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Research article

Assess the knowledge and skills on partogram among the midwifery students in a selected Nursing college, Puducherry

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Abstract

A descriptive study was done to assess the knowledge on skills on partogram among midwifery student at Mother Theresa Post Graduate and Research Institute of Health Sciences, Puducherry.

Objective: Assess the knowledge on skill use of partogram among midwifery students and identify the challenges facing midwifery students with regards to the utilization of partogram in maternity wards and Determine the factors that influence the use (proper or not proper) of partogram among midwifery students in maternity wards methods.

Methodology: A quantitative approach and descriptive non-experimental research design were used. Simple random sampling technique was used to select the sample for this study. The sample size was 76. Data were collected by using modified WHO partograph tool followed by self-structured questionnaire was provided and one scenario was given to each and every student to assess how they are plotting the partograph. The researcher collected the data individually after obtaining consent from each participant. The inclusion criteria were those who are willing to participate and present during the day of data collection. After the data collected it was entered in the X-cel sheet and coding was given for better analysis. The data was analyzed both descriptive and inferential statistics method. Demographic variables are planned to analyze by frequency and percentage and the knowledge, skill aspects were analyzed with the help of descriptive as well as inferential statistics.

Results: The results highlighted that all most all 76(100%)students aware about partogram but regarding the utilization in the labor room only 59(77.63%) students said that they use regularly whereas 17(22.36%) said that they use very rarely.

Key words: Knowledge, Skills**,** Partogram, Midwifery Students

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1. Introduction

“Every woman is a gift when she becomes a daughter. Every woman are special when she becomes a wife. Every woman is a god when she becomes a mother”

In India, a woman dies after every five minutes during pregnancy or childbirth. Nearly one-fourth of the global maternal deaths (25.7 percent) occur in India, A majority of the maternal deaths in India happen after the delivery due to excessive loss of blood, the global health agency said"In fact, two-thirds of maternal deaths occur after delivery, postpartum hemorrhage being the most commonly reported complication. The incidence of emergency postpartum hysterectomies is about 83/100,000 with a maternal mortality of 17.7 per-cents and a perinatal mortality of 37.5 percent"[1].

The trend of maternal deaths in India also varies geographically with the north-eastern state of Assam reporting the highest number of such cases. "The latest estimates of maternal mortality rate in India from 2011-13, show an average of 167 deaths/100,000 live births. The same estimates also demonstrate that wide geographical disparities persist. The highest MMR can be found in Assam (300) and the lowest in Kerala (61)," In India, the prevalence of home childbirths especially in rural areas has also been attributed to a high incidence of maternal deaths.[2]

Global initiatives to strengthen policy intervention for maternal mortality started with the Safe Motherhood Initiative in 1987 by World Health Organization [3]**.**The aim was to raise awareness about the numbers of women dying each year from complications of pregnancy and

childbirth. The target was to reduce maternal morbidity and mortality by 50% by the year 2000[3, 4]

The initiative did not succeed although maternal health has always been a major focus of WHO effort. In 1994, the International Conference on Population and Development intensified its commitment to reproductive health by establishing the Millennium Development Goals (MDG) and the targets of MDG by three-quarters (75%) from 1990 to 2015. [5]

A big step has been achieved, nevertheless; a lot is still needed to be done in MDG 4 (Reduce Child Mortality) and MDG 5 (improve maternal health). India is still one of those countries with high maternal mortality ratio and child mortality rate, standing at 340/100,000 and 21/1000 live births respectively. [6]

Major causes of maternal mortality and morbidity in India include among others severe bleeding, septicemia, eclampsia, infections, heart failure, malaria, anesthetic complications and obstructed labor. The most outstanding cause of these deaths is attributed to severe bleeding (38, 26%) and many cases of severe bleeding were due to uterine rupture [7-9].

To avoid the risk of complications or maternal death, women should be assisted during delivery by personnel who have received training in normal childbirth and who are able, if needed, to diagnose, treat, and refer complications. The results show that almost 7 in 10 births (69 percent) was assisted by a skilled birth attended (10).

The majority of maternal deaths and complications attributable to obstructed and prolonged labor could be prevented by cost-effective and affordable health interventions like the use of partogram [11-12].

Justification

The partogram (sometimes known as partograph) is usually a pre-printed paper form, on which labor observations are recorded. The aim of the partogram is to provide a pictorial overview of labor, to alert midwives and obstetricians to deviations in maternal or fetal well-being and labour progress. Philpott and Castle developed Friedman's in 1972, concept into a tool for monitoring labor by adding the so-called "action" and "alert" lines to the graph [13]

Since 1990 the partogram has been revised by WHO purposely to better monitor, not only the progress of labor, but also the condition of the mother and the fetus during labor. The partogram includes different variables (fetal heart rate, dilation of the cervix, contractions, and pulse rate of the mother) plotted on a pre-printed paper. The plotted data allow the attending health-care practitioner to identify early deviations in the plotted parameters from the normal and make decisions regarding direct intervention or referral, [14]

Literature suggests the utilization of partogram to make a close follow-up of expectant mothers during labor and early postpartum. The partogram offers health professionals with a pictorial overview of the labor to allow early identification and diagnosis of the pathological labor. WHO recommends using the partogram to monitor labor and delivery, with the objective to improve health care and reduce maternal and fetal morbidity and death? WHO advocates the use of partogram as a necessary tool in the management of labour and recommends its universal use during obstetrical labour, therefore, prevention of complications related to labour using the partogram is an important intervention towards reducing maternal and perinatal mortality and morbidity, and in achieving the millennium development goal 4 and 5 [15]

A host of researchers ascertains that to effectively use the partogram, requires knowledge and skills. For instance, a study conducted in Ethiopia found that knowledge about the partogram was fair at 96.6%. The utilization of the partograph was significantly higher among obstetric caregivers working in health centers (67.9%) compared to those working in hospitals (34.4%). Hence, it is recommended that preservice and on-job training of obstetric caregivers on the use of the partogram should be emphasized. The tool was also appreciated in Ghana as an effective instrument to safely monitor expectant mothers during labor, however, skilled birth attendants have not consistently ‘bought in’ the partogram use. This tool was only completed adequately at 25.6%. The same author highlights that when the partogram was completed effectively, it was associated with less maternal blood loss, with less assisted delivery, less neonatal injuries, fewer low Apgar scores and NICU admissions [16].

The problem of availability of partogram was felt. Only 27.3% of respondents had received prior training on partogram and the minority of 9.1% reported that partogram was available in their labor ward. The findings from a study conducted in one of the urban hospitals in India, showed that the majority of respondents (78%) had been trained to use a partogram, however, most of them (76%) indicated that they still met problems in using a partogram, particularly due to the shortage of midwives and nurses working in the labour ward, and as a result of the lack of adequate related knowledge and skills among this staffs [17].

India is still one of those developing countries with high maternal mortality ratio and child mortality rate, estimated at 340/100,000 and 21/1000 live births respectively and WHO recommends using the partogram to monitor labor and delivery, with the objective to improve health care and reduce maternal and fetal morbidity and death [18]. Only 69% of deliveries in India were assisted by skilled attendants and 10% deliveries assisted by medical doctors, 59% by nurses or medical assistants and only 0.3% by midwives. With regards to place of delivery, 67.5% of deliveries are assisted by skilled service providers in the eastern province (predominantly rural), while in the urban area it accounts for 83.1% [19].

Consequently, due to this shortage of skilled birth attendants, it is not rare that nurses and midwives

encounter difficulties while using the partogram. In addition, there is limited literature highlighting nurses and midwives' knowledge and use of partogram. Hence there is a need to determine the utilization of the partogram among nurses and midwives in India, focusing on this the researcher has undertaken the present study.

The objective of the study was to:

Assess the knowledge of skills on partogram among midwifery students
Identify the challenges facing midwifery students' regards to utilization of partogram
Determine factors influencing proper and not proper use of partogram

Application of benner's model of nursing practice to the study

According to Benner nurses/midwives develop and improve their nursing skills by exposure to and experience of real situations in the clinical field. Therefore, in the present study, the model was applied to determine knowledge and skills usage of partogram among midwifery students in relation to their clinical experience. The knowledge and clinical skills of midwifery students to use the partogram should improve as the midwifery students pass through the competency levels of Benner's model [20-21]

2. Methodology

This study adopted a quantitative approach and descriptive- nonexperimental research design to gather information on knowledge and skills of partogram among midwifery students in a selected Nursing Institution. Sample was selected by simple random sampling technique. All the final year students were considered for study participants. The sample size was 76. Permission was obtained from the concerned authority and consent was obtained from individual students. The Inclusion criteria for the study were students those who are willing to participate and those who were present during the period of data collection.
Development and description of the tool
A structured standardized tool which is used to assess the knowledge on skills on partogram among midwifery students,

Table No 1: Skills –parameter tool used to assess the knowledge on skill of the partogram scoring key

skills	scores	percentage
Adequate skills	10-14	More than 75-100
Moderate adequate skills	9-5	51-75
Inadequate skills	4-1	25-50

This tool contains a standardized 14 parameters used to mark during labor initiation period till the delivery of the baby. Each item/ parameter has scored one if it has correctly identified, on the other way it has given score "Zero" when made wrong. The total score was 14. The scores interpreted as Adequate skill, moderately adequate and Inadequate skills as per the scores awarded (shown in the above table-1)

Validity -The content validity of the questionnaire was pre-tested by the researcher's supervisor, an expert in the field and the researcher herself who is a registered midwife, and thus familiar with the area of research. Also, validity concerned knowing whether there is evidence to support the assertion that the methods are really measuring the variables that they are supposed to measure. Hence, the construct validity of the present study was ensured by carrying out a pre-test of the instrument prior to data collection process. The tool was validated by the experts in the field.

Informed consent and participant rights

Participants in this study gave their consent to participate in the study after getting explanations about the purpose of the study as detailed in the information sheet. This consent was voluntary and was based on an adequate understanding of the study. Participants were informed of their rights to withdraw from the process at any stage of the project. In order to give participants a clear understanding of the study, the following was provided to them:

- Information statement
- Verbal overview of the study by the investigator handing out the paper questionnaires.

Participants were informed of the nature and significance of the study and assured that no harm will come to them by participating in the study. They were informed about the purpose of the study, and confidentiality and anonymity were ensured by numbering the questionnaires and excluding participant names in the questionnaires. Questionnaires and consent forms were filed separately. Participants' names were not linked to any questionnaire. The participants were informed that their names would not be used in any report, presentations or publications from this study.

Methods of data collection

Data collection tool is the modified WHO Partoghaph used as a tool followed by providing self-structured questionnaire and a scenario was given to each and every student individually to assess how they plot the partograph. The researcher was explained about the questionnaire followed by each parameter. The case scenario has shown through the PPT and students were asked to mark in the Partograph. The researcher individually collected the data from the students. It took around 30 mins.

Plan for data analysis

In order to learn the Statistical Package for Social Sciences (SPSS 22.0) which was used to capture and analyze data. All 76 completed questionnaires were captured with SPSS version 22.0. After data collection, the researcher proceeded with data entry, followed by data cleaning as well as data screening, to ensure that there were neither errors nor missing data. Data were analyzed in univariate analysis was used to summarize data in terms of frequency distributions of the variables under study (22).

3. Results and findings

The results of the current study. Highlights that all the students were in the age of 20 t0 22 yrs, final year nursing student. A total of 76 students participated in the study. Case scenario questionnaires were distributed to all the midwifery students. All parameters in the questionnaire were fully completed by all the participants and thus giving a response rate of 99.99%. Data from (N=76) self-administered questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS) version 22. After data entered, data cleaning and screening were done to ensure that there were neither errors nor missing data. The results are presented in terms of frequencies, the percentage using tables and graphical displays.

Organization of data – Data were organized into three sections.

Section A: Percentage distribution of knowledge on skills on partogram among midwifery students
Section B: Percentage distribution of the challenges facing midwifery students regards to utilization of partogram

A. To assess the skills used by the midwifery students in partogram

The study results of the skills used by the midwifery students were, the partograph tool contains 14 parameters, and each and every parameter explained detail with its distribution of percentages. The below-given table shows that the representations of data in parameters.

Table No 2: Shows the skills used by the midwifery students the representation of data

n=76

SN	Parameters	Frequencies(n)	(%)
1	Demographics		
	Not done	0	0
	Partially done	6	7.89
	Fully done	70	92.10
2	Fetal heart rate		
	Not done	0	0
	Partially done	0	0
	Fully done	76	100
3	Nature of liquor		
	Not done	0	0
	Partially done	16	21.05
	Fully done	60	78.94
4	Moulding		
	Not done	40	52.63
	Partially done	14	18.42
	Fully done	22	28.94
5	Cervical dilatation		
	Not done	40	52.63
	Partially done	14	18.42
	Fully done	22	28.94
6	Head descent		
	Not done	12	15.78
	Partially done	12	15.78
	Fully done	52	68.42
7	Hours		
	Not done	16	21.05
	Partially done	28	36.84
	Fully done	32	42.10
8	Time		
	Not done	8	10.52
	Partially done	39	51.31
	Fully done	29	38.15
9	Contraction		
	Not done	0	0
	Partially done	18	23.68
	Fully done	58	76.31
10	Oxytocin U/L Drops/Minute		
	Not done	16	21.05
	Partially done	40	52.63
	Fully done	20	26.31
11	Drugs And I.V. Fluids		
	Not done	13	17.10
	Partially done	35	46.05
	Fully done	28	36.84
12	Maternal BP and Pulse		
	Not done	0	0
	Partially done	0	0
	Fully done	76	100
13	Temperature		
	Not done	0	0
	Partially done	0	0
	Fully done	76	100
14	Urine for Amount, Protein, Acetone		
	Not done	0	0
	Partially done	0	0
	Fully done	76	100

The above table highlights that the parameters related to vital signs like FHR, Maternal Temp, BP and Urine amount, presence of protein etc all mot all

76(100%)students had completed whereas other paramters like oxytocin drops/min, Drugs and IV fluids, Time etc are partially done by 40(52.63%), 35(46.05%), 39(51.35%) students and the important parameter like cervical dilatation, Moulding, Head descent and hours of contraction were not done by 40(52.63%), 40(52.63%), 12(15.78%) & 16(21.05%) respectively. the above result indicates that teachers need to emphasize to demonstrate and teach properly how to plot the important indicators for the progress of labor in the partograph.

B. Characteristics of partogram utilization and its challenges

Table No 3: Shows the use of partogram and its challenges

n=76

Variables	Frequencies (n)	%
Is Partogram available in the maternity ward?		
Yes	76	100
No	0	0
Is it needed to monitor labor using the partogram?		
Yes	76	100
No	0	0
How often do you use the partogram?		
Routinely	59	77.63
Rarely	17	22.36
Partogram used in obstetrical review		
Agree	58	76.31
Disagree	18	23.68
Evaluation of partogram used by the midwifery students		
Properly used	62	81.57
Not properly used	14	18.42
Practices of partogram by the midwifery students are needed in labor room		
Agree	76	100
Disagree	0	0

The above Table highlights that all the students 76(100%) were agreed that partograph is needed to monitor but while related to use of partograph 59(77.63%) said they used routinely and 17(22.36%) said they use rarely and 62(81.57%) said they know to use properly whereas 14(18.42%) agreed that they don't use properly. This result shows there is a lack in the utilization of partograph though there is awareness. The main factor which influences not to use was lack of interest as verbalized by the students.

4. Discussion

The present study focused on nurses and midwives' knowledge and use of partogram to gain an insight into how they monitorpartograph. The results indicate that 100% of all of the respondents (76) had moderately adequate skills regarding the knowledge on partogram. Students knowledge on the identification of important parameter was lacking indicates through training and practical exposure is required in order to maximize the utilization and proper use of the partogram.With respect to the professional qualification of respondents in the present study, the findings showed that all midwifery students, who participated in this study 100% were represented as utilization of partogram in labor is essentials but while coming to practical use it is lacking. The present study suggests regular use of partogram in labour should be made as mandatory, and then only the effective utilization will occur. The midwifery students who participated in this study reported the need to develop managerial guidelines/ protocols on how to use the partogram to ensure its proper utilization.

Further in relation to factors influencing not to use partograph shows that their lack of interest in the ward settings as an inducing factor to develop a student to not properly use of partogram by the midwifery students. Their percentage was 62(81.57%) were properly used and 14(18.42%) were not properly used as partogram. The findings of this study almost similar to the study conducted by Udeme Asibong, 2013 on the use of the partograph in labor monitoring: a cross-sectional study among obstetric caregivers highlights that majority of the respondents (70.8%) had good general knowledge of the partograph but lacked detailed and in-depth knowledge of the component parts of the partograph. Knowledge of partograph (χ^2=12.05, P=0.0001) and partograph availability (χ^2=56.5, P=0.0001) had a significant relationship with its utilization (23).

Conclusions

To this end, the purpose of this study was to describe factors affecting the utilization of partogram among Midwifery students, in the labour wards of Puducherry this also responds to the conceptual framework guiding the present study which is Patricia Benner's model of nursing practice suggesting that knowledge and clinical skills of nurses and midwives to use the partogram should improve as the nurse and midwife pass through the competency levels of Benner's model which are in ascending order; novice, advanced beginner; competent, proficient and expert.

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