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Original Research Article

A study on implementation of WHO labour care guide in low-risk pregnant women and its impact on maternal and perinatal outcome

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ABSTRACT

Background: WHO Labour Care Guide is a labour monitoring tool that is developed to support respectful maternity to provide positive childbirth experience with evidence-based recommendations.

Methods: This is an observational study comparing WHO labour care guide with WHO modified partograph in low-risk pregnant women who are in active phase of labour. The study included 80 labouring women who are divided into two groups with 40 participants in each group. In group 1 WHO modified partograph was used and in group 2 WHO labour care guide was used as a tool to assess the course of labour. Maternal and perinatal outcomes were analysed for both the groups.

Results: There is no significant difference in the caesarean section rates and instrumental deliveries between the two groups. There is a rise in the incidence of PPH and meconium-stained liquor in group 2 compared to group 1. None of the participants had labour beyond 12 hours. NICU admissions were higher in group 2.

Conclusions: In our study, the WHO modified partograph was found as equivalent to WHO labour care guide in identifying prolonged labor. Also, maternal and perinatal outcomes were equally identified by both types of partograph. WHO labour care guide did not prove to be beneficial over WHO modified partograph in terms of maternal and perinatal outcomes in Indian parturient women.

Keywords: WHO labour care guide, WHO modified partograph, Indian parturient

INTRODUCTION

The active management of labour has always been a topic of controversy since 1970's and hence it has attracted a lot of debate.¹ Obstetrical practices differ extensively across the world and also within individual health systems. This disparity exists even though we still have a background of alarmingly high maternal mortality rates throughout most of the developing countries and an increasing caesarean section rate in the developed countries, without much evidence that fetal outcome is improved for it.²⁻⁴ India striving for a better outcome on the obstetric platform has many patients facing life threatening complications with obstetric blood loss in the immediate postpartum period being the most common but

the most feared misfortunes namely obstructed labor and the rupture of the uterus contributes to over two third maternal losses in neglected labour.⁵ Here comes the role of skilled management of labour using a partograph, a simple chart for recording information about the progress of labour and the condition of a woman and her baby during labour, is key to the appropriate prevention and treatment of prolonged labor and its complications.

The WHO approved and encouraged the universal use of the partograph during the safe motherhood initiative Nairobi Conference after which it came into routine use. In 1994, the World Health Organization (WHO) devised the composite partograph which includes graphical representation of latent phase of 8 hours followed by

active phase with alert line and action line. As there is always a risk of inappropriate interventions if undue attention is paid to the latent phase, subsequently in the year 2000 the WHO produced the modified partograph where the latent phase was removed, to make it simpler and easier to use.

In February 2018, the WHO published a consolidated set of recommendations on intrapartum care for a positive childbirth experience.⁶ The recommendations include new definitions of the duration of the first and second stages of labour and provide guidance on the timing and use of labour interventions to improve the health and well-being of women and their babies.⁶⁻⁸ In order to implement these recommendations, in 2020 the WHO proposed the Labour Care Guide which replaces the modified WHO partograph. The labour care guide is a labour monitoring tool which is now inconsistent with the latest evidence about labour duration, triggers for clinical interventions and the importance of respectful maternity care.

Similarities and differences between the WHO modified partograph and the labour care guide

Similarities between the WHO modified partograph and the labour care guide were plotting of the cervical dilatation and descent of the presenting part against time to monitor the progress of labour and recording of the vital parameters of the mother and the baby.⁹

Table 1: Differences between the WHO modified partograph and the labour care guide.⁹

WHO modified partograph	WHO labour care guide
Active phase begins at 4 cm of cervical dilatation	Active phase begins at 5 cm of cervical dilatation
Fixed 1cm/hr ‘alert’ line and ‘action’ lines	Time limits at each cm of cervical dilatation is provided
No second-stage monitoring	Continued monitoring in second stage
Supportive care interventions are not documented	Recording of supportive care interventions like labour companionship, pain relief, oral fluid intake and posture
Strength, duration and frequency of uterine contractions are recorded	Duration and frequency of uterine contractions only are recorded
No explicit requirement to respond to deviations from expected observations of any labour parameter, other than cervical dilatation alert and action lines.	Requires deviations to be highlighted and the corresponding response to be recorded by the provider

Aim and objectives

Current study was done with an aim to improve the quality of essential intrapartum care with ultimate goal of improving maternal and perinatal outcomes.

METHODS

This is an observational study among 80 low risk pregnant women comparing WHO labor care guide with WHO modified partograph during the period of June, 2022 to July 2022 in a tertiary care teaching hospital, Visakhapatnam, India. In this study pregnant women were divided into two groups with 40 pregnant women in each group. Group I: WHO modified partograph used, Group II-WHO labour care guide used.

Inclusion criteria

Inclusion criteria for current study were; age 18 to 35 years, primigravida and multigravida women admitting with spontaneous labour in active phase (starting at 5cms cervical dilatation), with a live, singleton pregnancy with cephalic presentation having normal vital signs, vaginal birth was anticipated, no uterine scar and willing to participate in study.

Exclusion criteria

Exclusion criteria for current study were; patients with induced labour, pregnant women in whom trial labour given outside the hospital, women with complications like gestational diabetes, antepartum haemorrhage, severe preeclampsia/eclampsia and medical disorders complicating pregnancy, CPD, preterm labour and premature rupture of membranes.

Procedure

Informed and written consent was obtained from all the study participants and only those participants willing to sign the informed consent were included in the study. The risks and benefits involved in the study and voluntary nature of participation were explained to the participants before obtaining consent. Confidentiality of the study participants was maintained. All the pregnant women admitted in labour room of department of OBG, with spontaneous onset of labour, brief history taken and examination was done. The detailed menstrual history regarding previous menstrual cycles either regular or irregular was noted. Gestational age was determined by means of last menstrual period (LMP) using Naegele’s formula, obstetric ultrasonography (in cases where LMP was unknown or cycles were irregular) or both. Maternal assessment was done including general physical examination, systemic examination including per abdomen and per vagina examination. A thorough general physical examination was done with due importance to pallor, icterus, cyanosis and pedal edema. The respiratory and the cardiovascular systems

examination were done. In obstetrical examination the fundal, lateral and pelvic grips were performed to know the lie, presentation, attitude and position of the fetus. The fetal heart sound was located and the rate and regularity recorded. Also, the state of the uterus whether acting, relaxed, tender and the amount of liquor was observed. Per speculum examination was done for those patients with a history of leak per vaginam. Pelvic examination was done to know the stage of labour by assessing cervical dilatation and effacement, presence of intact membranes, the presenting part and its station. The pelvis assessment was done to rule out cephalopelvic disproportion. Informed consent from women fulfilling the inclusion and exclusion criteria was taken. All the women were randomly allocated into two study groups. Partograph was filled by the residents posted in labour room. Residents are given instructions regarding plotting of the partographs.

Statistical analysis

Descriptive analysis was carried out by mean and standard deviation for quantitative variables, frequency and proportion for categorical variables. Statistical analysis was made with IBM SPSS 16.0 software and P value of <0.05 was considered significant. One way ANOVA test is used for Continuous variables and Pearson’s Chi-squared test is used for Categorical variables.

RESULTS

In current study majority of pregnant women in group I belong to age group of 18 to 25 years followed by 42.5% of women belong to age group of 25 to 30 years and 5% belong to age group of 30 to 35 years. In group II, majority of women (70%) belong to age group of 18 to 25 years followed by 27.5% of women belong to age group of 25 to 30 years and one patient belong to age group of 30 to 35 years (Table 2).

Table 2: Distribution according to the age.

Age (years)	Modified partograph N (%)	WHO LCG N (%)
18-25	21 (52.5)	28 (70)
25-30	17 (42.5)	11 (27.5)
30-35	2 (5)	1 (2.5)
Total	40 (100)	40 (100)

Chi square test = 2.62, p =0.26, Not significant.

Table 3: Distribution according to parity.

Parity	Modified partograph N (%)	WHO LCG N (%)
Primi	22 (55)	29 (72.5)
Multi	18 (45)	11 (27.5)
Total	40 (100)	40 (100)

Chi square test = 2.65, p =0.103, Not significant.

Age was comparable among the study groups (p>0.05). 55% of women were primi and 45% women were multigravida in group I whereas 72.5% of women were primi and 27.5% of women were multigravida in group II which was comparable (Table 3). 80% of pregnant women had normal vaginal delivery, 15% had LSCS and 5% had instrumental delivery in group I whereas 80% of pregnant women had normal vaginal delivery, 12.5% had LSCS and 7.5% had instrumental delivery in group II which was comparable among the study groups (Table 5). Among 6 pregnant women in group I who underwent LSCS, 33.3% were due to fetal distress and 66.7% due to prolonged 1st stage labour.

Table 4: Distribution according to the duration of labour.

Duration (hours)	Modified partograph N (%)	WHO LCG N (%)
Upto 8	34 (100)	35 (100)
8-12	0	0
12-16	0	0
>16	0	0
Not known	0	0
Total	34 (100)	35 (100)

No statistical test is applicable to this data results are 100% in both the categories.

Table 5: Distribution according to mode of delivery.

Mode of delivery	Modified partograph N (%)	WHO LCG N (%)
NVD	32 (80)	32 (80)
LSCS	6 (15)	5 (12.5)
Instrumental delivery	2 (5)	3 (7.5)
Total	40 (100)	40 (100)

Chi square test = 0.29, p =0.86, Not significant.

Table 6: Distribution according to the indication of LSCS.

Indication of LSCS	Modified partograph N (%)	WHO LCG N (%)
Fetal distress	2 (33.3)	3 (60)
Prolonged 1 st stage	4 (66.7)	0
Prolonged 2 nd stage	0	1 (20)
Maternal Exhaustion	0	1 (20)
CPD	0	0
Failure to descent	0	0
Total	6 (100)	5 (100)

Chi square test = 6.15, p =0.10, Not significant

Among 5 women underwent LSCS in group II, 20% each due to prolonged 2nd stage labour and maternal exhaustion and 60% due to fetal distress (Table 6). 100% of women who had vaginal delivery in group I as well as group II had less than 8 hours duration of labour. Even with labour care guide, prolongation of labour is not more than 8 hours (Table 4). 2 women in group I had atonic PPH whereas 4 women had atonic PPH and one had traumatic PPH in group II (Table 8). Among 6 neonates admitted in NICU in group I, 50% were due to meconium-stained liquor, 33.3% due to respiratory distress and one due to delayed cry whereas among 13 neonates admitted in NICU of group II, 69.2% were due to meconium-stained liquor, 15.4% each due to respiratory distress and two due to delayed cry (Table 7). There is no significant difference in the cesarean section rates and instrumental deliveries between the two groups. There is a rise in the incidence of PPH and meconium-stained liquor in group II compared to group I. None of the participants had labour beyond 12 hours. NICU admissions were higher in group II. WHO labour care guide did not prove to be beneficial over WHO modified partograph in terms of maternal and perinatal outcomes.

Table 7: Indication of NICU admission.

Indication	Modified partograph N (%)	WHO LCG N (%)
Meconium-stained liquor	3 (50)	9 (69.2)
Respiratory distress	2 (33.3)	2 (15.4)
Low APGAR	1 (16.7)	2 (15.4)
Low birth weight	0	0
Total	6 (100)	13 (100)

Chi square test = 0.87, p =0.64, Not significant

Table 8: Distribution according to incidence of PPH.

Incidence of PPH	Modified partograph N (%)	WHO LCG N (%)
Atonic PPH	2 (100)	4 (80)
Traumatic PPH	0	1 (20)
Others	0	0
Total	2 (100)	5 (100)

Chi square test = 0.46, p =0.791, Not significant

DISCUSSION

There are no studies published so far in India or elsewhere comparing WHO labour care guide and the WHO modified partograph. A study was conducted by Joshua et al with an aim to evaluate the usability, acceptability and feasibility of labour care guide among maternity care practitioners in clinical settings.¹⁰ The study concluded that the highest practitioner satisfaction was reported for the supportive care monitoring section which encourages the consistent practice of respectful maternity care during labour and childbirth. Practitioners

across all sites also emphasized that using the LCG guided them to provide supportive, person-centered labour care whether or not they had been familiar with WHO guidance on supportive care and strengthen the relationships between health practitioners and women. Important limitation of the modified partograph is that they do not include 2nd stage labour monitoring. Increased uterine activity compounded by maternal expulsive efforts make the 2nd stage of labour a particularly critical time and reduced vigilance at this time may lead to poor outcomes. This deficit has been addressed in the labour care guide with closer attention to progress and the wellbeing of both women and baby being required during 2nd stage. However, a study was conducted by Soumya et al to evaluate pattern of labour progress in Indian origin female.¹¹ The mean age of the study population was 24.43 years with a range of 18 to 35 years. Maximum number of females were nulliparous that is 79.1%. Mean cervical dilation at admission was 4 cm. Mean duration of active phase was 3.66 hours. Mean duration of 2nd stage of labour was 18.4 minutes. Mean rate of cervical dilatation in active phase of labour was 1.42cm/ hour.

Limitations

The major limitations of current study were small sample size and single centered study. According to current study in Indian parturient women, WHO modified partograph serves well in terms of monitoring of labour progression, but further research is needed to come to a conclusion whether WHO labour care guide is more helpful than the modified partograph.

CONCLUSION

In current study the WHO modified partograph was found as equivalent to WHO Labour Care Guide in identifying prolonged labor. Also, maternal and perinatal outcomes were equally identified by both types of partograph. In developing countries like India, WHO modified partograph is an appropriate and a cost-effective measure that can be adapted with minor changes like supportive care for mother and 2nd stage monitoring. Further research to be focused on large multicentered studies in low-risk antenatal women including rural areas to confirm beneficial role of who labor care guide in decreasing primary caesarean section rate without compromising maternal and perinatal outcome in Indian parturient women.

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