ORIGINAL RESEARCH ARTICLE

"Childbirth is not a Sickness; A Woman Should Struggle to Give Birth": Exploring Continuing Popularity of Home Births in Western Kenya

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Abstract

More than 95% of Kenyan women receive antenatal care (ANC) and only 62% access skilled delivery. To explore women's opinion on delivery location, 20 focus group discussions were conducted at an urban and rural setting in western Kenya. Participants included health care workers, traditional birth attendants (TBAs), and women who attended at least four ANC visits and delivered. Six in-depth interviews were also conducted with a combination of women who gave birth in a facility and at home. Discussions were digitally recorded and transcribed for analysis. Data was subjected to content analysis for deductive and inductive codes. Emergent themes were logically organized to address the study topic. Findings revealed that delivery services were sought from both skilled attendants and TBAs. TBAs remain popular despite lack of acknowledgement from mainstream health care. Choice of delivery is influenced by financial access, availability and quality of skilled delivery services, physical access, culture, ignorance about childbirth processes, easy access to familiar TBAs, fear of hospitals and hospital procedures, and social stigma. Appreciation of TBA referral role, quality maternity service, and reproductive health education can encourage facility deliveries. Formal and informal health workers should cooperate in innovative ways and ensure safe motherhood in Kenya. *(Afr J Reprod Health 2018; 22[1]: 85-93).*

Keywords: Delivery decision; Traditional birth attendants; Skilled delivery; Focus group discussions; Kenya

Résumé

Plus de 95% des femmes kenyanes reçoivent des soins prénataux (ANC) et seulement 62% accèdent à des accouchements qualifiés. Pour explorer l'opinion des femmes sur le lieu de l'accouchement, 20 discussions de groupe ont été menées dans un cadre urbain et rural dans l'ouest du Kenya. Les participants comprenaient des travailleurs de la santé, des accoucheuses traditionnelles et des femmes qui ont assisté à au moins quatre visites aux soins prénatals et ont accouchée. Six entretiens approfondis ont également été menés avec une combinaison de femmes qui ont accouché dans un établissement et à domicile. Les discussions ont été enregistrées numériquement et transcrites pour analyse. Les données ont été soumises à une analyse de contenu pour les codes déductifs et inductifs. Des thèmes émergents ont été logiquement organisés pour aborder le sujet de l'étude. Les constatations ont révélé que les services d'accouchement étaient recherchés auprès des accoucheurs qualifiés et des accoucheuses traditionnelles. Les accoucheuses traditionnelles restent populaires malgré le manque de reconnaissance des soins de santé traditionnels. Le choix de l'accouchement est influencé par l'accès financier, la disponibilité et la qualité des services d'accouchement, l'accès physique, la culture, l'ignorance des processus d'accouchement, l'accès facile aux accoucheuses traditionnelles, la peur des hôpitaux et des procédures hospitalières et la stigmatisation sociale. L'appréciation du rôle de référence des AT, de la qualité du service de maternité et de l'éducation en matière de la santé de a reproduction peut encourager les accouchements dans les établissements. Les agents de santé formels et informels devraient coopérer de manière innovante et assurer une maternité sans risques au Kenya. *(Afr J Reprod Health 2018; 22[1]: 85-93).*

Mots-clés: Décision de mise en œuvre accoucheuses traditionnelles, accouchement qualifiée, discussions à groupe cible, Kenya

Introduction

The global community witnessed a transition from Millennium development Goals(MDGs) to Sustainable Development Goals (SDGs) after implementing the former for the period 1990-2015[1]. Despite some improvements, MDGs 4 and 5,which aim to improve maternal health and reduce child mortality remain unmet within low and middle-income countries (LMIC)[2-5]. Complications during pregnancy and childbirth continue to pose a threat to women and newborns worldwide[5,6]. The 2005 global Maternal Mortality Report shows LMIC account for 99% (533,000) of maternal deaths and 270,000 occurred in sub-Saharan Africa region[7]. To achieve MDG 4 and 5, emphasis has been placed on increasing ANC and increasing skilled attendance during delivery[4].

The Kenya Demographic and Health Survey (KDHS) estimates a maternal mortality rate of 362 per 100,000 live births. In 2014, KDHS showed many women still die from childbirth-related problems[8]. Given the high HIV prevalence among Kenyan women, it is also critical to ensure safe and sanitary deliveries to prevent maternal to child HIV transmission[9]. Kenya has high rates of ANC attendance, but there are fairly low rates of skilled deliveries and about half do not receive postnatal care[8]. A woman who delivers in the absence of a skilled birth attendant places herself and her baby at risk of adverse outcomes[10]. Skilled deliveries have increased in Kenya but only 62% are assisted by a health professional (doctor, nurse or midwife) with 19% attended by a traditional birth attendant (TBA), 13% attended by relatives and friends, and 5% of women delivering alone[8]. Noteworthy, women who deliver with a skilled birth attendant are more likely to seek early postpartum care[8,11].

While 96% of Kenyan women receive ANC from a medical professional, the frequency and timing of visits vary[8]. The World Health Organization (WHO) recommends four ANC visits for uncomplicated pregnancies (starting in the first trimester), but only 20% of Kenyan women receive ANC in the first trimester. Furthermore, the proportion of women who make an ANC visit four or more times has increased from 47 to 58% since the 2008-2009KDHS[8]. However, the influence of ANC attendance on uptake of skilled delivery remains inconclusive[8].

Past studies have explored factors associated with delivery choices. They include cost, quality of care, distance, transportation, gender issues, education, cultural norms, and influence of significant others[6,10,12,13].Affordable public health facilities are often far, over-crowded, unsanitary, unfriendly and uncomfortable[13,14]. Consequently, many women choose to deliver in inadequately equipped clinics[15]and this increases health risks for the mothers and their newborn babies.

In Kenya, unskilled deliveries occur due to distance, mode of transport and influence of significant others[8,13]. A study from Kenya provides data on TBA beliefs and practices that help explain why women shy away from skilled delivery, nevertheless, more studies comparing perspectives of women, TBAs and health care workers (HCWs) would be more insightful[16]. To obtain an in-depth understanding of factors that influence mothers' choice of delivery, we adopted a qualitative study design involving recent mothers, TBAs and HCWs. Focus group discussions (FGDs) and in-depth interviews (IDIs) were used to gain insights and perceptions on choice of delivery among respondents drawn from urban and rural settings in western, Kenya.

Methods

This study used qualitative methods to explore factors that influence women's decisions surrounding childbirth as detailed in a preceding paper focusing on post-partum family planning[17]. It also looks at women's perceptions of "skilled" versus "unskilled" delivery care, and whether delivery choices differ with urban or rural context. The rural site was Port Victoria and Eldoret town served as the urban site[17]. Purposive sampling was used to select the two sites and to identify and recruit the mothers. HCWs engaged were recruited from the Mother and Child Health departments at Port Victoria District Hospital and Moi Teaching and Referral Hospital, Eldoret. At both sites, health facility staff and outreach health workers

assisted with the recruitment of study participants.

A total of twenty FGDs were used consisting of HCWs, four FGDs with TBAs, six sessions involving women who had used skilled delivery and six others with women who delivered at home. All mothers had attended at least four ANC and given birth within three years of the study. Furthermore, six IDIs with mothers provided specific experiences to complement the more general data from the FGDs.

Data collection and analysis

All data collection sessions were led by trained research assistants. The FGD and IDI guides with mothers covered ANC, counseling and support during pregnancy; decisions surrounding delivery; perceptions of skilled deliveries; and perceptions on home births. The TBAs sessions discussed the work of TBAs; TBA perceptions of women's' delivery choices; benefits of delivering with a TBA; and TBA referral role to health facilities. The HCWs sessions covered the role of HCWs in delivery, counseling and decisions surrounding delivery; and their perceptions of skilled and unskilled health deliveries.

A demographic questionnaire for TBAs collected data on age, tribe, education, years of experience, TBA training, and means of income. The mothers' questionnaire included age, tribe, relationship status, level of education and employment status. Ethical approval was obtained from The George Washington University, USA, and Moi University, Eldoret. Voluntary consent was observed, and participants received transport reimbursement. FGDs were conducted largely in Swahili and English. Each session had 7-12 participants and took on average 1.5 hours. Data was collected at both sites between May and July 2010 and were digitally recorded. Descriptive statistics summarized demographic data while qualitative data was transcribed and translated then coded by four study team members and analyzed for thematic content[17].

Results

Demographic data

Participants' demographics details have been provided in the preceding paper that focused on post-partum family planning[17]. There were 175 participants with 94 participants from Port Victoria and 81 from Eldoret. There were 31 HCWs, 32 TBAs and 112 mothers. TBAs were 25 to 71 years (mean=53) and one third had not attended school. Most were trained by a family member and at least 18 reported 15 years of experience. More than half (N=19) reported engagement in diverse activities.

The mothers were 18 to 39 years (mean=26 years) and there was much more tribal diversity in Eldoret. Most (80%) were married and 90% lacked formal employment. Nearly 20% (N=22) held secondary certificates and four completed university level. Eldoret participants had higher education than those in Port Victoria. Findings from the FGDs and interviews were not unique to location (urban versus rural) and IDI data did not raise new codes - They confirmed themes raised in the group sessions[17].

Counseling and decisions surrounding delivery location

When a mother in Eldoret or Port Victoria considers where to deliver, she must weigh the advice from HCWs, friends, and family. Use of formal HCWs' counsel depends on individual mothers; some heed their advice while others ignore it. For some mothers, patronizing husbands, parents, or in-laws interfere with their utilization of information provided by HCWs. Nonetheless, there is ample indication that HCWs think their counsel is valued by mothers. They see themselves as an important source of information that is used by pregnant mothers in making birth plans, engaging in prevention of mother to child HIV transmission (PMTCT), understanding the role of the National Health Insurance Fund (NHIF), and malaria prevention.

Similarly, TBAs thought their counsel is valued by the mothers they serve. Some mothers even named their children after the TBA. Even so, their emphasis on the importance of hospital deliveries seems to fall on deaf ears as some mothers routinely opt for home deliveries. TBAs report they consistently tell pregnant mothers the advantages of health facility deliveries including immunization and weighing of newborns; management of complications for both mother and

Table 1: Reasons why Women Choose Home Births: Opinions from Eldoret and Port Victoria, Kenya

Reasons for choosing home births	Source: Focus groups
Free delivery of the very poor by TBAs	All TBA FGDs
Costs	All sources
Harsh and/or negligent providers at the facility	WDH*, Eldoret 1, 2, 3; WDHF*, Port Victoria FGD 1, 2, 3; WDH, Port Victoria 1, 2, 3; Mixed HCWs, Eldoret, FGD 2; Mixed HCWs, Port Victoria, FGD 1; All TBA FGDs
Distance to the facility and poor infrastructure	WDH, Eldoret 1; WDHF, Port Victoria FGD 1, 2; WDH, Port Victoria 1, 2, 3; Nurses, Eldoret, FGD 1; Mixed HCWs, FGD 2, Eldoret; Mixed HCWs, Port Victoria, FGD 1, 2
Ignorance about hospital care and a view of delivery as 'normal illness-free process' or 'dependent on God's wishes'	WDH, Eldoret 1; WDH, Eldoret 1, 2, 3; WDHF, Port Victoria FGD 3; WDH, Port Victoria 1, 2; Nurses, Eldoret, FGD 1; Mixed HCWs, FGD 2, Port Victoria; Mixed HCWs, FGD 2, Eldoret
Familiarity and proximity of TBAs and other women to help in home delivery	WDHF, Eldoret 1; WDH, Eldoret 1, 2; WDHF, Port Victoria FGD 1; WDH, Port Victoria 3; Mixed HCWs, Eldoret, FGD 2; Mixed HCWs, Port Victoria, FGD 2; TBAs, Eldoret, FGD 1, 2
Familiar successful routines in home births	WDH, Eldoret, 3; WDHF, Port Victoria FGD 1, 2, 3; Nurses, Eldoret, FGD 1; Mixed HCWs, Eldoret, FGD 2; Mixed HCWs, Eldoret, FGD 2, TBAs, Eldoret, FGD 1
Fear of hospital procedures	WDHF, Eldoret 1; WDH, Eldoret 1, 2, 3; WDHF, Port Victoria FGD 1, 2; WDH, Port Victoria 2; TBAs, Eldoret, FGD 1, 2
Several modes of TBA payment	WDH, Eldoret 1, 3; Mixed HCWs, Port Victoria, FGD 1, 2; Eldoret,Nurses, FGD 1; All TBA FGDs
Warm TBA attitude and gentle care	WDH, Eldoret 3; WDHF, Port Victoria FGD 1; Mixed HCWs, Port Victoria, FGD 1; TBAs, Eldoret, FGD 1, 2; TBAs, Port Victoria, FGD 1
Precipitate labor	WDH, Eldoret 1; WDH, Port Victoria 1, 2, 3; TBAs, Eldoret, FGD 2; TBAs, Port Victoria, FGD 1
Preceding bad experiences at the hospital	WDH, Eldoret 3; WDHF, Eldoret 1; Nurses, Eldoret, FGD 1; Mixed HCWs, Eldoret, FGD 2; TBAs, Eldoret, FGD 1, 2
Very young or trainee providers at the hospital	WDHF, Eldoret 3; WDH, Eldoret 1, 2, 3; WDHF, Port Victoria FGD 1; TBAs, Eldoret, FGD 1
Influence of decision makers other than the pregnant mothers	WDH, Port Victoria 2; Nurses, Eldoret, FGD 1; Mixed HCWs, Eldoret, FGD 2; Mixed HCWs, Port Victoria, FGD 1
Fear of HIV testing and knowledge of HIV status	WDH, Eldoret 3; Mixed HCWs, Port Victoria, FGD 2; TBAs, Eldoret, FGD 2; TBAs, Port Victoria, FGD 2
Sex of the provider affects a mother's comfort: the gentle female TBA is most popular	WDHF, Port Victoria FGD 2; WDH, Port Victoria 3; Nurses, Eldoret, FGD 1; TBAs, Eldoret, FGD 1
Earlier training of TBAs by the government encourages home births	Mixed HCWs , Eldoret, FGD 2; TBAs, Port Victoria, FGD 1, 2
Rumors and allied fears about facility care	Nurses, FGD 1, Eldoret; Mixed HCWs, FGD 2, Eldoret; Mixed HCWs, FGD 1, Port Victoria
Flexible birthing position in home delivery	Nurses, Eldoret, FGD 1;TBAs, Port Victoria, FGD 1
Availability TBA sponging and massage services	TBAs, Eldoret, FGD 1;TBAs, Port Victoria, FGD 1
Shortage of facility staff	Nurses, Eldoret, FGD 1; Mixed HCWs, Port Victoria, FGD 2
Availability of herbal relief at home	WDHF, Port Victoria FGD 3
Birthing rites are observed in home deliveries	Nurses, Eldoret, FGD 1
Religious beliefs prescribe care uptake	Nurses, Eldoret, FGD 1
Shortage of supplies at the facility	Nurses, Eldoret, FGD 1
Traditions: 'how they were taught by their mothers'	WDHF, Eldoret 3
Stigma associated with hospital births	Mixed HCWs, FGD 2, Port Victoria
Fear of children being stolen at the health facility	WDHF, Port Victoria FGD 1
Facilities demand for ANC cards at birth	TBAs, Eldoret, FGD 2

* WDH refers to women who delivered at home; WDHF refers to women who delivered at a health facility

Table 2: Popular Ideas among Mothers on how to Improve Maternity Services at Health Facilities in Eldoret and Port Victoria, Kenya

How to improve maternity care	Source: Focus groups
HCWs should be more affectionate, communicate better, and be less abusive	WDHF*, Eldoret 1; WDH, Eldoret 1, 2, 3; WDHF, Port Victoria FGD 1; WDH, Port Victoria 2; TBAs, Eldoret, FGD 2; TBAs, Port Victoria, FGD 1
HCWs should provide quick and prioritized care	WDHF, Eldoret 1, 3; WDH*, Eldoret 1; WDHF, Port Victoria FGD 1; WDH, Port Victoria 1, 3
Have free delivery services	WDH, Eldoret 1; WDHF, Port Victoria FGD 2; WDH, Port Victoria 1, 3
Reliable electricity and water supply	WDHF, Port Victoria FGD 1, 2, 3; WDH, Port Victoria 3
Mothers should get basic maternity supplies for free	WDHF, Port Victoria FGD 2; WDH, Port Victoria 1, 3
Increase number of wards and beds in the facilities	WDHF, Eldoret 1; WDHF, Port Victoria FGD 1; WDH, Port Victoria 2
Have reduced costs for delivery services	WDHF, Eldoret 3; TBAs, Eldoret, FGD 2
Provide free transportation before and/or after delivery	WDH, Eldoret 2; WDHF, Port Victoria FGD 2
Student/trainees should be supervised, and they should not exhaust mothers	WDHF, Eldoret 1; WDH, Eldoret 1, 3
Employ more staff	WDHF, Eldoret 3; WDH, Port Victoria 2
Increase number of facilities	WDH, Eldoret 1; WDH, Port Victoria 2
Provide adequate and well-cooked food	WDHF, Port Victoria FGD 1, 2
Supply hot water for bathing	WDHF, Port Victoria FGD 1, 3
Improve facility fittings and hygiene	WDHF, Port Victoria FGD 1, 3
Increase maternity privacy in the wards	WDHF, Port Victoria FGD 1; WDH, Port Victoria 2
Eradicate corruption at the health facility	WDHF, Port Victoria FGD 1; WDH, Port Victoria 2
HCWs should not show favoritism	WDHF, Eldoret FGD 1;WDHF, Port Victoria FGD 1
HCWs should be more alert and identify babies appropriately	WDHF, Eldoret 3; WDH, Eldoret 1

* WDH refers to a woman who delivered at home; WDHF refers to a woman who delivered at a health facility

child; access to skilled personnel, necessary drugs, equipment, family planning and other supplies; HIV testing and PMTCT; delivery in a hygienic environment; and official notification of births. Nonetheless, some mothers were characterized as ignorant and stubborn for choosing home births even after extensive counseling on the importance of skilled delivery.

Home births versus skilled deliveries: The reasoning behind a choice

Overall, study findings indicated that health facilities were considered the most ideal and safest place for delivery. However, all respondents agreed that both skilled delivery and home births were commonplace. Table 1 provides all reasons - beginning with the most widely cited in all FGDs - for uptake of home births in Eldoret and Port Victoria. Mothers continued to give birth at home due to financial barriers, harsh treatment by health workers, physical access, assumption that delivery 'is a normal process' that does not require skilled attendants, availability of familiar TBAs who observed local childbirth traditions and accepted several modes of payment, fear of hospitals and hospital procedures, unavailability of quality delivery services at the health facility, and social stigma. Some husbands were reported as insisting on "natural" home deliveries that ensured wives 'were not recuperating for long,' in costly hospitals.

Mothers extensively discussed reasons why skilled deliveries matter. Their opinions, in order of popularity included: available care for complicated deliveries; access to HIV care; availability of necessary drugs, equipment, other supplies and skilled personnel; hygienic facilities; immediate immunization service for babies; discovery and management of abnormalities and ill-health; access to important documents like ANC cards and birth certificates; access to free mosquito nets and milk; and access to quality advice on post-natal care of mother and child. However, HCWs described numerous gaps at the

health facility that can discourage uptake of care including shortage of equipment and supplies, shortage of staff, lack of staff refresher training, poor infrastructure and shortage of ambulances, and challenges associated with revealing positive HIV test results to newly diagnosed delivering women.

Table 2 provides potential areas for improvement at the health facilities. Various areas discussed included: a call for health workers to be more affectionate and communicate better with their clients; there should be provision of quick and prioritized care; consideration of free delivery services and basic maternity supplies; provision of reliable electricity and water supply; and consideration for increment in number of wards and beds in the facilities. Some health workers thought that in some circumstances, it was sensible to consider homebirths. Given the readily available retired skilled HCWs and seasoned TBAs, they argued that delivering mothers can be referred to them for immediate assistance, especially when precipitate labor occurs. Similarly, TBAs also proposed a marriage of TBA care and skilled services. In such a model, the TBAs become level one Ministry of Health (MOH) caregivers at the household level who consistently advocate for and ensure a working referral system.

Discussion

In this study, factors that influence choice of delivery in rural and urban settings in western Kenya were explored. In general, emergent themes were similar at both sites. Study findings show that health facilities are held to be the most ideal and safest place for delivery, even though home births remain common. Pregnant mothers in Eldoret and Port Victoria receive advice from HCWs, friends, and family. Significant others are known to influence decision making about birth location. The influence of a male partner remains important in Kenya and women often defer key decision making to them[18]. Similarly, joint decision-making in Uganda revealed a higher likelihood of skilled delivery compared to when women are sole decision-makers[19]. This study showed that some women consider delivery 'a normal biological function' that does not require skilled attendants. Similar findings have been noted in Ethiopia[20]. More health education is thus needed to sensitize mothers on advantages of skilled delivery. Significant others, especially husbands also need education on pregnancy and delivery matters so that they can support skilled delivery options.

The study corroborates previous research that has demonstrated that choice of delivery is not simply influenced by low levels of knowledge about place of delivery but by personal, economic, social-cultural, and other barriers including physical access, short-comings of health facilities among others[13,21,22]. Proximity to a health facility and access to transportation have been associated with skilled deliveries in Uganda[23]. Access to emergency transport service and to minimal infrastructure have been known to encourage facility deliveries in Nairobi[24]. Just like in previous studies[10,25],this study reveals that poor physical access, long distance, and economic deprivations are important barriers to skilled delivery in western Kenya. Further, cultural birth practices cannot be observed in the hospitals. Therefore, considerations should be made to mesh the two belief systems (traditional and biomedical) in order to attract facility deliveries. Indeed, some modifications such as allowing delivering mothers to have companions, or the safe keeping of the placenta - for home burials thereafter - would require minimal input from the facility side[23].

Study findings revealed numerous health system barriers to skilled delivery uptake. These barriers included few health facilities, insufficient maternity wards and beds; harsh, slow, and negligent health workers; costly delivery services and maternity supplies; and unreliable electricity and water supply. For women to routinely opt for skilled deliveries, the government of Kenya and relevant development partners must think of, and implement measures to alleviate facility shortcomings[25].

Gaining an understanding of women's views before formulating policy for maternity services is a key step towards appreciation of current limitations and creation of innovative evidence-based maternity policies[26]. In this study, a call for health workers to be more affectionate and communicate better; provision of quick and prioritized care; consideration of free delivery

services and basic maternity supplies; provision of reliable electricity and water supply; and consideration for increment in number of wards and beds in the facilities were proposed as possible measures to increase uptake of skilled delivery.

This study indicates a need to re-visit the role of the TBA in Kenya. TBAs are popular because they are cheap (or free), close to the women (geographically, culturally, language-wise, and by social status), and provide a way out for those who fear facility procedures[27,28]. The illegality of TBAs and the disengagement of the Ministry of Health (MOH) deserve attention. Merging positive aspects of TBA work with health facility care will enhance safe motherhood[28]. Research from Samoa shows TBAs can work on their own and in collaboration with individual HCWs or facilities and can thus be integrated into the conventional health care. Formal engagement of TBAs can directly improve referral to skilled services and maintenance of birth records[29]. The MOH needs to recognize that TBAs are informal providers who can facilitate select mother-child health programs at the household level[30].

Standard ANC counseling does not in any way guarantee proper planning for both the pregnant women and their partners on the choice of delivery[31]. Although all women in this study from both sites made at least four ANC visits, some did not deliver in a health facility. Nevertheless, increased access to appropriate transport for mothers in labor, improvement of delivery experiences and outcomes at the health facilities, and deliberate health education should increase uptake of skilled delivery in Kenya[25].

The main strength of this study was that it provided rich and triangulated insights on maternal delivery choices from mothers, TBAs and HCWs at the two sites. It also gave mothers and TBAs a rare opportunity to share their opinions. Nonetheless, there were limitations. Study findings cannot be generalized across Kenya due to purposive sampling and low number of sites used; nevertheless, thematic saturation was reached by the time all sessions were completed. Secondly, mothers and TBA who chose to participate may have been different from their peers. Lastly, social desirability may have influenced responses to some questions; however, such an effect was moderated by having a free and confidential atmosphere and a private space for all sessions. While this study has provided insights on issues concerning choice of maternal delivery, it has also generated additional questions for further research. Given the pros and cons identified in facility and home deliveries, further research should explore how maternal services can be continually improved while also building capacity in TBAs to become formally recognized community-based referral health workers.

Conclusion

This study sought to explore factors that influence mothers' choice of delivery location in Eldoret (urban) and Port Victoria (rural), Kenya. It revealed that decisions pertaining to where a woman gives birth are influenced by a confluence of factors including financial access, physical access, past birth experiences, traditions, quality and availability of skilled health services and social stigma. Delivery services are sought from skilled attendants as well as home attendants. Noteworthy, TBAs remain popular despite being frowned upon by mainstream health care. It is hoped that ultimately, notwithstanding resource limitations, both formal and informal health systems can work together in innovative ways to facilitate safe motherhood in Kenya.

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Contribution of Authors

VN, JB, JK and NN designed the study and collected data.VN, BKJK and NN analysed the data. VN prepared the manuscript and all authors mentioned in this article approved the manuscript for publication.

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