

© 2014, TextRoad Publication

Comparing the Pre - and Post - Test Level of Knowledge on Partogram among Fourth Year B.Sc. Nursing Students

Maryam Ghanbari Andarieh¹, Farideh Rezaei Abhari^{2*}, Mitra Shabani³, Parvaneh Mirabi⁴

¹ PhD scholar Fertility and Infertility;FatemehZahra Infertility and Reproductive Health Research Center, Babol University of Medical Sciences,Babol - Iran

²M.Sc. Midwifery .Faculty of midwifery,Nasibeh Nursing and Midwifery Department, Vesal Street, Amir Mazandarani Boulevard, Sari - Mazandaran Province - Iran

³M.Sc. educational management; Babol University of Medical Sciences, Babol.Iran

⁴M.Sc. Midwifery; Department of Midwifery, Islamic Azad University, Zanjan – Iran

Received: November 30 2013

Accepted: January 17 2014

ABSTRACT

The present study was formulated in order to compare pre- and post-test knowledge on partogram among fourth year B.Sc. nursing students. The target population of the study was 4th year B.Sc. Nursing student in Karnataka College of Nursing at Bangalore. A total number of 50 subjects were chosen for the study. A planned teaching program was selected for the study. In the present study the following tools were used (the first was consisted of 5 items related to demographic data of the subjects such age, Sex, religion, and previous exposure to training, and previous knowledge on partogram; and the second was a self-administered questionnaire consisted of 50 items on knowledge about partogram).Paired t-test was adopted to ascertain whether there is significant difference in the mean knowledge score of pre- and post-test values.The results obtained from the present study indicated that there is a significant difference between the pre- and post-test knowledge scores of respondents.

KEYWORDS: knowledge on partogram – nursing students – pre- and post-test – Bangalore.

1- INTRODUCTION

The world health organization (WHO) recommends partograms with a four hours action line from alert line. Denoting the timing of intervention for prolonged labor recommends earlier intervention to allow for referral[4].

Adequate use of a partogram requires adequate number of skilled health workers with a positive attitude towards its use especially midwives at various level of health care and actual availability of the partogram tools at all times[3].

The WHO version of partograph is a most simplified version. It helps in correlating the fetal condition, strength of uterine contraction, and progress of labor very clearly. Only issue is to learn to note the cervical dilation properly. The transition from antenatal care to management of labor is critical for both the mother and the fetus [2].

Early detection of abnormal progress of labor and the prevention of prolonged labor significantly reduce the risk of postpartum hemorrhage and sepsis and eliminate obstructed labor, uterine rupture, and thereby reduce the maternal mortality [5].

The use of a partogram for the management of labor has been shown to be beneficial in that it clearly differentiates normal from abnormal progress in labor and identifies women likely to require intervention [5].

Skilled management of labor by using a partograph, a simple chart for recording information about the progress of labor and the condition of a woman and her baby during labor, is key to appropriate prevention and treatment of prolonged labor and its complications. Following the recommendation of the World Health Organization (WHO), the Maternal and Neonatal Health (MNH) Program promotes the use of the partograph to improve the management of labor and to support decision-making regarding interventions. When used appropriately, the partograph helps providers identify prolonged labor and know when to take appropriate actions [1].

Each year, 8.1 million infants die and millions of them suffocate, suffer convulsion and mental paralysis and bear physical or mental disorder for the rest of their lives. Because of dystocia, the rate of infant mortality rises from 47-294 in every 1000 births. The world health organization (WHO) has announced that deaths caused by suffocation and injuries during delivery are for the cause of more than one third of infant mortality. This organization also states that dystocia increase the chance of death at the time of birth by 5 folds [6].

* Corresponding Author: Farideh Rezaei Abhari, M.Sc. Midwifery .Faculty of midwifery,Nasibeh Nursing and Midwifery Department, Vesal Street, Amir Mazandarani Boulevard, Sari - Mazandaran Province – Iran Far2248@yahoo.com Time consuming, delivery process administration of labor induction and oxytocin dosage and frequency of vaginal exams are the important reason for using partogram (Wacker et at 1998). Preventing material mortality program indicates that a partogram will show the exact time of membrane rapture and is considered as an early warning systems, which will help to make on time decisions[6].

During the clinical experience in maternity hospital, the investigators have observed that nurse/midwives for filling the partogram had problem and they were not able to draw adequate and correct partogram. The patient with in adequate partogram had increased caesarean section rate, instrumental delivery and APGAR score less than 7 at one minute. By providing knowledge on the above information, complications can be prevented. Hence the investigators strongly feel that there is a need for conduction a planned teaching program on partogram.

2- METHODOLOGY

The selection of research approach is the basic procedure for the research of enquiry. The research approach helps the researcher to determine the data to collect and analyze the data. It also suggests possible conclusions to be drawn from the data. In view of the nature of the problem selected, the present study is to assess the effectiveness of planned teaching program on partogram. An evaluative approach was considered appropriate In order to accomplish the objectives.Research design incorporates the most important methodology decisions that a researcher makes in conducting a research study. It depicts the overall plan for organization of scientific investigation. The research design selected for the study was a pre-experiment one group pre-test post-test design.

Table 1:	The design	used in	the	present	study

Purposive sampling	Pre-test	Intervention	Post -test		
4 th year B.Sc. nursing student of Karnataka College of Nursing at Bangalore	Knowledge test	Planned teaching program	Knowledge test		
	01	Х	O2		

O1- Knowledge test for 4th year B.Sc. nursing student regarding on partogram (Pre-test).

O2 -Knowledge test for 4th year B.Sc. nursing student regarding on partogram (Post-test)

Planned teaching program

X- Teaching strategy on partogram.

3. Variable under study

Independent variable (IV) :

Dependent variable (DV) : Performance in Pre Test

Performance in Post Test

Attribute variable (AV) : personal characteristics which include Age,

Sex, Religion, previous Exposure to training

and previous knowledge on filling partogram.

The study was conducted in Karnataka College of Nursing at Bangalore. Familiarity with the setting and availability of the required sample were also considered while selecting the study group.

The target population of the study was 4th year B.Sc. Nursing student in Karnataka College of Nursing at Bangalore. A total number of 50 subjects were chosen for the study.

The sample consists of a population selected to participate in a research study. In the study Non- probability convenient sampling method was used for selection of subjects.

Inclusion criteria were as follows:

- I. Students of 4th year B.Sc. nursing who are willing to participate in the study.
- II. Student who can speak and understand English.
- III. Who are available at the time of data collection?

The exclusion criterion is as follows: Students who are not available at the time of data collection.

A planned teaching program was selected for the study. It was considered to be the most appropriate instrument to elicit the response from subjects who are not able to read English.

It helps the investigators to selects most suitable method of knowledge assessment tool.

A planned schedule was prepared to assess knowledge regarding partogram.

In the present study the following tools were used:

Part-I: Consisted of 5 items related to demographic data of the subjects such age, Sex, religion, and previous exposure to training.

Part-II: Self-administered questionnaire consisted of 50 items on knowledge about partogram each items of the schedule has one correct answer, every correct answer would fetch one mark, and total score of the knowledge schedule is 50.

Each correct answer was given a score of "one' mark and wrong answer 'zero' score.

 $percentage = \frac{obtainedscore}{totalscore} \times 100$

To find the association with the selected variable, the knowledge aspect was categorized 1into three groups.

Below 50% = Inadequate Knowledge

51-75% = Moderate Knowledge

Above 75% = Adequate Knowledge

The prepared blue print of the tool along with objectives of the study was submitted to the experts of content validity. Six experts from the Nursing faculty, one Obstetrician & gynecologist and one statistician validated the tool content. The suggestions given by them were incorporated and tool was modified.

The final tool got its shape after modification based on the opinions of the guide. It consisted of demographic data 5 items and knowledge 50 items which has 100 % agreement.

The tool, after validation was subjected to test for its reliability. The structured interview schedule was administered to 50 samples. The reliability of the tool is computed by using split half kari person's correlation formula (raw score method). The reliability of split half test was found by using Karl pear son correlation. Spearman Brown's prophecy formula was used to find out the reliability of the full test.

 $R = \frac{2r}{1+r}$

Where R- reliability co -efficient of correlation of whole test

r-reliability co - efficient of correlation of half test

The reliability co -efficient on knowledge found to be 0.93(alpha), 0.86 (split half) and validity co-efficient worked to be 0.925. Revealing the tool is feasible for administration for the main study. Since the knowledge reliability co-efficient for scale is r>0.70. The tool was found to be reliable and feasible.

The reliability co-efficient of correlation of whole test (alpha) was 0.93

The reliability co-efficient of correlation of half test (split-half) was 0.86

The test-retest reliability was 0.72

While interpreting the reliability R value, $R \ge 0.70$ reflects good reliability.

The reliability co-efficient on knowledge found to be 0.93 and validity co-efficient worked to be 0.925 revealing the tool is feasible for administration for the main study. Since the knowledge reliability co-efficient for scale r>0.7 the tool was found to be reliable and feasible.

If correlation > .80 for variables positively related the data is said to have good concurrent validity The validity co-efficient worked to be 0.925 which means the correlation is > .80, reveling the tool is feasible for administration for the main study.

Table 2: Symmetric measures							
Value Approx. Sig.							
Nominal by Nominal	Phi	.925	.036				
	Cramer's V	.463	.036				
N of Valid	Cases	50					

The planned teaching program was developed based on the review of the related research/non-research literature and the objective stated in the blue print.

- The following steps were adopted to develop the planned teaching program.
 - Development of content blue print.
 - Development of planned teaching program.
 - Establishment of content validity of planned teaching program. •
 - Pre-test of planned teaching program.

Formal prior permission was obtained from Karnataka College of nursing at Bangalore. The data was collected from 01.11.10 to 30.11.10. The data obtained was analyzed in terms of achieving the objectives of the study using descriptive and inferential statistics. Statistical analysis of data includes:

- Entry of data in master sheet.
- Frequency and percentage to be used for analysis of demographic characteristics.
- Calculation of mean, standard deviation of pre-test and post-test scores.

• Application of paired 't' test to ascertain whether there is significant difference in the mean knowledge score of pre-test and post-test values.

3- RESULTS

The data was entered in a master sheet for tabulation and statistical processing. The findings have been presented under the following headings:

Section A – Distribution of respondents according to demographic variables

Section B – Component-wise distribution of scores during pre-test and post-test

Section C – Association between pre-test and post-test knowledge scores

3-1- Distribution of respondents according to demographic variables

Table 3: Distribution of respondents based on age

Age (yrs)	No. 4 th Year Student Subjects	Percent
19-22	42	84
23-26	8	16

Distribution of sample based on age reveals that out of 50 subjects, the highest percent 42% were in the age group of 19-22 years where as the lowest percent 8% were between 23-26 years.

Table 4: Distribution of respondents based on sex

Sex	No. of 4 th Year B.Sc Nursing Student	Percent						
Male	18	36						
Female	32	64						
Total	50	100						

The findings from the above table and figure reveal that majority of the subjects 32(64%) were female and only 18(36%) were male.

Religion	No. of 4 th Year B.Sc. Nursing Student	Percent
Hindu	37	74
Muslim	2	7
Christian	10	20
Other	1	2
Total	50	100

Table 5: Distribution of respondents based on religion

It is Observed from the above table and figure that maximum respondents were Hindu 37 (74%) only 2 (4%) were Muslims and Christian being 20% from 10 subjects and other 1 (2%).

Table 6: Distribution of subjects based on previous knowledge on partogram

Previous knowledge	Frequency	Percent
Yes	6	12
No	44	88
Total	50	100

Data from the above table and figure depicts that maximum number of subjects, 44 (88%) did not receive any previous knowledge. Whereas only 6 (12%) of them had received knowledge.

Table 7: Distribution	of respondents	based on	source of teaching
-----------------------	----------------	----------	--------------------

Source of Teaching	No. of Subjects	Percent
Workshop / training	2	4
No exposure	48	96
Total	50	100

Observation made from the above table and figure reveal that majority of the subjects, 48 (96%) of them did not receive any teaching from any source at all, whereas only 2 (4%) received teaching from workshop/training.

1 . .

3-2- Component-wise distribution of scores during pre-test and post-test

_

Table 8: Component-wise analysis from pre-fest knowledge scores								
Component-wise (Pre-test)	Max	Range	Median	Mean	SD	Mean %		
•	Score	Ŭ						
Knowledge regarding general								
information of partogram	5	4	2	2.4	1.07	20%		
Knowledge regarding meaning of								
partogram	4	4	2	2.36	1.21	21.45%		
Knowledge regarding interpreting								
partogram chart	4	4	2	2.32	0.84	19.33%		
Knowledge regarding function of								
partogram	4	4	1	1.28	1.26	14.5%		
Overall pre-test knowledge scores	14	8	10	9.44	2.02	18.8%		

The knowledge of the 4th year B.Sc. Nursing Student of Karnataka College during the pre-test was assessed under the following different aspects as given in table 6.

- 1. Knowledge regarding general information of partogram this component comprised of a maximum score of 5. The range is 4. The subjects had a mean of 2.40 with a standard deviation of 1.07. They had a mean percentage of 20% on knowledge regarding partogram.
- 2. Knowledge regarding Meaning of Partogram This component consists of a maximum score of 4 in which the knowledge score ranged between1-4. The mean score is 2.36 with standard deviation of 1.21. They had 21.45% mean percent of knowledge on meaning of partogram.
- 3. Knowledge regarding interpreting partogram chart this component consists of a maximum score of 4. The knowledge score range is 4. The mean is 2.32 with standard deviation of 0.84. The mean percentage of knowledge regarding interpreting partogram chart was 19.33%.
- 4. Knowledge regarding function of partogram this component consists of a maximum score of 4 in which the knowledge score ranged from 4. The mean score is 1.28 with standard deviation of 1.16. The mean percent of knowledge on function of partogram was 14.5%.

The overall pre-test knowledge scores consisted of a maximum score of 14. The scores ranged from 8. The mean score was 9.44 with SD if 2.02. The mean overall pre-test knowledge score was 18.8%.

Component-wise (Post-test)	Max	Range	Median	Mean	SD	Mean%
Component-wise (Post-test)	Score	Runge	Wiedlah			
Knowledge regarding general information of partogram	12	4	10	10.26	0.92	85.5%
Knowledge regarding meaning of partogram	11	4	9	8.9	1.11	81%
Knowledge regarding interpreting partogram chart	11	4	10	9.82	0.92	81.83%
Knowledge regarding function of partogram	8	2	7	7.14	0.61	89.25%
Overall post-test knowledge scores	45	8	43	42.10	2.12	84.20%

Table 9: Component-wise analysis from post-test knowledge scores

The knowledge of the subjects during the post test was assessed under the following different aspects as given in table 9.

- 1. Knowledge regarding general information of partogram this comprised of a maximum score of 12. The range was 4. The subjects had mean of 10.26 with a standard deviation of 0.92. They had a mean percentage of 85.5% on knowledge regarding partogram.
- Knowledge regarding Meaning of partogram this compromised of a maximum score of 11. The range was

 The subjects had a mean of 8.9 with a standard deviation of 1.11. They had a mean percentage of 81% on
 knowledge regarding meaning of Partogram.

- **3.** Knowledge regarding interpreting partogram chart this comprised of a maximum score of 11. The range was 4. The subject had a mean of 9.82 with a standard deviation of 0.92. They had a mean percentage of 81.83% on knowledge of interpreting partogram chart.
- **4.** Knowledge regarding function of partogram this comprised of a maximum score of 8. The range was 2. The subjects had a mean of 7.14 with standard deviation of 0.61. They had a mean percentage of 89.25% on knowledge regarding function of partogram.

The overall post – test knowledge scores consisted of a maximum score of 45 which ranged 8. The mean score is 42.10 with SD of 2.12. The mean overall post-test knowledge score was 84.20%.

Table 10. Results of statistical data analysis of pre-test and post-test knowledge scores (component-wise)								
		Pre-test			Post-test			Percentage of
Component wise (Pre-test)	Max.							enhancement
	Score	Mean	SD	Mean%	Mean	SD	Mean%	
Knowledge regarding general								
information of partogram		2.40	1.07	20%	10.26	0.92	85.5%	65.5%
Knowledge regarding meaning								
of partogram		2.36	1.21	21.45%	8.90	1.11	80.90%	59.45%
Knowledge regard of								
interpreting partogram chart		2.32	0.84	19.33%	9.82	0.92	81.83%	62.5%
Knowledge regarding of								
function of partogram		1.28	1.16	16%	7.14	0.60	89.25%	73.25%
Overall knowledge scores								
		9.44	2.02	18.88%	42.1	2.12	84.2%	65.32%

Table 10: Results of statistical data analysis of pre-test and post-test knowledge scores (component-wise)

The results of statistical data analysis in table 8 shows that in each of the question area, the mean percentage of the knowledge score of the subjects in the post-test score has increased significantly when compared to the pre-test knowledge score. The mean percentage enhancement values of the knowledge scores present in the last column shows that there has been an minimum increase of 59.45% in the question area about meaning of partogram, whereas the enhancement of mean percentage was 73.25% in the question area about function of partogram. The data shows that planned teaching program was effective in increasing the knowledge score of the subjects with the maximum enhancement in the area of knowledge regarding function of partogram.

Table 11. Levels of pre test scores based on unreferit components								
	<u><</u> 50%		50 - 75%		> 75%		Total	
Pre-test								
	No.	%	No.	%	No.	%	No.	%
Knowledge regarding general information of								
partogram	32	64%	12	24%	6	12%	50	100%
Knowledge regarding meaning of partogram								
	28	56%	10	20%	12	24%	50	100%
Knowledge regard of interpreting partogram chart								
	28	56%	20	40%	2	4%	50	100%
Knowledge regarding function of partogram								
	40	80%	8	16%	2	4%	50	100%
Overall knowledge scores								
	6	12%	38	76%	8	16%	50	100%

Table 11: Levels of pre-test scores based on different components

The analysis of the levels during pre-test reveals the following observation.

- 1. Knowledge regarding general information of partogram Among the 50 fourth years B.Sc. Nursing Student 24% had moderately adequate knowledge 64% of them had inadequate knowledge and 12% had adequate regarding partogram.
- 2. Knowledge regarding meaning of partogram among the 50 fourth years B.SC.. Nursing studied, about 56% of them had inadequate knowledge, 20% had moderately adequate knowledge and only 24% had adequate knowledge regarding meaning of partogram.
- 3. Knowledge regarding Interpreting Partogram chart among the 50 fourth year B.Sc. Nursing Student studied, about 40% of them had moderately adequate knowledge, 56% had inadequate knowledge and only 4% had adequate knowledge regarding.
- 4. Knowledge regarding Function of Partogram among 50 subjects studied,80% of them had inadequate knowledge, 16% had moderately adequate knowledge and only 4% of them had adequate knowledge regarding.

In overall pre-test knowledge score among 50 4th year B.Sc. Nursing Students 76% of them had moderately adequate knowledge, 12% of them had inadequate knowledge and 16% of them had adequate knowledge.

	<50%		51 -	75%	> 75%		Total	
Pre-test								
	No.	%	No.	%	No.	%	No.	%
Knowledge regarding general information of general information of partogram	29	58%	18	36%	3	6%	50	100%
Knowledge regarding meaning of partogram	21	42%	25	50%	4	8%	50	100%
Knowledge regard of interpreting partogram chart	0	0	39	78%	11	22%	50	100%
Knowledge regarding function of partogram	6	12%	44	88%	0	0	50	100%

Table 12: Levels of post-test based on different components

The analysis of the levels during the post-test reveals the following observation:

- 1. Knowledge regarding General Information of Partogram among the 50 fourth yearB.Sc. Nursing Student studied, 58% had adequate knowledge, 36% had moderately adequately knowledge and only 6% had inadequate knowledge regarding partogram.
- 2. Knowledge regarding meaning of partogram among the 50 subject.42% had adequate knowledge, 50% had moderately adequate knowledge and only 8% had inadequate knowledge regarding meaning of partogram.
- 3. Knowledge regarding Interpreting partogram chart among the 50 fourth year B.Sc. Nursing Student studied, they had 22% adequate knowledge, 78% had moderately adequate knowledge and nobody had inadequate knowledge regarding interpreting partogram chart
- 4. Knowledge regarding Function of Partogram among the 50 fourth years B.Sc. Nursing Student studied, 12% had adequate knowledge, 88% had moderately knowledge and no one had inadequate knowledge regarding Function of partogram.
- 3-3- Association between pre-test and post-test knowledge scores

	Pre-t	est	Post-	Post-test				
	Mean	SD	Mean	SD	t-value	P-value	Inference	
Knowledge regarding general information of partogram	2.40	1.07	10.26	0.92	37.78	0.000	t(49)=37.78,p=0.000,a= .01.	
Knowledge regarding meaning of partogram	2.36	1.21	8.90	1.11	29.50	0.000	t(49)=29.50,p=0.000,a= .01.	
Knowledge regard of interpreting partogram chart	2.32	0.84	9.82	0.92	41.38	0.000	t(49)41.38,p=0.000, a=.01.	
Knowledge regarding function of partogram	1.28	1.16	7.14	0.60	31.27	0.000	t(49)31.27,p=0.000, a=.01.	
Overall knowledge scores	9.44	2.02	42.1	2.12	68.36	0.000	T(49)68.36,p=0.000, a=.01.	

Table 13: Comparison between different aspects of knowledge from pre-test to post-test

The improvement in the knowledge score of the 50 fourth year B.Sc. Nursing Student from the pre-test to post-test is tested for statistical significance using student paired "t" test and the result is considered significant wherever $p \le 0.05$.

- Knowledge regarding general information of partogram- It is observed from the study that in the aspect of knowledge regarding general information of partogram. The mean <u>+</u> SD during the pre-test is found to be 2.40<u>+</u> 1.07 whereas during the post-test it is 10.26 <u>+</u> 0.92. There is an increase of 37.78% of knowledge which is statistically highly significant (p<0.001).
- 2. Knowledge regarding meaning of partogram It is observed from the study that in the aspect of knowledge regarding meaning of partogram. The mean \pm SD during the pre-test is found to be 2.36 \pm 1.21 whereas during the post-test it is 8.90 \pm 1.11. There is an increase in knowledge of 29.50% of knowledge which statistically highly significant (p<0.001).

- 3. Knowledge regarding interpreting partogram chart It is observed from the study that in the aspect of knowledge regarding interpreting partogram chart. The mean <u>+</u> SD during the pre-test is found to be 2.32 <u>+0.84</u> whereas during the post-test it is 9.82 <u>+</u> 0.92. There is an increase in knowledge of 41.38% of knowledge which statistically highly significant (p<0.001).</p>
- 4. Knowledge regarding function of partogram It is observed from the study that in the aspect of knowledge regarding function of partogram. The mean <u>+</u> SD during the pre-test is found to be 9.44 <u>+</u> 2.02 whereas during the post-test it is 42.1 <u>+</u> 2.12. There is an increase of 68.36% of knowledge which statistically highly significant (p<0.001).</p>

4- DISCUSSION

The demographic variables selected were age, religion, sex, previous knowledge on partogram and previously attended classes or workshop on partogram. The pretest was conducted with 50 multiple choice questionnaires among 50 fourth years B.Sc. Nursing Student and their knowledge were assessed. In that 48 (96%) had inadequate knowledge and two (4%) had moderate knowledge in pretest. After administration of planned teaching program among all the 50 fourth year B.Sc. Nursing student, the post test was conducted. In post-test 49 (98%) had adequate knowledge and only one (2%) student had moderate knowledge regarding on partogram.

A study was conducted on assessment of partogram utilization in Benin. The findings revealed that one of the methods used to decrease maternal mortality and morbidity was the partogram. Partograms were used in 89% of all cases, in 13.3% of files all in rural areas partogram completion stopped before delivery. Over all completion was less good, of the 984 partograms examined, administration data were complete on only 20% and medical delivery data on 50% action taken before the alert line was crossed was incorrect in 48% of cases. (Particularly oxytocin use). The alert line was crossed in 13.5% of the cases but correct action always followed (artificial rupture of membranes, oxytocin administration). These results show very high coverage of partogram use.

A self-administered questionnaire was used to collect the data. A pre-experimental one group pre-test, post-test design was used to evaluate the knowledge of 50 samples (4th Year B.Sc. Nursing Student) on partogram using Non-probability convenient sampling technique. The pre-test was followed by implementation of planned teaching program and post-test was conducted after 7 days using same schedule to find out the effectiveness. The demographic data distribution of subjects who participated in the study has been presented from tables 1-5. The age - wise distribution pattern reveals that the maximum numbers of subjects 84% were from the age group of 19-22 years. The number of female who participated in the study was more 64% than male 36%. Majority of them belonged to Hindu community 74% and only 20% of them were Christians. Majority of the respondents 88% had no previous knowledge whereas only 4% of them received teaching from workshop.

These findings are supported by the study conducted on "Partogram" in India in which it was found that the female to male ratio of student in college was 2:1. The mean age for 4th year B.Sc. Nursing Student was 20.5years. The mean age among males was 20 years and that for females was 19 years. Component wise statistical analysis of Pre-test and Post-test mean knowledge score of respondents. The present findings revealed that the overall mean percentage of the pre-test knowledge score of the subjects was less (18.8%) with the individual component mean percentage values being as follows: 20% in the general information of partogram 21.45% in the aspect of meaning of partogram 19.33% in the aspect of interpreting partogram and 14.5% in the aspect of function of partogram.

In the present study, there is a significant increase in the mean percentage of knowledge score of each component in the Post-test when compared to the Pre-test mean percentage knowledge score. In the component of general information about the partogram mean percentage knowledge scores of pre-test are 20% and 85.5% respectively. The 4th Year B.Sc. Nursing Student had an inadequate knowledge about the partogram.

These findings are supported by a similar study on "knowledge of health worker in use of partogram in Nigeria "which demonstrated that only 76.9% of the whole nurse/midwife reported that they knew about partogram. In the present study the pre-test knowledge score is 20% and post-test knowledge score was 85.5% regarding general information of partogram. These results were similar to the above study. Another similar study conducted in Uganda to assess the level of knowledge of nursing students about using partogram reported that 69.9% nursing student had knowledge to use partogram. This suggested that health care providers need to be trained in the areas of information, education and communication, provision of guidelines and adequate resources is recommended. Thus, in the present study, in all the components, there is a good increase in the post test knowledge score of the respondents with significant enhancement of knowledge in each component indicating that the planned teaching program was effective in improving the knowledge level. The results of application of student paired t test to pre-test and post-test knowledge scores in Table 13 show that the computed p value, for all component is >0.05. Thus the results of t-test, at a level of significance of 5%, show that the improvement of the mean value of knowledge scores of post-test

when compared to the lesser values of pre-test are not by chance by due to the gain in knowledge because of planned teaching program. Therefore, there is significant difference between the pre-test and post-test knowledge scores of respondents is accepted.

Acknowledgment

The authors declare that they have no conflicts of interest in the research.

REFERENCES

- 1. Hamilton E, Platt R, Gauthier R, McNamara H, Miner L, Rothenberg S, et al. The effect of computerassisted evaluation of labor on cesarean rates. Journal for Healthcare Quality 2004;26(1):37–44.
- 2. Higgins JPT, Green S, editors. Cochrane Handbook for Systematic Reviews of Interventions Version 5.0.0 [updated February 2008]. The Cochrane Collaboration, 2008. Available from www.cochranehandbook.org...
- **3.** Lavender T, AlfirevicZ, Walkinshaw S. Effect of different partogram action lines on birth outcomes. Obstetrics & Gynecology 2006;108:295–302.
- **4.** Lavender T, Lugina H, Smith H. The partograph: A life saving tool for African Midwives. Tropical Doctor 2007;37(3):191–192.
- **5.** WindrimR, SeawardG,HodnettE,AkouryH, KingdomJ, Salenieks ME, et al.Arandomized controlled trial of a bedside partogram in the active management of primiparouslabor. Journal of Obstetrics and Gynaecology Canada: JOGC 2006; 29(1):27–34.
- 6. ZaidiS.Seekingsolutions.High maternal mortality in Pakistan. (ed) J CollPhysSurg Pak 1993;31:2-3.