A Study to Assess the Feasibility by Implementing E-Learning Partograph Tool among Final Year Students at Himalayan Institute of Nursing, Kala-Amb, District Ambala (Haryana)

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Abstract

Nurses are the heart of the health care system. They develop a plan of care, working collaboratively with physicians, therapists, the patient's families and other team members that focus on treating illness to improve quality of life. This study was conducted to enhance the knowledge of final year students of BSc Nursing and GNM who are the future nurses regarding partograph because they have to implement their partograph-related knowledge. A sample of 64 students of BSc Nursing and GNM was imparted training in partograph. The assessment after the training revealed that majority of students (42.18%) students had average knowledge regarding E-learning partograph.

A partograph or partogram is a composite graphical record of key data (maternal and foetal) during labour entered against time on the single sheet of paper. Partograph include some measurements which includes statistics such as cervical dilation, foetal heart rate, duration of labour and vital signs.

The components of partograph are: Patient identification where we note patient's details like name, age, marital status, gravid and parity; Time, which was recorded at the interval of one hour. Zero time for spontaneous labour is time of admission in the labour ward and for induced labour is time of induction. Third component is foetal heart rate, this is recorded at every 30 minutes; the fourth component is related to the condition of membranes and colour of liquor, "I" stands for intact membrane, "C" for clear and "M" stands for Meconium-stained liquor. The fifth component is related to cervical dilatation and descent of head; sixth is uterine contraction; it is a graph of squares in vertical columns and shaded according to duration and intensity. The seventh component is drugs and fluids, 8th is maternal blood pressure and pulse rate, it is recorded in vertical lines at the interval of 2 hours and pulse rate, it is also recorded in vertical lines at the interval of 30 minutes. The 9th component is oxytocin, its concentration it is noted down in upper box; while dose is noted in lower box. The 10th component is related to urine analysis and temperature record.

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There are many advantages of partograph. It provides information on single sheet of paper at a glance related to foetal condition, progress of labour and maternal condition. With the help of partograph we can do prediction of deviation from normal progress of labour. It will help in improvement of maternal morbidity, perinatal morbidity and mortality. It is easy to use.

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Objectives

The study had the following objectives:

1. To assess the feasibility of partograph among final year students at Himalayan Institute of Nursing, Kala-Amb, District Ambala (Haryana).
2. To assess the feasibility by implementing E-learning partograph tool among final year students at Himalayan Institute of Nursing, Kala-Amb District Ambala (Haryana).
3. To find out association between the feasibility after the implementation of E-learning partograph tool of final year students with selected socio demographic variables at Himalayan Institute of Nursing, Kala-Amb, District Ambala (Haryana).

Review of Literature

Rahman A et al (2019) conducted a descriptive study on feasibility and effectiveness of electronic with paper partograph on improving birth outcomes. A prospective crossover study design was used in the study. All pregnant women who delivered at study hospital were the study participants. Collected quantitative data was analysed using SPSS23 statistical software. Chi square tests were employed to test the association between exposure and outcome variables. The results showed that e-partograph user rate was higher than the paper partograph during both phases after adjusting for maternal age, parity, gestational age, religion, mothers, education, husband's education and fetal sex

Rajbir Kaur (2019) conducted a quantitative study with descriptive design to assess the knowledge regarding partograph among staff nurses in a tertiary care medical institute of Amritsar. Total 40 staff nurses working in obstetric and gynecological ward of SGRD hospital, Vallah, Amritsar were selected by convenience sampling technique. A self-structured questionnaire was used. The data was gathered and analysed by calculating the frequency, percentage, mean, mean percentage, standard deviation and chi square. The study concluded that 57.5 percent of staff nurses having average knowledge, 25 percent nurses having good knowledge and remaining, 17.5 percent staff nurses having poor knowledge regarding partograph.

Haymanot Mezmu et al (2017) conducted a cross-sectional quantitative study design to assess the health professional knowledge and use of the partograph in public health institutions in eastern Ethiopia. Multistage sampling with proportional to size allocation was used to recruit a total of 441 study participants. Self-administered questionnaire was used to collect data. Eight midwives were recruited and trained to facilitate the data collection activities. Data were entered into Epidata software and exported into SPSS (22.0) for analysis. Descriptive statistics, bivarate and multiple logistic regression were computed to determine proportions and significant association with knowledge and use of the partograph among health professionals.

Tesfay Hailu et al (2018) undertook a cross-sectional study on assessment of partograph utilisation and associated factors among obstetric care givers at public health institutions in central zones, Tigray, Ethiopia, which is located at 1028 km away from the capital city of Ethiopia, Addis Ababa and 245 km from Mekelle, which is the administrative city of the region. The study was conducted from October 2016 to April 2017. Institutional cross-sectional survey was conducted using single proportion formula by assuming 5 percent marginal error and 95 percent confidence interval. The study conducted in Addis Ababa city in which the proportion of utilisation of partograph among obstetric care givers were 5 percent, 3 percent. By adding 5 percent for non-respondent the final sample size was taken as 220. Although World Health Organisation recommends utilisation of partograph for all laboring women, greater than one fourth of obstetric care givers in this study had not used partograph. Age, sex, level of education and presence of training were significantly associated with utilisation of partograph.

Methodology

In present study, quantitative non-experimental research approach was adopted with descriptive survey design to collect the data. The study was

Table 1: Frequency and percentage distribution of demographic variables of BSc final year students (N=64)

Socio-demographic variables	Frequency (f)	Percentage (%)
1. Age in years		
<20	20	31.25
21-22	40	66.5
23-24	3	4.68
>25	1	1.56
2. Gender		
Male	4	6.25
Female	60	93.75
3. Level of students		
BSc. 4th year	41	64.06
GNM 3rd year	23	35.93
4. Marital status		
Married	3	4.68
Unmarried	61	95.31
5. Having knowledge regarding partograph		
Yes	59	42.18
No	5	57.81
6. Experience of labour room		
Yes	21	32.81
No	43	67.18
7. Previous knowledge regarding computer		
Yes	59	92.18
No	5	7.81

conducted in February 2020 at Himalayan Institute of Nursing, Kala-Amb. Convenient sampling technique was used to obtain an adequate sample size. The sample comprised of 64 final year students. With the help of this link: https://www.glowm.com/resource/tutorials/title/who-partograph---a-comprehensive-programme-/resource_doc/1615, the students were taught about E-learning partograph and exercise test was done. The tool developed and used for data collection were structured knowledge questionnaire and WHO E-learning partograph exercise which is comprised of two sections.

Section-I comprised of 7 demographic variables to collect the person data of final year students (age, gender, final year students, marital status, having knowledge regarding partograph, having experience of labor room and any previous knowledge regarding computer) and Section-II comprised of Part-A related to administration of WHO E-learning partograph tool, Part-B related to progress of exercise, Part-C related to the results.

Ethical Consideration: Permission of research study was taken from the Principal of Himalayan Institution of Nursing Kala Amb for conducting pilot study. After explaining the objectives of the study consent was taken from each student.

Assumptions

1. The E-Learning partograph tool may be effective method of learning for final year students.
2. The E-Learning partograph tool may be feasible among final year students.

Results

Table 1and 2 depict that:

- Out of 64 students, majority i.e. 66.5 percent were in the age group 21-22 years, 31.25 percent in the age group less than 20 years, 4.68 percent students in 23-24 years and 1.56 percent students were in the age group more than 25 years.
- Majority of the students (93.75%) were female and 6.25 percent were boys.
- Majority of the students (64.06%) were from BSc Nursing 4th year and 35.93 percent students from GNM 3rd year.
- Majority of the students (95.31%) were unmarried and 4.68 percent students were married.
- Sizable number of the students (57.81%) students had no knowledge regarding partograph and 42.18 percent students had no knowledge regarding partograph.
- About 67.18 percent students had no experience of labour room and 32.81 percent students had experience of labour room.
- Vast majority of the students (92.18%) had previous knowledge regarding computer and 7.81 percent students had no previous knowledge regarding computer.

In the e-learning partograph, out of 64 students' 84 percent students were able to complete the first exercise; also same percent of students were able to complete the second exercise; foetal heart rate on the partograph. Eight five percent students were able to complete the third exercise: Moulding on the partograph; 79 percent students were able to complete the fourth exercise: amniotic fluid on the partograph; 64 percent students could complete the fifth exercise: cervical dilation on the partograph; 56 percent students were able to complete the sixth exercise: head descent on the partograph; 60 percent students were able to complete the seventh exercise: dilatation and descent on the partograph;

Table 2: Frequency and percentage distribution of exercise of BSc Final year students (N=64)

S.No	Content	Frequency (f)	Percentage (%)
1	When to start partograph	54	84
2	Fetal heart rate on the partograph	54	84
3	Molding on the partograph	55	85
4	Amniotic fluid on the partograph	51	79
5	Cervical dilation on the partograph	41	64
6	Head descent on the partograph	36	56
7	Dilation and descent on the partograph	39	60
8	Contraction on the partograph 1	48	75
9	Contraction on the partograph 2	39	60
10	Maternal data on the partograph	41	64

Table 3: Frequency and percentage distribution of progress of exercise of BSc final year (N=64)

Progress of exercise	Frequency (f)	Percentage (%)	t-Value, df, p-value
Poor (0-30)	8	12.5	**2.317, 2, 0.146***
Average (40-60)	17	26.5	
Good (70-100)	39	60.9	

*NS= non-significant, *Significant p < 0.05.*

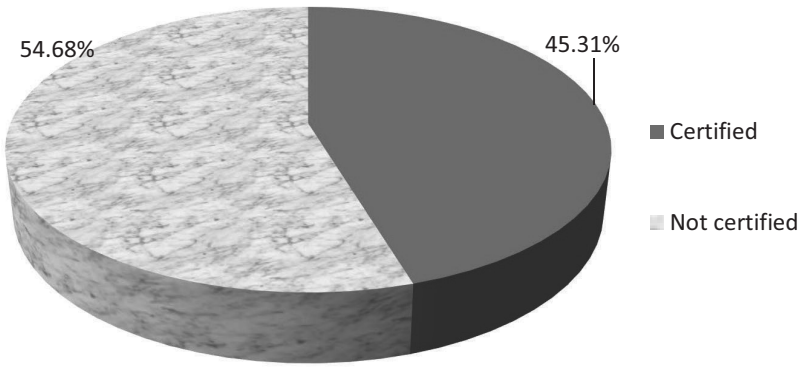

Fig 1: Pictorial presentation of the progress of exercise

75 percent students were able to complete the eighth exercise: contraction on the partograph 1; 60 percent students were able to complete the ninth exercise: contraction on the partograph 2; and 64 percent students could complete the tenth exercise: maternal data on the partograph. The frequency of the data shows that there is difficulty in completion of cervical dilation on the partograph, head descent on the partograph, dilation and descent on the partograph, contraction on the partograph 1&2 and maternal data on the partograph.

Table 3 depicts that out of 64 students, 12.5 percent had poor progress of exercise, 26.5 percent students had average progress of exercise, 60.9 percent students had good progress of exercise. The t-value is 2.317, degree of freedom is 2 and the significant value is 0.146. Significant value is less than 0.05.

Figure 1 shows the e-learning partograph exercise; out of 64 students, 45.31 percent students were certified and 54.68 percent students were not certified.

Discussion

This study is supported by Tina Lavender et al (2013) who conducted a pilot quasi-experimental study to determine the feasibility of implementing a partograph E-learning tool for student midwife training in Nairobi. A semi structured questionnaire was used. They used pre- and post-WHO partograph E-learning tool.

The finding showed that 92 (88%) students participated. Students expressed positive views about the E-learning tool. However, the mean post-intervention score (27.21) was less than half of the maximum obtainable score. There was some improvement in test scores; year three mean score pre-intervention was 21.39 (SD 5.72), which increased to 25.10 (5.41) post-intervention (paired-t=3.47, p=0.001); year four mean score pre-intervention was 24.39 (5.98) which increased to 29.30 (6.77) post-intervention (paired t=3.85, df=91, p<0.001). In the post-test, year four students scored higher than year three students (unpaired t=3.28, df=90, p=0.001). Students were unable to plot cervical dilation correctly, once established labour has been confirmed.

Recommendations

On the basis of findings, it is recommended that:

1. The study can be conducted on labour room staff.
2. A study may be undertaken with larger sample for better results.
3. A study can be conducted on paper partograph.

Nursing Implications

The findings of the study are implicated in different areas such as Nursing education, Nursing research, and Nursing administration and in clinical areas. The findings of the study have several implications.

Nursing Administration

1. With the findings of the study, nurse administrator can encourage staff nurse to participate in further researches.
2. The nurse administrator can be deputed to workshops, conferences and special courses and also in in-service education programme related to use of partograph.

Nursing Research

1. Extensive research is needed in the area of strategies for educating nurses on partograph for increasing knowledge.
2. Findings of the study can provide insights and baseline data for educating nursing students regarding e-learning partograph.

Nursing Education

1. Based on the findings of the study, evidenced-based practices can be initiated in various institutions.
2. The nursing teacher can use the result of the study as an information illustration for the students.
3. Nursing education should help in inculcating values and sense of responsibility in the students. This is an essential part of nursing.

Nursing Practice

The nursing teacher can educate the nursing students regarding the partograph through E-learning process.

Conclusion

At the time of conduct of this research, final year students of Himalayan Institute of Nursing were having only theoretical knowledge about E-learning partograph and some basic labour experience. After our E-learning teaching and assessment, majority of students were having average knowledge (42.18%) regarding E-learning partograph.

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