Emergency caesarean birth fell from 9·9% to 8·3% and intrapartum stillbirths from 0·5 to 0·3%.

The World Health Organization model of the partograph was devised by an informal working group, who examined most of the available published work on partographs and their design. It represents in some ways a synthesized and simplified compromise, which includes the best features of several Partographs. This partograph clearly differentiates normal from abnormal progress in labor and identifies those women likely to require intervention. Its use in all labor wards is recommended.

When the partograph is used effectively it will prevent prolonged or obstructed labour, which accounts for about 8% of maternal deaths. The majority of the deaths and complications could be prevented by cost-effective and affordable health interventions like the partograph and indeed the same measures that would prevent maternal deaths would also prevent morbidity and improve neonatal outcome.

Statement of the Problem:

"A study to assess the effectiveness of structured teaching programme on knowledge regarding plotting of partograph among the nursing students in selected nursing colleges of Vadodara."

Objectives:

1. To assess the existing knowledge regarding plotting of partograph among the nursing students .
2. To evaluate the effectiveness of structured teaching programme on knowledge regarding plotting of partograph among the nursing students.
3. To assess the pretest knowledge scores regarding plotting of partograph with the selected demographic variables of the nursing students.

2. METHODS

Research Approach & Design: An evaluative research approach with pre-experimental one group pretest posttest design was used. The study design shows that on the first day pre-test was given to collect the data by self administration knowledge questionnaires. On the same day structured teaching programme was conducted. On the seventh day post-test was conducted to assess effectiveness of structured teaching programme with same pre-test knowledge questionnaires.

Setting Of The Study: The study is conducted in two nursing colleges, Sigma Institute of Nursing and Nrupur Institute of Nursing Science & Research in Vadodara, Gujarat.

Sampling Technique: Non-probability Convenient sampling technique was used.

Sample Size: 50 internship GNM students.

Inclusion Criteria:

- Nursing students who are doing intenship in GNM nursing
- Nursing students who are willing to take part in the study.
- Nursing students who are available at the time of data collection.

Exclusion Criteria:

- Nursing students who have attended similiar previous studies.

Description Of Tool:

- Tool -I- The demographic data collection tool.

Questionarie for demographic data collection tool that are age, gender, marital status, source of information and type of family.

- Tool-II- Knowledge regarding ploting of partograph

This Scale consist 25 statements to measure the level of knowledge regarding plotting of partograph. Total 25 statements comprising introduction of partograph, components of partograph, and importance of partograph.

3. RESULTS

Analysis Of Knowledge Regarding Plotting Of Partograph:

1. SECTION A : DESCRIPTION OF THE LEVEL OF KNOWLEDGE:

Table I: The level of knowledge of students regarding plotting of partograph shows that, majority 39 (78%) of the sample had average knowledge, 1 (2%) of the students had poor knowledge and 10 (20%) had good knowledge.

2. SECTION B: AREA WISE DESCRIPTION OF KNOWLEDGE SCORE:

Table II: Area wise distribution of the knowledge scores of the students reveals that out of 25 maximum obtainable scores, the total mean score was 12.76 which is 25.52%. The highest mean percentage (56.5%) was obtained in the area of "Introduction of Partograph" with mean and SD of 2.26±0.59. The mean percentage of 53.84% was obtained in the area of "Components of partograph" with mean and SD of 2.26±1.74. The mean percentage of 43.75% was obtained in area of "Importance of partograph" with mean and SD of 3.5±1.16.

3. SECTION C : EVALUATION OF THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME REGARDING PLOTTING OF PARTOGRAPH:

Table III : shows that majority of respondents percentage (48%) had scores between 11-13 and all the respondents had scores below 21 in the pre-test in comparison to majority (36%) of the students in post-test had scores between 21-23.

4. SECTION D : AREA WISE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME:

Table IV: Area wise distribution of knowledge score of the students reveal that, in Introduction of partograph the mean post-test knowledge score was 94.5% and the mean pre-test knowledge score 56.5%. The effectiveness score was 38%. The 't' value was computed to find the level of significance between the means and it was observed that not significant ('t' = 1.9) at $p < 0.05$ level for the 'partograph'.

The mean post-test knowledge score for Components of partograph was 78% and the mean pre-test score was 53.84% with the effectiveness of 24.15%. The statistical test indicates the effectiveness of score was 24.15% found highly significant ('t' = 5.27) at $p < 0.05$ level for 'Components of partograph'.

The mean post-test knowledge score of 'Importance of partograph' was observed to be 79.5% and the mean knowledge pre-test score of 43.75% with the effectiveness knowledge score of 35.75% established significant result ('t' = 5.4) at $p < 0.05$ level which is highly significant.

The enhancement of knowledge score was more in the partograph (38%) followed by Importance of partograph (35.75%) then in Components of partograph (24.15%).

TESTING THE RESEARCH HYPOTHESIS:

Significant difference between pre-test and post-test knowledge scores:

Hypothesis was tested using paired 't' test. The value of 't' was calculated to analyse the difference in knowledge of the students with their pre-test and post-test scores. The research hypothesis H_1 was formulated to evaluate the effectiveness of structured teaching programme on knowledge regarding plotting of partograph.

H_1: The mean post test knowledge score of subject exposed to structured teaching programme regarding plotting of partograph will be significantly higher than the mean pre test knowledge scores as measured by structured questionaire.

To find the significant difference between computed mean of pre-test and post-test knowledge score, the paired 't' test was calculated.

Table V: Pre-test and post-test mean knowledge scores and 't' value showed that the mean gain in knowledge was 12.57. The 't' value was significant (t= 2.0096) at $p<0.05$ level indicating the planned teaching programme regarding plotting of partograph was effective. Hence, stated research hypothesis H_1 is accepted.

Association Between The Pre-test Knowledge Scores And Selected Demographic Variables:

Association between the pretest knowledge scores of the nursing students and selected demographic variables like age, gender, marital status, source of information and type of family.

H_2: There will be significant association between pre test knowledge scores and selected demographic variables.

Table VI: According to the association between level of pretest knowledge scores and selected demographic variables, age group chi square value is 0.3572 ($p<0.05$) which is not significant. The chi square value was not significant (x^2= 0.2182) at $p <0.05$ level for the gender. For the marital status chi square value is 0.2295 at ($p<0.05$) which is not significant. In source of information the chi square value is 3.2931 at ($p<0.05$) is not significant. The chi square value was not significant for the type of family 0.0117 at ($p<0.05$). Hence, stated research hypothesis H_2 is rejected.

4. DISCUSSION

The aim of selection of my study on plotting of partograph to improve the knowledge of internship GNM student so that after completion of their diploma course when they can use the knowledge and practice the maintainance of partograph in the labour room and prevent further complications during labour.

The findings of the pretest study showed that the level of knowledge of students regarding plotting of partograph shows that majority 39 (78%) of the sample had average knowledge, 1 (2%) of the students had poor knowledge and 10 (20%) had good knowledge and no participants belong to very poor and excellent group in pretest.

Area wise distribution of the knowledge scores in pretest of the students reveals that out of 25 maximum obtainable scores the total mean score was 12.76 which is 25.52% of the maximum score. The highest mean percentage (56.5%) was obtained in the area of "Introduction of Partograph" with mean and SD of 2.26±0.59. The mean percentage of 53.84% was obtained in the area of "Components of partograph" with mean and SD of 2.26±1.74. The mean percentage of 43.75% was obtained in area of "Importance of partograph" with mean and SD of 3.5±1.16. These findings explain that the students had average knowledge regarding plotting of partograph.

In testing of the hypothesis H_1, pre-test and post-test mean knowledge scores and 't' value showed that the mean gain in knowledge was 12.57. The 't' value was significant (t= 2.0096) at $p<0.05$ level indicating the teaching programme was effective. Hence, stated research hypothesis H_1 is accepted.

According to the association between level of pretest knowledge scores and selected demographic variables, age group, gender, marital status, source of information and type of family were not significant. Hence, stated research hypothesis H_2 is rejected.

5. IMPLICATION OF THE STUDY

The present study was conducted to determine the effectiveness of structured teaching programme on knowledge regarding plotting of partograph among nursing students in selected nursing colleges at Vadodara. The findings of the present study have implications in the field of nursing education, nursing practice, nursing administration and nursing research.

Nursing Education:

The study has proved that improving knowledge regarding plotting of partograph among nursing students is essential to identify the complications related to labour as they are exposed to the posting in labour room and they are going to complete their course. The nursing personnel need to be equipped with the adequate knowledge on plotting of partograph. The nursing students should be given adequate knowledge, ability to identify the condition of labour using partograph and planning for appropriate intervention.

Although communication is included in the nursing curriculum more emphasis should be given to develop the skill so that they can impart the information. Continuing nursing education should be conducted for need awareness.

Nurse educate also refer to this study in order to provide good planned knowledge and clinical experience to the nursing students on plotting of partograph.

The nursing personal can actively work as educator, guide, coordinator, and can participate in teaching programmes for the personnels working in labour room to update their knowledge regarding plotting of partograph.

Nursing Practice:

In hospital setup nurses play a vital role. They can identify the changes during child birth process. The nurse can be perceptive and sensitive in the process of identifying and validating any immediate and long term, concern or problem respond to these by appropriate intervention and can respond to these by appropriate intervention. The investigator as a nurse felt the need that nurses and nursing students should act as facilitators to reduce maternal and fetal mortality and morbidity.

Nursing Administration:

In the event of ever changing disease manifestations, knowledge, explosion, technology, and ever-growing challenges of nursing the administration has a responsibility to provide nurses with substantial continuing educational opportunities.

Necessary administration support should be provided for the development of such educational material, nursing personnel should be motivated to devote their time for the development of educational material.

Having thorough knowledge regarding plotting of partograph can prevent many complications. Nurse administrator should arrange educational programmes for nsing personnel regarding plotting of partograph. The administrator should emphasize and encourage the nurse to use different strategies for women education.

Nursing Research:

Professional organizations in nursing are convinced of the importance of nursing research as a major contribution to meeting the health and welfare needs of the people. One of the aims of nursing research is to expand and broaden the scope of nursing. The expanded role of a professional nurse emphasizes those activities which promote health maintenance behavior among the people. The present study is only an initial investigation in the area of teaching the GNM internship students on plotting of partograph.

It is essential to identify at present the level of knowledge regarding plotting of partograph, to know the extent of information necessary to be given on talk. The extensive research must be conducted in this area to identify several more effective methods of education. This study also brings about facts that more studies need to be done in different settings, which is culturally acceptable as better teaching strategies of education. This study can be baseline for future study.

6. LIMITATIONS OF THE STUDY

1. Data collection period was limited to 4 weeks; hence the sample size was relatively small.
2. Sample was selected only from Vadodara District hence generalization can only be made for the sample studied.
3. The study did not use control group. The investigator had no control over the events that took place between pre-test and post-test.

7. RECOMMENDATIONS

Based on the findings of the present study recommendations offered for the future study are:

1. Similar study can be conducted on a larger sample to generalize finding.
2. A comparative study can be conducted with control group.
3. The comparative study may be conducted to find out the effectiveness between SIM and STP regarding the same topic.
4. A similar study can be conduct on the nursing degree course students, staff nurse.
5. A comparative study can be conducted with degree students and diploma students.
6. A similiar study can be conducted to assess the practice.

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DECLARATIONS

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Conflict of interest: There are no conflicts of interests that I should disclose.

Ethical approval: Ethical approval was optained from the Sumandeep Vidyapeeth University Institutional Ethics Committe before conducting the research on 17/01/2014 with outward no. SVIEC/ON/Nurs/BN-131013105

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APPENDIX - A

Table I: Distribution of level of knowledge of students regarding plotting of partograph

Range of Score	Percentage of Score	Level of Knowledge	Number of Students	Percentage of Students
00 – 05	00 - 20	Very Poor	00	00
05 - 10	20 - 40	Poor	01	02
10 – 15	40 - 60	Average	39	78
15 - 20	60 - 80	Good	10	20
20 - 25	80 - 100	Excellent	00	00
Total			**50**	**100**

Table II: Distribution of area wise mean, sd and mean percentage of knowledge scores

Sl. No	Knowledge score	Maximum possible scores	Mean	SD	Mean percentage
1	Introduction of partograph	4	2.26	0.59	56.5
2	Components of partograph	13	07	1.74	53.84
3	Importance of partograph	8	3.5	1.16	43.75
Total		**25**	**12.76**	**3.49**	**25.52**

Table III: Knowledge distribution of pre-test and post-test scores of the nursing students.

Knowledge Score	Pre-test			Post-test		
	Frequency (f)	Cumulative Frequency	Percentage cumulative frequency	Frequency (f)	Cumulative Frequency	Percentage cumulative frequency
5-7						
7-9						
10-11	05	05	10			
11-13	24	29	48			
13-15	11	40	22			
15-17	5	45	10	03	03	06
17-19	4	49	08	09	12	18
19-21	1	50	02	11	23	22
21-23				18	41	36
23-25				09	50	18

Table IV: Area wise effectiveness of Structured teaching programme distribution of Mean, SD and Mean percentage of knowledge score of nursing students

Sl. No.	Areas	No. of Statement	Score	Knowledge Scores									Paired 't' test
				Pre-test (x)			Post-test (y)			Effectiveness (y-x)			
				Mean	SD	Mean %	Mean	SD	Mean %	Mean	SD	Mean %	
1	Introduction of partograph	4	4	2.26	0.59	56.5	3.78	0.46	94.5	1.52	0.59	38	1.9
2	Components of partograph	13	13	07	1.74	53.84	10.14	1.64	78	3.14	2.00	24.15	5.27
3	Importance of partograph	8	8	3.5	1.16	43.75	6.36	0.98	79.5	2.86	1.39	35.75	5.4
Total		25	25	12.76	3.49	51.04	20.28	3.08	81.12	7.52	3.98	30.08	12.57

Table V: Significance of the difference between pretest and post-test knowledge score

Sl. No.	Mean pretest	Mean posttest	Mean effectiveness	't' value	Table value	Level of significance P<0.05
1	12.76	20.28	7.52	12.57	2.0096	Significant

Table VI: Association between pretest scores and demographic variables

Characteristics	Frequency	Level of knowledge			Df	Chi-sq. value	Table value	Significant P<0.05
		Poor 0-8	Average 09-16	Good 17-25				
Age								
19 - 21	38	0	34	4	4	0.35	9.49	NS
22 - 24	09	0	8	1				
25 and above	03	0	3	0				
Gender								
Male	14	0	13	1	2	0.21	5.99	NS
Female	36	0	32	4				
Marital status								
Married	13	0	12	1	2	0.22	5.99	NS
Unmarried	37	0	33	4				
Source of information								
Nursing books	21	0	17	4	4	3.29	9.49	NS
Lectures	29	0	28	1				
Others	00	0	0	0				
Type of family								
Nuclear family	11	0	8	3	2	0.01	5.99	NS
Joint family	39	0	29	10				

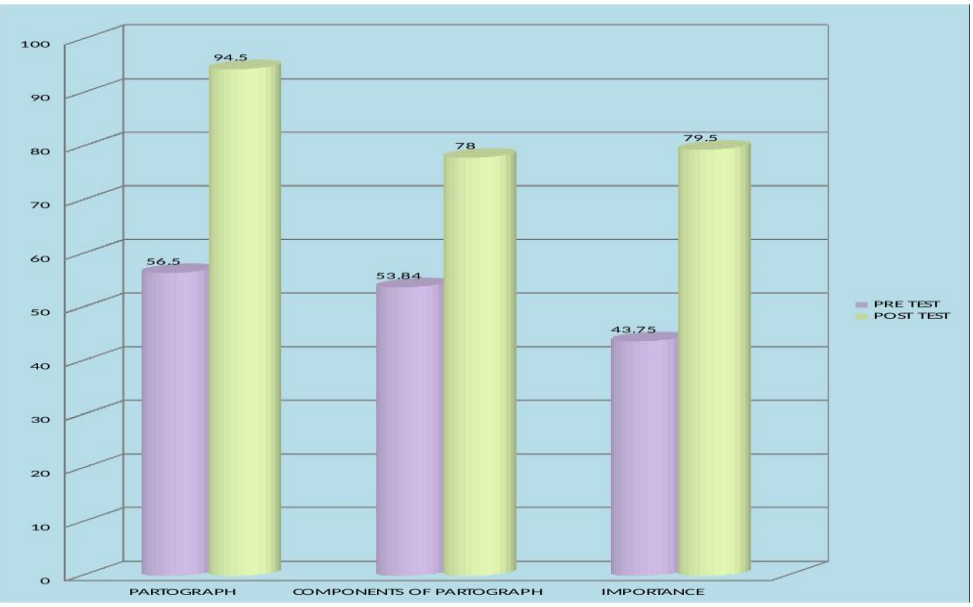

Figure 1 : Area wise knowledge score on plotting of partograph