Effect of Teaching Partograph on Knowledge related to Intra-partum Monitoring among Nursing Personnel

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Abstract

Prolonged labor, a leading cause of maternal deaths, may also lead to many maternal and neonatal infections in developing countries. Use of partograph, recommended by World Health Organisation, has been found to be an effective intervention for monitoring for reducing maternal and perinatal morbidity and mortality. This study assessed effectiveness of teaching use of partograph in 37 nursing personnel and found it very useful modality that can be adopted on wide scale.

Globally, the estimated maternal deaths in the year 2013 were 2, 89,000. The sub-Saharan Africa region alone accounted for 1,79,000 (62%) of maternal deaths followed by Southern Asia (69,000) (WHO, 2014). In India, maternal mortality rate (MMR) remains very high at 178 per 100,000 live births (RGI, 2013). Despite the commitment of Government of India (GOI), 19 percent of the 289,000 maternal deaths estimated worldwide took place in India. Such a high incidence of maternal mortality contributes to huge losses of human life and social welfare.

Prolonged labour is a leading cause of death among mothers and newborns in the developing world. If the labour does not progress normally, the woman may experience serious complications such as obstructed labour, dehydration, exhaustion, or rupture of the uterus. It may also contribute to maternal infection or haemorrhage and neonatal infection (WHO, 2014). Obstructed labour results from a disproportion between the foetal presentation and the mother's pelvis. The most recent statistics from the World Health Organisation (WHO) show that 8 percent or 42,000 of all maternal deaths are caused by obstructed labour (Magon, 2011). The women who experience obstructed labour usually suffer from postpartum haemorrhage, uterine rupture, puerperal sepsis and obstetric fistula (Kallembo & Zgambo, 2012; Opiah et al, 2012). Further, it is also highly associated with birth trauma, birth asphyxia, stillbirths, neonatal sepsis, and neonatal deaths.

Partograph is a very simple graphic and comprehensive record recommended by WHO to monitor the progress of labour including the maternal and foetal condition in intra-partum period every half an hour in active phase of labour in the labour room (Abebe et al, 2013; Fawole et al, 2018). Though it is the best available tool, it is not being widely used (Kalembo & Zgambo, 2012).

Monitoring a woman during the period of labour and delivery of baby is essential to improve the outcome of labour. The WHO recommends the universal utilisation of the partograph during labour (WHO, 2014; Kalembo & Zgambo, 2012). In India, use of partograph by the nursing personnel to monitor the condition of the mother and baby along with progress of labour is rather rare and its benefits are not widely known. Therefore, we decided to initiate a research project to evaluate the effect of teaching partograph on knowledge related to intra-partum monitoring among nursing personnel.

Objectives

This study was undertaken to teach use of partograph as a modality for reduction of maternal and neonatal infections and morbidity.

Hypothesis

H_1: There will be significant increase in knowledge scores of nursing personnel related to related to intra-partum monitoring following partograph teaching (PT) as measured by structured questionnaire at 0.05 level of significance.

Methodology

In a quantitative pre-experimental study, 37 nursing personnel working in labour room of a selected hospital were enrolled. Independent variable was the partograph teaching programme (PTP) and the dependent variable was the knowledge of nursing personnel related to intra-partum monitoring using partograph. The inclusion criteria was the nursing personnel available during the study and willingness to participate. Total enumeration technique was used to enrol the nursing personnel.

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Table 1: Demographic profile of the nursing personnel working in labour room (n=37)

Variables		f (%)
Age (years)*		35.06±9.74
Residence	Urban Rural	35 (94.5) 2 (5.5)
Basic education	10+2 BA/ BSc MA/MSc	22 (59.5) 12 (32.4) 3 (8.1)
Professional education	GNM BSc (Nursing) MSc Nursing	21 (56.8) 10 (27.0) 6 (16.2)
Designation	Nursing officer Senior Nursing officer	24 (64.9) 13 (35.1)
Total professional experience (years)**		10 (1.35)
Experience in labour room (years)**		4 (4.32)
Heard of partograph and its use	Yes	37 (100)
Learnt use of partograph in your nursing training	Yes No	14 (37.8) 23 (62.2)
Undergone any in-service education programme related to partograph use	No	37 (100)
Partograph being used in your labour room for monitoring the progress of labour	Yes No	5 (13.5) 32 (86.5)

*Mean ± SD, ** Median

Table 2: Knowledge scores of nursing personnel before and after partograph teaching (PT) (n=32)

Knowledge scores	Before PT f (%)	Before PT (Mean ± SD)	After PT f (%)	After PT (Mean ± SD)	p value
Excellent (> 23)	-	-	1 (3.1)	19.81±1.85	0.001
Good (≥ 20- 23)	6 (18.8)		20 (62.5)		
Medium (15-19)	20 (62.5)		11 (34.4)		
Poor (< 15)	6 (18.8)	16.95±3.06	-		

Approval from ethics committee of AIIMS was taken before initiating the project. Informed written consent was taken from the nursing personnel working in labour room after assuring them the anonymity and confidentiality of obtained information.

Reliability and validity of subject data sheet, and structured knowledge questionnaire were established. Tool try out and pilot study were conducted in the labour room of rural setup which is a branch of the selected hospital. The areas of knowledge included in the questionnaire were: the purposes of using partograph in labour room, frequency of monitoring maternal and foetal wellbeing, early identification of warning signs and management etc. The structured knowledge questionnaire had total 25 items of which 15 were MCQs type and 10 were true/false type. Every correct response was given a score of one and incorrect response 0. The maximum possible score was 25. The knowledge scores of the nursing personnel were categorized as excellent (>23), good (≥ 20- 23), medium (15-19) and poor (< 15).

Demographic profile was collected from the nursing personnel related to age, education, professional qualification, any training undergone related to partograph using a subject data sheet. A pre-tested structured knowledge questionnaire (α=0.87) was administered to the nursing personnel working in different shifts to assess their baseline knowledge. Partograph teaching was administered in small groups of 3-4 nursing personnel in the morning during the tea break session. The PT consisted of power point presentation on partograph, parameters monitored in intra-partum period, its uses etc. along with appropriate explanation by the first author. At the time of post-intervention knowledge assessment, there were five drop outs (3 nursing personnel went on child care leave and 2 were changed to other ward). Only 32 nursing personnel were available for the post-intervention knowledge assessment (taken after 28±2 days) related to the use of partograph, hence included for final analysis.

Data analysis

Data was coded and entered in excel sheet and analysed using SPSS 25.0. Descriptive data was analysed using frequency, percentage while gain in knowledge was analysed using paired t test. The set level of significance was 0.05.

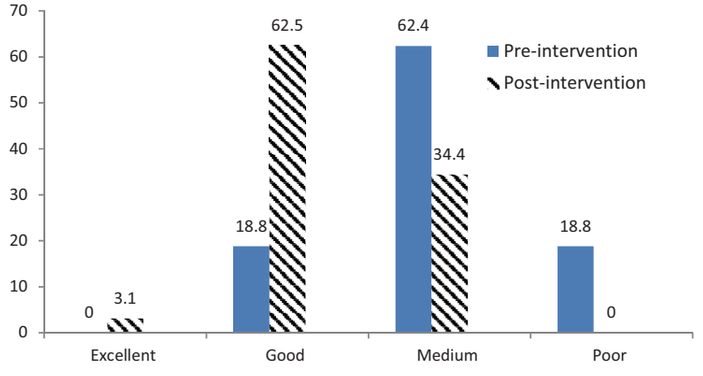

Figure 1: Pre-and post-partograph teaching (PT) knowledge scores of nursing personnel.

Results

The mean age (years) of the majority of nursing personnel working in labour room was 35.06±9.74, having residence in the urban area (94.5%). Most of the nursing personnel (59.5%) had 10+2 as basic education; similar number of nurses had GNM as professional qualification. Most of the nursing personnel were holding the designation of Nursing Officers. The median professional years of experience and the experience in the labour room particularly was 10 years (range 1 to 35) and 4 years (range 0.4 to 32). Majority of nursing personnel neither learnt use of partograph in their nursing training (62.2%)

nor used partograph in their labour room for monitoring the progress of labour (86.5%) (Table 1).

Most of the nursing personnel (62.5%) had medium knowledge scores at baseline with mean knowledge scores of 16.95±3.06. The mean post-intervention knowledge scores of the nursing personnel were 19.81±1.85. There was significant improvement in the knowledge scores of the nursing personnel related to the use of partograph (16.95±3.06 vs 19.81±1.85, $p<0.001$) after PTP as compared to baseline and most nursing personnel had knowledge scores falling in good category after intervention (Table 2, Fig 1).

Hence the research hypothesis (H_1) that there would be significant difference in knowledge scores of nursing personnel related to intra-partum monitoring before and following the PTP is accepted.

Discussion

Most of the nursing personnel did not learn about the use of partograph at pre-service level but all had heard about partograph and its use. Majority of the nursing personnel were not monitoring the progress of labour using the partograph. The baseline knowledge scores of the nursing personnel related to partograph fell in medium category. The PTP was effective in improving the knowledge scores of the nursing personnel working in the labour room.

Prevention of prolonged and obstructed labour by using partograph during labour is a key intervention in the reduction of maternal and perinatal morbidity and mortality (Qureshi, 2010; Ganesh, 2008; Lavend et al, 2008). Partograph provides a pictorial overview of labour, to alert obstetric care providers including nurses and doctors about the deviations in maternal, foetal condition and progress of labour (Shinde et al, 2012; WHO, 1994). It should be used as a teaching tool at pre-service level in monitoring the progress of active labour. The present study reveals that most of the nurses did not learn about the use of partograph in their nursing training or had any in-service training on the use of partograph.

Our findings are in agreement with those Abebe et al (2013) and Engida et al (2013) who similarly reported about nurses having poor knowledge related to partograph use in the labour room. The present study confirms the retention of knowledge related to partograph use one month after the PTP, thereby confirming the effectiveness of PTP. So, all the nurses at pre-service level should be sensitised about the use of partograph while monitoring the progress of active labour. There is also need for organising periodic refresher courses in which use of partograph in labour room while monitoring the progress of labour should be emphasised along with supervision of the nursing personnel to check their compliance.

Present study findings are eye opener for most of health care providers involved in safe delivery of newborn despite some limitations. Our findings are just a snapshot of the existing knowledge of the nursing personnel related to partograph and its use.

Recommendations & Conclusions

Similar study can be conducted on large scale, in large number of nursing personnel in multi centres along with studying the utilisation of partograph in labour room. Comparisons can be drawn in terms of maternal outcomes in centres where partograph is used versus not used.

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