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Outcome of Labour in Primigravida Using WHO Labour Care Guide at Tertiary Care Hospital, Larkana

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ABSTRACT

Introduction: Labour complications contribute to maternal and neonatal morbidity in low-resource settings. The WHO Labour Care Guide (LCG) is an evidence-based tool designed to improve labour outcomes and reduce unnecessary caesarean sections (CS) (1). **Objective**: To evaluate labour outcomes in primigravida women using the WHO LCG at Sheikh Zayed Woman Hospital, Larkana. **Materials and Methods**: This descriptive study, conducted from February, 2025 to May, 2025 at Sheikh Zayed Woman Hospital Larkana, enrolled 237 primigravida women. Labour was monitored using the WHO LCG, with data on delivery mode and maternal/fetal parameters analyzed in SPSS version 20 using chi-square tests ($p \leq 0.05$). **Results**: Vaginal delivery occurred in 86.9% (206/237) of cases, with 13.1% (31/237) requiring CS, primarily due to fetal distress (41%) and prolonged first stage (22%). Supportive care (92.4% with companions, 78% with pain relief) enhanced outcomes. CS rates were lower than the institutional baseline (25–30%) (19). **Conclusion**: The WHO LCG improved labour monitoring, reduced avoidable CS, and enhanced maternal outcomes in primigravida women.

INTRODUCTION

Reducing maternal and neonatal mortality during labour is a global priority, particularly in low-resource settings like Pakistan, where complications remain prevalent (20). The WHO Labour Care Guide (LCG), an evidence-based tool, standardizes intrapartum care to optimize outcomes and minimize unnecessary caesarean sections (CS) (1). Clinical trials, such as those by Pandey et al., demonstrate that the LCG significantly reduces CS rates in tertiary settings (2). In Pakistan, where CS rates often exceed 25% (19), structured tools like the LCG are critical for improving maternal care.

The LCG promotes individualized care, integrating maternal preferences with clinical monitoring to ensure timely interventions (5). Studies, such as Vogel et al.'s pilot in India, highlight its role in rationalizing intrapartum care and reducing interventions (3). Patabendige et al. describe the LCG as a next-generation partogram, enabling early detection of complications (4). Supportive care, including labour companions and non-pharmacological pain relief, enhances maternal satisfaction and outcomes, as shown by Biana et al. (7). In Pakistan, socio-cultural factors, such as limited healthcare access in rural areas, necessitate tailored interventions, as noted by Atif et al. (17).

Maternal factors like body mass index (BMI) (6) and comorbidities (e.g., polycystic ovary syndrome (10), bacterial vaginosis (11)) can complicate labour, requiring vigilant monitoring. The LCG's structured approach supports such needs, making it relevant for primigravida women in Larkana, where local data on labour outcomes is scarce.

Objective

To evaluate labour outcomes in primigravida women using the WHO Labour Care Guide at Sheikh Zayed Woman Hospital, Larkana, focusing on delivery mode and maternal well-being.

MATERIALS AND METHODS

Design: Descriptive, observational study.

Setting: Department of Gynaecology and Obstetrics, Sheikh Zayed Woman Hospital, Larkana.

Duration: February, 2025 to May, 2025.
Inclusion Criteria: Primigravida women aged 20–45 years with singleton, cephalic pregnancies at >34 weeks gestation, monitored using the WHO LCG, who provided informed consent.
Exclusion Criteria: Women with medical conditions (e.g., diabetes (14), hypertension, thyroid disease (18), heart disease), breech presentation, recurrent miscarriages, or planned CS.

Methods

After ethical approval from the institutional review board of Sheikh Zayed Woman`s Hospital and the College of Physicians and Surgeons Pakistan, 237 primigravida women were enrolled with informed consent. The WHO LCG was used to monitor labour, recording cervical dilation, uterine contractions, fetal heart rate, maternal vital signs, and alert criteria (e.g., abnormal fetal heart rate, meconium-stained liquor, prolonged labour) (1). Healthcare providers were trained on LCG use. Outcomes (vaginal delivery or CS) and labour support parameters were recorded on a proforma. Data were analyzed in SPSS version 20 using chi-square tests for categorical variables (e.g., delivery mode by residence) and t-tests for continuous variables (e.g., maternal age, gestational age) ($p \leq 0.05$). Stratification was performed by maternal age, gestational age, and residence (urban/rural).

RESULTS

This study enrolled 237 primigravida women from February to May 2025. The mean maternal age was 26.4 ± 4.8 years, with 68.3% (162/237) aged 20–30 years. The mean gestational age was 38.2 ± 1.4 weeks. Urban residents comprised 55.7% (132/237), and rural residents 44.3% (105/237).

Table 1
Demographic Characteristics of Participants (n=237)

Variable	Mean ± SD / n (%)
Age (years)	26.4 ± 4.8
Age Group 20–30 years	162 (68.3%)
Gestational Age (weeks)	38.2 ± 1.4
Urban Residence	132 (55.7%)
Rural Residence	105 (44.3%)

Vaginal delivery occurred in 86.9% (206/237) of cases, with 188 (91.2%) spontaneous and 18 (8.7%) instrumental (14 vacuum, 4 forceps). CS was performed in 13.1% (31/237), primarily for fetal distress (41%) and prolonged first stage (22%).

Table 2
Mode of Delivery and Indications for Caesarean Section

Outcome	n (%)
Vaginal Delivery	206 (86.9%)
- Spontaneous	188 (91.2%)
- Instrumental (Vacuum)	14 (77.8%)
- Instrumental (Forceps)	4 (22.2%)
Caesarean Section	31 (13.1%)
- Fetal Distress	13 (41%)
- Prolonged First Stage	7 (22%)
- Meconium-Stained Liquor	6 (19.3%)
- Obstructed Labour	3 (9.7%)
- Deep Transverse Arrest	2 (6.4%)

Supportive care included labour companions (92.4%), pain relief (78%) (7, 13), and oral fluid intake (83.5%). Only 9.3% of women laboured in the supine position, aligning with global recommendations for upright positions (5).

Table 3
Labour Support Parameters (n=237)

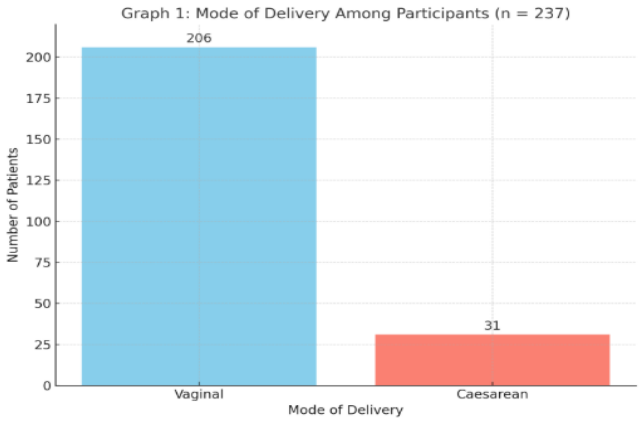
Support Parameter	Yes (%)	No (%)
Companion Present	219 (92.4%)	18 (7.6%)
Pain Relief	185 (78.0%)	52 (22.0%)
Oral Fluid Intake	198 (83.5%)	39 (16.4%)
Supine Posture Observed	22 (9.3%)	215 (90.7%)

Abnormal findings included abnormal fetal heart rate (6.3%) (11), meconium-stained liquor (7.6%) (11), prolonged labour (4.2%), and maternal vital abnormalities (5.9%) (14), prompting timely interventions.

Table 4
Abnormal Findings Observed During Labour (n=237)

Parameter	n (%)
Abnormal Fetal Heart Rate	15 (6.3%)
Meconium-Stained Liquor	18 (7.6%)
Prolonged Labour (>6 hrs at 5cm)	10 (4.2%)
Maternal Vital Abnormalities	14 (5.9%)

Graph 1
Mode of Delivery among Participants (n=237)



Bar graph showing vaginal delivery (86.9%) and caesarean section (13.1%) rates among primigravida women.

The CS rate (13.1%) was lower than the institutional historical baseline of 25–30%, based on hospital records from 2023–2024 (19). Chi-square analysis showed no significant differences in delivery mode by residence or age ($p > 0.05$).

DISCUSSION

This study at Sheikh Zayed Woman`s Hospital, Larkana, demonstrated that the WHO LCG facilitated a high vaginal delivery rate (86.9%) and a low CS rate (13.1%) among primigravida women (1). These findings align with Pandey et al.'s trial, which reported reduced CS rates with LCG use (2). The LCG's structured monitoring enabled timely interventions for complications like fetal distress (41% of CS cases) and prolonged labour (22%) (3), reducing unnecessary interventions.

The LCG's emphasis on patient-centered care, including

labour companions (92.4%) (17) and non-pharmacological pain relief (78%) (7, 13), improved maternal satisfaction. Low supine posture use (9.3%) supported shorter labour durations, as noted by Hofmeyr et al. (5). In Pakistan, where CS rates often exceed 25% (19), the LCG's implementation offers a scalable solution. The CS rate was lower than the hospital's historical baseline (25–30%) (19), though a control group would strengthen this comparison.

Abnormal findings (e.g., 6.3% abnormal fetal heart rate) (11) were promptly addressed, highlighting the LCG's early warning system, crucial in low-resource settings where delays increase morbidity (15). Rural women (44.3%) faced access barriers, as noted by Atif et al. (17), underscoring the need for community outreach. Limitations include the single-center design and lack of a control group, which limits generalizability. Unmeasured factors (e.g., staff attitudes) may have influenced outcomes.

CONCLUSION

The WHO LCG enhanced labour outcomes in primigravida women at Sheikh Zayed Woman`s Hospital, achieving an 86.9% vaginal delivery rate and a 13.1% CS rate (1). Structured monitoring and supportive care reduced avoidable interventions and improved maternal well-being (5, 7). Integrating the LCG into routine practice in Pakistan could standardize care and reduce morbidity (19, 20). Multi-center studies are needed to validate these findings.

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