



CLINICAL ARTICLE

A strategy to increase the number of deliveries with skilled birth attendants in Kenya

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ABSTRACT

Objective: To increase the number of deliveries with skilled birth attendants (SBAs) in Kenyan health facilities, with assistance from traditional birth attendants (TBAs). **Methods:** In the Yatta district of Kenya, TBAs were recruited to attend meetings in which they were encouraged to educate pregnant women about the importance of delivering in health facilities; they were offered a small stipend for each pregnant woman they brought to a facility for SBA delivery. The primary outcome was the percentage of prenatal care patients who delivered at intervention health facilities compared with control facilities. **Results:** During the year preceding the intervention, 102/524 (19.5%) and 413/2068 (20.0%) prenatal care patients had SBA deliveries at intervention and control facilities, respectively. During the 1-year study period, 217/440 (49.3%) prenatal care patients delivered at intervention health facilities and 415/1995 (20.8%) delivered at control facilities ($P < 0.001$). Deliveries at intervention facilities increased 113% in the study year compared with the preceding year. **Conclusion:** The rate of SBA births in health facilities increased when TBAs were recruited and compensated for bringing women to local health facilities to deliver.

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1. Introduction

Maternal mortality is a tragically frequent event in many countries. A recent review reported 342 900 maternal deaths worldwide in 2008 [1], a large number of which occurred during labor or around the time of delivery (intrapartum). The medical complications of childbirth can also cause serious morbidity and mortality of the newborn. There are an estimated 904 000 intrapartum-related neonatal deaths—a leading cause of child mortality—each year [2]. The assistance of a skilled birth attendant (SBA), defined as an adequately trained nurse, midwife, or doctor, is considered a critical component of strategies to reduce both maternal and newborn mortality [3–5]. The international community has set targets for SBA births for 80% of all women by 2005, 85% by 2010, and 90% by 2015. In 2008, however, only 65.7% of women globally were attended to by a skilled attendant during pregnancy, childbirth, and immediately postpartum [6].

Kenya has a high maternal mortality ratio (MMR) and high neonatal mortality, neither of which has seen significant improvement over the past several decades. The 2008 MMR estimate was 413 per 100 000 live births—a small decrease from 494 in 1980 [1]. Neonatal mortality was 31 per 1000 live births during the 4 years preceding the 2008–2009 Kenya Demographic and Health Survey (KDHS) [7].

Neonatal mortality accounts for 43% of all infant deaths in Kenya [7]. The low number of SBA births is thought to be an important factor in the high MMR and the lack of improvement in maternal and neonatal survival in Kenya [3]. The Kenya Ministry of Health set a goal to increase the rate of deliveries conducted by skilled health staff to 90% by the year 2010 [8]. However, the rate of deliveries attended by SBAs has shown very little improvement since this goal was set. The 2003 KDHS reported that 41% of deliveries were attended by SBAs [9]; this rate increased to only 44% in the 2008–2009 KDHS [7]. In Eastern Province—where Yatta, the target district of the present study, is located—the SBA rate in 2008 was slightly lower, at 42.8%. Yatta recorded an SBA rate of only 7% in the most recent annual report [10].

Efforts to increase the number of SBA births have had little success thus far in Kenya. A study in 2 western districts of Kenya designed to improve the percentage of deliveries at health facilities showed no change in one and only a small increase in the other district [11]. The interventions in the 2 districts were described as “health facility-level interventions to increase the availability, quality, and utilisation of skilled maternity care throughout pregnancy, childbirth, and the postpartum period,” and in one of the districts “these interventions were complemented by a community-level BCC [behavioral change communication] campaign to increase use of skilled care before, during, and after childbirth” [11]. The study intervention did not incorporate traditional birth attendants (TBAs), who are often well known and respected in their communities and would probably influence a family’s decision regarding the chosen site of childbirth. Some districts of western Kenya have community midwives who can provide skilled care for home deliveries, although the number

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of SBA births remains very low in these communities [12]. In most of rural Kenya, SBAs are available only at health facilities.

Utilizing the services of a relative or a TBA during childbirth continues to be the norm in the poorest countries, where maternal mortality rates are highest [3]. Previous clinical practices in these extremely resource-limited settings have intended to address maternal mortality by providing training for TBAs to improve their skills. The ubiquitous presence of TBAs in even the most remote villages lends some logic to this strategy. However, evidence-based systematic reviews have concluded that decades of training programs for TBAs have not reduced maternal mortality [13,14]. Although most of the literature regarding the role of TBAs deals with training programs, there is increasing interest in the integration of TBAs into the formal healthcare system as a way to increase the number of SBA births. Byrne et al. [15] reviewed the studies of interventions designed to link TBAs with the healthcare system and the effect of “complementary activities” on skilled birth attendance, and described 4 activities that improved TBA integration and skilled birth attendance: careful selection of TBAs; community participation; health system development; and affordability changes. These complementary activities can require considerable resources for implementation, and it is not clear from the studies cited in the review which individual activities, alone or in combination, would be most effective.

The aim of the present study was to assess the effect on SBA births of a program that paid a small stipend to TBAs to bring pregnant women to health facilities and that encouraged TBAs to have a supportive role for the mother while SBAs managed labor and delivery.

2. Materials and methods

The study was conducted from March 1, 2011, to February 29, 2012, in Yatta district, which has a population of 153 541 and is located in Eastern Province. The number of health facilities in the district is in compliance with UNFPA/WHO guidelines for SBA/emergency obstetric care facilities [16]. There is limited access to healthcare services owing to poverty, remoteness of the widely dispersed villages, and lack of transportation. Most births take place at home in the absence of a trained health professional, often with the help of TBAs who have little or no formal training.

Two Ministry of Public Health and Sanitation (MOPHS) health facilities were chosen for the intervention (Katangi Health Center and Kisesini Dispensary), and other public health facilities in Yatta served as the controls (Tables 1 and 2). Two of the non-intervention Yatta public facilities were excluded because of incomplete data, and all

Table 1
Pre-intervention births and prenatal care patients.

MOH/MOPHS facility	Births	Prenatal care patients	Percentage ^a
Intervention facilities			
Kisesini Dispensary	28	105	26.7
Katangi Health Center	74	419	17.7
Total	102	524	19.5
Other Yatta district facilities			
Matuu District Hospital	342	860	39.8
Ikombe Dispensary	23	147	15.6
Kinyaata Dispensary	8	195	4.1
Kikesa Dispensary	4	205	1.9
Kitheuni Dispensary	3	92	3.3
Kisiiki Dispensary	2	225	0.9
Kithimani Dispensary	9	194	4.6
Mbembani Dispensary	1	18	5.6
Mutethya Dispensary	21	5	420.0
Ndalani Dispensary	0	83	0.0
Mamba Dispensary	0	44	0.0
Total	413	2068	20.0

^a Births/prenatal care.

Table 2
Post-intervention births and prenatal care patients.

MOH/MOPHS facility	Births	Prenatal care patients	Percentage ^a
Intervention facilities			
Kisesini Dispensary	47	82	57.3
Katangi Health Center	170	358	47.5
Total	217	440	49.3
Other Yatta district facilities			
Matuu District Hospital	245	722	33.9
Ikombe Dispensary	28	136	20.6
Kinyaata Dispensary	12	139	8.6
Kikesa Dispensary	17	232	7.3
Kitheuni Dispensary	12	118	10.2
Kisiiki Dispensary	6	247	2.4
Kithimani Dispensary	41	209	19.6
Mbembani Dispensary	1	17	5.9
Mutethya Dispensary	43	4	1075.0
Ndalani Dispensary	10	125	8.0
Mamba Dispensary	0	46	0.0
Total	415	1995	20.8

Abbreviations: MOH, Ministry of Health; MOPHS, Ministry of Public Health and Sanitation.

^a Births/prenatal care.

private facilities were excluded (Tables 3 and 4). The 2 intervention sites were chosen as a convenience sample because of ongoing clinical involvement by A.T. and a non-governmental organization (NGO; Global Health Partnerships).

The investigators and MOPHS staff conducted 2 meetings with groups of TBAs who worked in the catchment area of the intervention facilities. During these brief meetings, the 65 TBAs who attended were encouraged to educate pregnant women about the importance of delivery at the local health facility. Traditional birth attendants who wished to participate contacted the local nurse research coordinator. Pregnant women were recruited by TBAs at any point during their pregnancy prior to delivery. Every TBA was paid a small stipend as a per diem each time she accompanied a pregnant woman to deliver at a health facility. The amount of money—approximately US \$2.40—was chosen because it was the same as the amount paid to local volunteer community health workers. A MOPHS nurse working at the facility verified that a TBA accompanied the woman in labor and recorded the information in a register, which was maintained at the facility and reviewed by an investigator. Data were gathered from the records maintained at MOPHS facilities to document prenatal care visits, deliveries, and pregnant women who arrived in labor and delivered at a health facility with or without a TBA. Informed consent was obtained from the participating TBAs and the pregnant women who were brought to the facilities to deliver. The study was approved by the

Table 3
Pre-intervention births and prenatal care patients at excluded facilities.

MOH/MOPHS facility	Births	Prenatal care patients	Percentage ^a
Private/NGO Yatta district health facilities			
Matuu Mission	8	122	6.6
Matuu Nursing (8 months of data)	1	13	7.7
St Kizito	1	39	2.6
Kyazabe	0	4	0.0
Katangi Mission (8 months of data)	0	178	0.0
Tumaini	0	2	0.0
Total	10	358	2.8
Public (MOH) Yatta district facilities with incomplete data			
NYS-Mavoloni (4 months of data)	0	76	0.0
Kwamwatu (8 months of data)	1	7	14.3
Total	1	83	1.2

Abbreviations: MOH, Ministry of Health; MOPHS, Ministry of Public Health and Sanitation; NGO, non-governmental organization; NYS, National Youth Services.

^a Births/prenatal care.

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