CLINICAL ARTICLE

Clinician attendance and delivery practices at hospital-based vaginal deliveries in Western Kenya

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ABSTRACT

Objective: To characterize delivery practices and factors associated with respectful, evidence-based care at a referral hospital in Western Kenya. Methods: An exploratory observational study used a standardized birth-observation form to record information on patient characteristics and healthcare practitioner behaviors during uncomplicated vaginal deliveries between June 30, 2014 and July 17, 2014. All deliveries were monitored for whether healthcare staff performed six specific evidence-based practices (three maternal and three neonatal practices). Results: In total, 75 vaginal deliveries were observed. In 48 (64%) deliveries, nursing students were the only practitioners present. The mean number of evidence-based practices performed at each delivery was 3.58. The number of evidence-based practices performed by junior practitioners was higher when a nurse educator was assessing their performance (4.47 vs 3.36, P < 0.001). Lower mean respectful-care scores were recorded when delivery teams comprised three or more practitioners (1.38; 95% confidence interval 0.93–1.84 vs 2.74; 95% confidence interval 2.16–3.31, $P = 0.002$). Conclusion: The present study found low rates of evidence-based practice and respectful maternity care; this could serve as a deterrent for women seeking care at the study facility. These findings emphasize the need for a comprehensive approach in increasing the quality of patient care to improve maternal and newborn health outcomes.

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1. Introduction

Efforts to improve maternal and child health have been successful worldwide [1]; however, the perinatal period remains a high-risk time for women and neonates in Kenya. For every 1000 live births, nearly five women and 27 neonates die from complications that are largely preventable [2,3]. These rates have stagnated since 1993 despite a variety of national strategies and interventions, preventing Kenya from attaining Millennium Development Goal 5 of reducing the maternal mortality ratio by three quarters by 2015 [4].

Maternal and neonatal deaths can be largely avoided when deliveries occur with skilled birth attendants present and at adequately equipped facilities; however, more than half of women in Kenya undergo delivery at home [2,5]. Disrespectful, poor-quality maternity care is often cited as deterring women from attending healthcare facilities for deliveries [6].

Women who experience abuse and neglect at healthcare facilities are unlikely to attend such facilities for care in the future [7]. In a case–control study of 580 women in Western Kenya [8], rude or uncooperative staff at healthcare facilities was one of the most commonly cited reasons for women deciding to undergo delivery at home. Growing recognition for the importance of respectful and dignified care during delivery is articulated in a recent statement by WHO, emphasizing a woman's right to, "the highest attainable standard of health, which includes the right to dignified, respectful healthcare" [9].

Skilled birth attendants are trained to use evidence-based techniques to manage normal pregnancies, childbirth, and the immediate postnatal period to optimize outcomes for both women and infants [10]. Techniques to prevent postpartum hemorrhage include active management of the third stage of labor, including the administration of intramuscular or intravenous oxytocin after delivery and the assessment of uterine tone after expulsion of the placenta for the early detection of atony [11]. Data regarding controlled cord traction (CCT) is mixed. CCT does not prevent postpartum hemorrhage but it could reduce the need for manual placental extraction; consequently, skilled birth attendants should be competent in performing CCT [12]. Evidence-based practices that focus on the neonate during delivery and immediately postnatally include delayed cord clamping, resuscitation of the neonate, breastfeeding, and the prevention of hypothermia, which is usually achieved through skin to skin contact [13–15]. Skilled birth attendants must also be able to provide emergency obstetric and neonatal care.

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The objectives of the present study were to characterize the delivery practices of skilled birth attendants and more junior clinicians, to assess the degree of respectful maternity care provided to patients, and to explore maternal, provider, and team factors that could impact evidenced-based practices and respectful care at a referral hospital in Western Kenya. The data would be used to inform a subsequent training program, PRONTO, focused on improving maternal and neonatal outcomes in Western Kenya [16]. PRONTO is an innovative training program with the aim of improving the quality of facility-based obstetric care. PRONTO uses low-cost, high-fidelity simulations developed specifically for low-resource settings to train healthcare providers in team-based skills, culturally sensitive care, and evidence-based practices for obstetric emergencies [17].

2. Materials and methods

The present exploratory observational study was conducted from June 30, 2014 to July 17, 2014 at a high-volume referral facility in Western Kenya. Each year, between 3000 and 5000 deliveries are performed at the study hospital, which serves a county that includes 137 referring lower-level facilities. The hospital is a clinical training site for student nurses, student clinical officers, and medical interns, and it employs 31 skilled birth attendants. The present study was approved by the University of Washington IRB and the University of Nairobi Ethics and Research Committee. All healthcare providers and patients enrolled in the study provided informed verbal consent to have deliveries observed and were given an information sheet detailing their participation in the study. No identifying information was collected from any participants.

Healthcare providers were eligible for inclusion in the study if they were present during a delivery that was observed during the present study. Patients undergoing delivery were eligible for inclusion in the study if they were at least 18 years old, spoke a language that was also spoken by the primary clinician attending the delivery (generally a local dialect or Swahili), and had no known risk factors for a complicated labor. Individuals with pre-eclampsia and patients experiencing an obstructed labor awaiting a cesarean delivery were excluded.

Using convenience sampling, a single researcher (K.B.) observed a total of 75 uncomplicated vaginal deliveries during the study period; this figure was pre-planned and considered an appropriate number of deliveries based on a 2-week observation period. The observer used a standardized birth observation form that had previously been used in other PRONTO studies and was tailored to suit a Kenyan study setting (unpublished data). The data points included descriptive but non-identifying information about patients (age, parity, complications), healthcare providers (training, degree), whether companions were present at the delivery, details of the delivery practices employed, and details of respectful maternal-care practices, communication, and leadership.

To analyze respectful care, the present study applied a respectful-care score. This score allocated a point for positive verbal communication, positive non-verbal communication, for patients being permitted freedom of movement/position, and for patients being given privacy. The respectful-care score subtracted one point for negative verbal communication and for negative physical communication during a delivery. This resulted in a maximum possible score of four points and a minimum possible score of negative two.

Study observations began when healthcare providers were preparing to attend each delivery and continued until a patient had left the labor room or the healthcare provider had left the patient, whichever occurred first. During the delivery, the observer did not participate in the delivery process, and did not interact with the primary clinician, other members of the delivery team, or the patient. If any serious complications arose during the delivery, observation was discontinued and the observer left the delivery area.

The primary outcomes were the application of evidence-based delivery practices by healthcare staff and the provision of respectful care to patients. The evidence-based practices recorded were the administration of oxytocin intramuscularly after delivery, CCT with supra-pubic counter traction for delivery of the placenta, fundus assessed following placental expulsion, drying and covering of the neonate within 30 seconds of delivery, the immediate initiation of contact between the neonate and patient following delivery, and a delay of at least 1 minute before cord clamping. Continuous variables were expressed as means and the Student t test was used to assess the significance of any differences in variables. Variables associated with the primary outcomes were reported as odds ratios. The variables that were examined in relation to evidence-based practices and respectful care were the number of providers and types of providers at deliveries, the supervision of trainees at deliveries, and the assessment of trainee performance by nurse educators. Odds ratios were calculated using an exact logistic regression. Statistical analysis was performed with STATA version 13 (StataCorp LP, College Station, TX, USA). $P < 0.05$ was considered statistically significant.

3. Results

The mean $\pm$ SD age of patients undergoing delivery was 23.6 $\pm$ 4.2 years and the mean parity of patients was 2.1 $\pm$ 1.2 (including the delivery being observed). Of the 75 deliveries observed, 60 (80%) occurred during the day shift (80%) and 15 (20%) occurred during the night shift. The mean duration of observation for each delivery was 41 $\pm$ 24.3 minutes (Table 1).

Table 1 details patient characteristics, the type of healthcare provider present during delivery, and whether a junior healthcare provider was being supervised by a more senior colleague during the delivery.

The types of providers attending deliveries included medical interns, nursing students at either diploma of bachelor level, staff nurses, and clinical officers in training. Medical interns, nursing students, and clinical officers in training are collectively referred to as trainees throughout the present study. The number of different individuals was not recorded but the observing researcher estimated that 20–30 healthcare providers acted as the primary clinician (defined as the healthcare provider attending to the delivery of the neonate) for at least one delivery during the study (Table 1).

Medical interns complete a 1-year internship before being fully qualified to practice as physicians. Diploma-level nursing students undergo basic nursing training in a 3-year program and bachelor-level nurse trainees undergo 4 years of training (with or without a previous diploma); bachelor-level nurses are the most senior level of nursing staff. Staff nurses are hired by the hospital specifically to staff the labor ward and have completed either diploma- or bachelor-level training. Clinical officers undergo approximately 3 years of basic medical training and perform a role similar to that of a physician's assistant in other countries. Student nurses and student clinical officers working in the hospital undergo formal assessment by nurse educators. Nurse educators are not employed by the hospital; they are affiliated with a training institution and are responsible for assessing the performance of trainees. Nurse educators did not participate in deliveries themselves but they could give advice to trainees during a delivery.

Owing to the high number of trainees observed in the present study, associations between the characteristics outlined in table 1 and whether deliveries were supervised were examined using an exact logistic regression to identify any potential confounders for trainees performing evidence-based practices. No significant associations were observed between patient/provider characteristics and whether a delivery was supervised.

Table 2 records the delivery practices observed during the present study and the medical staff overseeing the delivery.

When recording the evidence-based delivery practices focused on the health of the neonate, immediately establishing physical contact between patients and neonates was recorded in 74 (99%) deliveries, drying and covering the neonate within 30 seconds of delivery was recorded for 20 (27%) deliveries, and delaying of cord clamping until at least 1 minute after delivery was observed in 8 (11%) deliveries.