

Fetomaternal Outcome and Patient Satisfaction Rate with Labor Care Guide in Tertiary Care PMC Hospital Nawabshahbackground

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Keywords:

Exercise and Prediabetes, Lipid profile, Cardiorespiratory Fitness, Acute Exercise

Received on 24 Aug, 2024

Accepted on 01 Oct, 2024

Published on 03 Oct, 2024

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Abstract

There was no significant difference in patient satisfaction, mode of delivery, parity of the patients, or the specific causes of postpartum hemorrhage (PPH), with all p-values exceeding 0.05. between the two groups. However, a significant association was found between group assignment and the reasons for cesarean section, with a p-value of 0.039. The results also showed marginal significance for higher NICU admission rates in the modified partograph group, although this was not conclusively statistically

significant under strict criteria ($p < 0.05$). **CONCLUSION:** The WHO labor care guide did not outperform the WHO-modified partograph in terms of maternal and perinatal outcomes.

INTRODUCTION

The increasing global incidence of caesarean sections, particularly in developing countries, underscores a pivotal healthcare challenge. In Pakistan, caesarean rates have surged from a mere 3.2% in 1990 to 19.6% recently, reflecting a broader global trend where rates have escalated beyond the World Health Organization's recommended threshold of 10-15%^{1,2}.

As of the early 2020s, the average global rate of caesarean sections was reported to be around 21.1%^{3,4} Projections indicate that by 2030, about 28.5% of women worldwide are

expected to give birth via caesarean section, totaling about 38 million caesareans annually, with a significant number of these procedures occurring in low- and middle-income countries (LMICs)⁵.

This trend reflects broader disparities in access to and utilization of caesarean sections across different regions, with lower rates in less developed areas and higher rates in more developed regions^{4,6}

Complications from these procedures, such as increased maternal morbidity and prolonged hospital stays, have become more prevalent in Pakistan, echoing concerns over the medicalization of childbirth⁷. Recent studies within local contexts have highlighted an upward trend in caesarean sections, advocating for enhanced labor monitoring tools like partographs to potentially reduce these rates. However, evidence from studies indicates that partograph use may contribute to shorter labours and some improvement in maternal and fetal outcomes⁸.

Few studies concluded that the partograph is generally acknowledged, and evidence suggests that its practical application does not align with expectations, thus it is not achieving its full potential in enhancing outcomes. Additionally, observations offer valuable insights that could be relevant in creating new tools for labor monitoring, like the streamlined and effective labor monitoring-to-action tool^{9,10}.

Critical examination of these studies reveals a gap: they often disregard maternal preferences for labor, such as the presence of a partner or specific pain management strategies, which can significantly affect satisfaction and outcomes¹¹. This oversight calls into question the comprehensiveness of existing research and highlights the need for more inclusive studies. The aim of our study, is to investigate fetomaternal outcomes and patient satisfaction rates with labor care guides in tertiary care settings in Pakistan, focusing on the integration of women's preferences into labor management strategies. By doing so, this research seeks to address significant gaps in current practices, to develop more tailored and effective health interventions.

OBJECTIVES:

The Objective of this Study is:

To Determine Fetomaternal Outcome And Patient Satisfaction Rate With Labor Care Guide In Tertiary Care Pmc Hospital Nawabshah

METHODOLOGY

DESIGN: Comparative Cross-sectional.

SETTING: MCH PUMHS, OBSTETRICS & GYNECOLOGY WARD UNIT II.

SAMPLING TECHNIQUE: CONSEQUETIVE NON PROBABILITY.

DURATION: SIX MONTHS FROM 10-10-2023 TO 09-04-2024.

DTA COLLECTION PROCEDURE

This observational study, conducted over six months from October 2023 to April 2024, involved 100 low-risk pregnant women at PUMHS Nawabshah, a tertiary care teaching hospital. The study aimed to compare the effectiveness of the WHO Labor Care Guide with the WHO Modified Partograph in managing childbirth. The participants were then evenly divided into two groups: Group I utilized the WHO Labor Care Guide, whereas Group II employed the WHO Modified Partograph, keeping 50 women in each group. Data interpreted via SPSS version 25.

INCLUSION CRITERIA

The study included women aged 18 to 40 years, with all parity, presenting in spontaneous labor at an active phase (defined as starting at 5cm cervical dilation). Eligibility required a live, singleton pregnancy in cephalic presentation, normal vital signs, the expectation of a vaginal birth, absence of any uterine scar, and consent to participate.

EXCLUSION CRITERIA

Participants with induced labor, those who had undergone trial labor outside the hospital, or those suffering from complications such as gestational diabetes, antepartum hemorrhage, severe preeclampsia/eclampsia, any medical condition complicating the pregnancy, cephalopelvic disproportion (CPD), preterm labor, and premature rupture of membranes were excluded.

DATA COLLECTION PROCEDURE

After getting approval from the People University of Medical & Health Science Ethical Review Committee (NO: PUMHSW/SBA/PVC/ER/2023/329) study was started. Women were selected from the labour room of Obstetrics & Gynecology, PUMHS nawab shah, fulfilling the inclusion criteria, Informed consent, both verbal and written, was secured from all participants in the study; only those agreeing to provide such consent were enrolled. Privacy for all participants was assured. All women presenting with spontaneous labor were briefly interviewed and examined. A detailed history including menstrual history, was noted. The gestational age was estimated using the last menstrual period (LMP) and early scan CRL, supplemented by obstetric ultrasound in cases where the LMP was unknown or the cycles irregular. Maternal assessments included a complete physical examination and systemic assessments involving abdominal and vaginal exams. Special attention was paid to signs such as pallor, jaundice, cyanosis, and edema. Respiratory and cardiovascular system evaluations were also conducted. The obstetrical examination (with all grips fundal, lateral, and pelvic) was performed to ascertain fetal lie, presentation, attitude, and position. The fetal

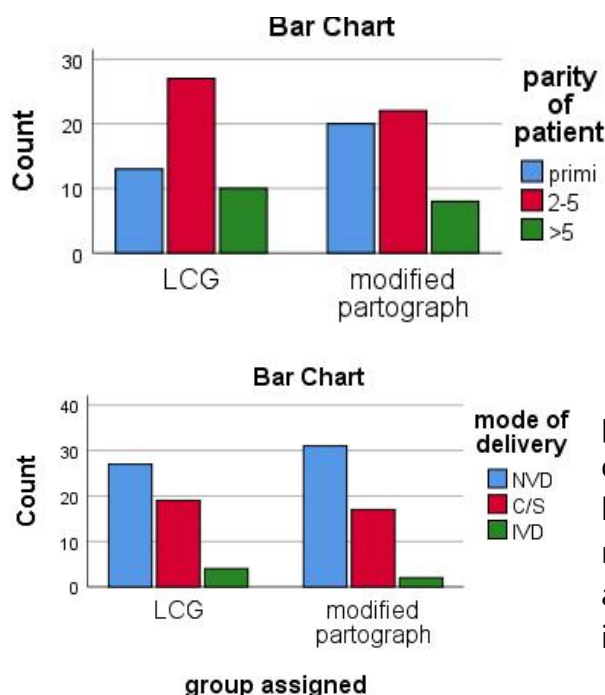
heartbeat was located, and its rate and rhythm were monitored. The uterus's condition—whether contracting, relaxed, tender or the amount of amniotic fluid—was noted. A speculum examination was undertaken for patients reporting amniotic fluid leakage, and a pelvic assessment was done to determine labor progression by evaluating cervical dilation and effacement and the integrity and position of the membranes. Cephalopelvic disproportion was excluded. The women were then allocated into two research groups. The labour was monitored via labour care guide and partograph in their respective groups.

DATA ANALYSIS

Descriptive statistics were conducted using means and standard deviations for continuous variables, and frequencies and proportions for categorical variables. Statistical analyses were performed using IBM SPSS version 25.0, considering a P-value of less than 0.05 as statistically significant. One-way ANOVA tests were applied to continuous variables, while Pearson's Chi-square tests were utilized for categorical variables.

RESULT

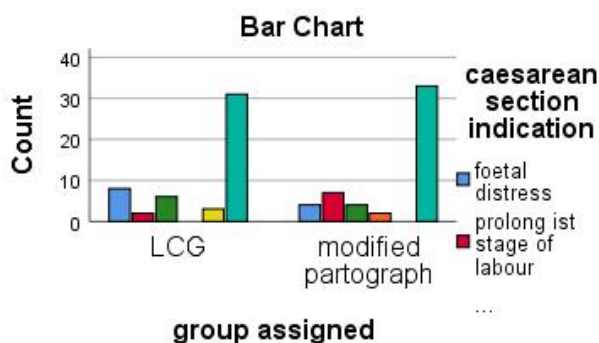
The mean age of patients in both groups was around 27 with the majority of patients in the age group of 20 to 30 years. 54% of patients in group I were multi-para (2-5), 26% were primigravida and 20% were grand multi(>5). Whereas 44% were multi, 40% primi and 16% were grand multi para patients in group II.



No Significant Difference: p-values (well above the common alpha level of 0.05), suggesting that there is no statistically significant association between the group assignment and the parity of the patients. 54% of patients in the LCG guide group (I) had a vaginal delivery, 38% had cesarean section and 8% had instrumental vaginal delivery whereas, in group II, 62% of pregnant women had a normal vaginal delivery, 34% had cesarean section and 4% had an instrumental vaginal delivery. There is no significant association between the group assignment and the mode of delivery, as indicated by the p-values being greater than

the typical alpha level of 0.05, which suggests that the differences observed are likely due to chance.

Among 19 pregnant women who underwent cesarean section in group I, the majority (42%) occurred due to fetal distress, and prolonged second stage (31%). Whereas 17 women underwent caesarean section in group II, 41% due to prolonged first stage of labour and the second most reason was observed fetal distress (23%).

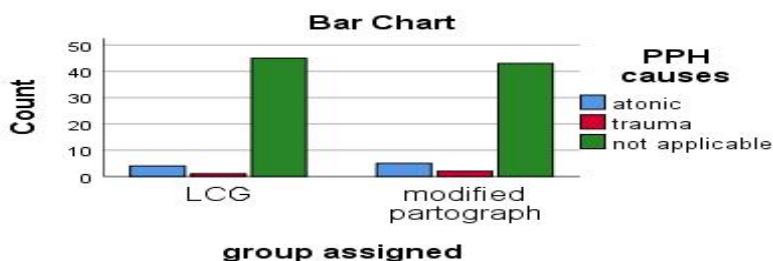


The significant result. The slightly substantial result from the Likelihood Ratio might prompt a more detailed analysis or a replication with a larger dataset to confirm these findings.

Among 5 patients in the LCG group, and 7 in the modified partograph group, who underwent PPH, the commonest cause was atonic, and the second common was traumatic.

Distribution according to PPH

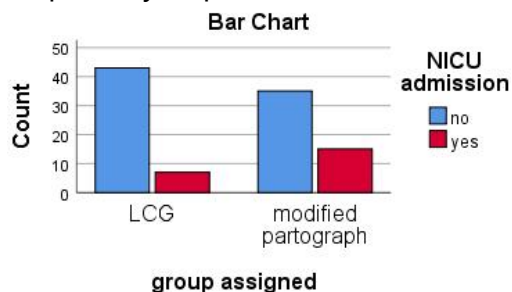
		PPH		
		NO	YES	Total
group assigned	LCG	45	5	50
	modified partograph	43	7	50
Total		88	12	100



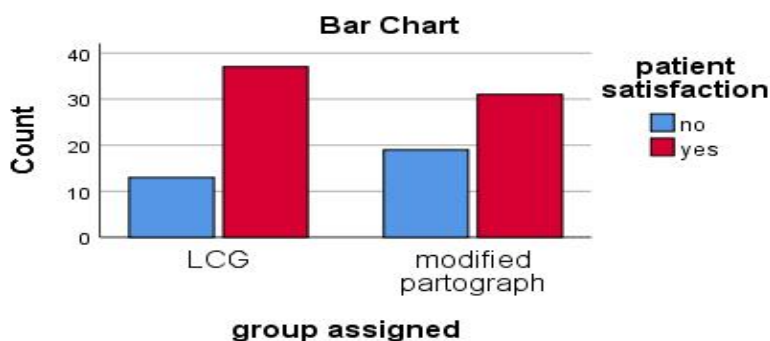
There is no statistically significant association between the group assignment (whether LCG or modified partograph) and the occurrence and the cause of PPH:

Among 7 newborns admitted to NICU, the common reason for admission was meconium aspiration (42%), and low AOGAR score (42%) in group I. Among 15 newborns admitted to NICU for group II, the commonest reason was low APGAR score

(60%) and the second most common reason seen was meconium aspiration and respiratory depression (13%).



Marginal Significance: The p-values suggest a marginal significance, indicating that there might be a trend where infants in the modified partograph group have a higher rate of NICU admissions than those in the LCG group, this difference is not strong enough to be statistically significant under strict criteria ($p < 0.05$).



There was no significant difference in patient satisfaction between the two groups, as the p-values were all above 0.05, suggesting that the type of monitoring did not affect patient satisfaction significantly.

DISCUSSION

In our study comparing patient satisfaction and various clinical outcomes between groups assigned to the Labor Care Guide (LCG) and the modified partograph, the findings indicated:

There was no significant difference in patient satisfaction between the two groups, as the p-values were all above 0.05, suggesting that the type of monitoring did not affect patient satisfaction significantly. Similarly, there were no significant associations between group assignment and the mode of delivery, parity of the patients, or the specific causes of postpartum hemorrhage (PPH), with all p-values exceeding 0.05. A significant association was found only between group assignment and the reasons for cesarean section, with a p-value of 0.039.

The results also showed marginal significance for higher NICU admission rates in the modified partograph group, although this was not conclusively statistically significant under strict criteria ($p < 0.05$).

Overall, the results indicate that while there is no clear statistical significance between group assignment and specific NICU admission reasons, the borderline p -values suggest a possible association that might benefit from further investigation, possibly with a larger sample size or by examining additional variables that could affect these outcomes.

The study suggests that group assignment did not systematically affect most outcomes, except for a potential influence on cesarean section reasons, which might require further investigation. A study by Srividya N, Sri J¹², found the same results of nonsignificant association seen with age, parity, mode of delivery, PPH incidence, and etiology of PPH, and reported that the WHO-modified partograph is comparable to the WHO labor care handbook. With both partographs, maternal and perinatal outcomes were comparable. Our study showed a marginally significant association caesarean section and NICU admission between the two groups.

A few published studies compare the WHO-modified partograph with the labor care guide. Joshua et al researched to assess the feasibility, acceptability, and usability of the labor care guide among maternity care providers in clinical settings¹⁴. According to the study's findings, the supportive care monitoring section—which promotes the regular practice of providing courteous maternity care during labor and delivery—received the highest practitioner satisfaction ratings. The LCG, according to practitioners at all sites, helped them to give person-centered, supportive labor care regardless of whether they were familiar with the WHO's guidelines for supportive care. It also strengthened the bonds between medical professionals and women.

One significant drawback of the updated partograph is that it does not provide labor monitoring during the second stage. Reduced attention during the second stage of labor may have negative consequences because of increased uterine activity combined with maternal expulsive attempts. The labor care guide has addressed this deficiency by paying more attention to the woman's development and the baby's welfare during the second stage.

An Open-label randomized control trial was conducted on low-risk antenatal women for labor monitoring with the WHO Labor Care Guide and WHO-modified partograph. This study saw reduced operative delivery risk using a labour care guide¹⁴.

CONCLUSION

This research provided crucial insights into the fetomaternal outcomes and patient satisfaction rates associated with the utilization of labor care guides in a tertiary care setting in PUMHS. Notably, the study found no significant differences in patient satisfaction, modes of delivery, or parity of patients between those assigned to the Labor Care Guide (LCG) and those using a modified partograph. However, a marginal yet notable observation was the higher rates of NICU admissions in the modified partograph group, although this did not reach statistical significance.

IMPLICATIONS FOR HEALTH POLICY AND EDUCATIONAL STRATEGIES

The study's results suggest that while current labor monitoring tools like partographs and labor care guides are beneficial, their effectiveness may be enhanced by incorporating more personalized care strategies. These findings are crucial for healthcare providers and policymakers aiming to optimize maternal and neonatal health outcomes through improved labor management practices.

FUTURE RESEARCH DIRECTIONS

Further research is necessary to explore the integration of advanced monitoring technologies and patient-centered care models in labor and delivery settings. Additional studies should investigate the long-term outcomes of implementing labor care guides across different healthcare contexts, particularly in low-resource settings.

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