STUDY REPORT

Traditional Birth Attendants in Kwale County: A description of practices of traditional birth attendants and an evaluation of factors influencing women to deliver outside the formal health care system in Kwale County

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List of Abbreviations

ANC	Antenatal Care
CS	Caesarean Section
FGD	Focus Group Discussion
KAP	Knowledge, Skills, and Attitude
MMR	Maternal Mortality Ratio
MOH	Ministry of Health
TBA	Traditional Birth Attendant
CHV	Community Health Volunteer
WHO	World Health Organization

Executive Summary

Pregnancy and delivery are at the same time both natural, healthy processes and risky moments in the life of every woman and every "human to be". With good quality care during pregnancy and delivery, serious illness or death caused by it are very rare. Where such is missing, illness and death take a heavy toll.

Many strategies have been put in place by governments worldwide to ensure safe pregnancy and delivery. Despite such efforts, in many countries including Kenya, serious illness and death due to pregnancy and delivery are still common. Over the past decades, the government of Kenya has encouraged antenatal care (ANC) visits and delivery in formal health facilities. It has discouraged women from delivering with traditional birth attendants (TBAs). A TBA is a person who assists the mother during childbirth and initially acquired her skills by delivering babies herself or through apprenticeship with other TBAs. Practices and experience of TBAs differ over various regions in the world and the relative importance of the various factors that have been found to influence whether a woman will deliver with a TBA of a formally trained health worker are not known.

Despite policies to discourage it, a large proportion of Kenyan women still delivers with TBAs, also in Kwale County. This mixed methods study consisted of a community-based knowledge, attitudes and practices (KAP) study with qualitative and quantitative components and six audio-recorded focus group discussions (FGDs). The KAP-study included 212 women who delivered outside the formal system in the last five years and investigated the knowledge, attitudes and practices of women in Kwale on pregnancy and delivery to understand the relative importance of various factors influencing the place of delivery. The FGDs with a total of 40 TBAs investigated the actual practices of TBAs in Kwale to better understand how they deliver their services. Data collection was done between September and December 2018 in Kinango and Matuga, two of the four sub-counties of Kwale County.

From the KAP-Study we found that the knowledge of most women on pregnancy and delivery is reasonably good, for example when it came to the general awareness of the importance of breastfeeding (85.8%), attending ANC (61.8%), eating a balanced diet (55.4%), and the awareness of danger signs during pregnancy (62.3% could mention correctly at least two danger signs). As much as they were aware of the importance of breast feeding, there was still doubt however whether it was better for the health of the baby than formula milk. Other areas with room for improvement of knowledge were family planning and awareness of the risks of delivery in very young women and those who have had have many children. In addition, the study brought out clearly that the attitudes of those women towards the formal system were positive, despite all of them having delivered at home. For example, overall the interviewed women agreed that a woman should plan in advance where to give birth, that delivering at home is risky, that babies are at a lower risk of dying when delivering in a facility and that formal healthcare workers are more experienced than TBAs. In line with these attitudes, the majority of the respondents in the KAP-study had not planned to deliver outside the formal healthcare system but ended up delivering at home because the formal system was not available or accessible. 72% of the women mentioned inaccessibility of the health facility as reason for home deliver, due to distance (55% indicated that the nearest facility is further than 1 hour walk away), limited opening hours (closed during weekends and at night), or absence of health workers (strikes and other reasons). The second most common reason mentioned by 52% of the women were costs related to delivering in a health facility. Only about a quarter (26%) had planned to deliver at home, 50% had planned to deliver in a health facility, and another quarter (24%) had not planned at all. Only about a quarter (26%) said they would go back to the same TBA next time despite almost all (96.5%) saying that they were satisfied with the services of the birth attendant during their delivery.

From the FGDs it emerged that the practice of TBAs is strongly embedded in family relations. Most TBAs had acquired their skills through first observing and assisting a female family member, mostly mother, grandmother or mother-in-law who was also a TBA. As elderly women in the community, they are expected to assist their daughters, daughters-in-law and grand-daughters during their deliveries. It also became clear that over the last 10 – 20 years, the delivery practice of TBAs has changed a lot moving away from a midwife role to a birth companion role. Changed government policies and emphasis on facility based, skilled delivery have resulted in older TBAs becoming attached to formal health facilities as community health volunteers (CHVs) and equally younger CHVs became recognized by the community as TBAs. The linkage to the health facility and increased emphasis on health education appears to have lessened the embedding in family relations. This reduced embedding in family relations and the change from a midwife to birth companion has changed the expectations of TBA for pay. They expect more, as actual costs are made when deliveries do not take place at home. However, the actual payments are less, as women appear to be less willing to pay for the supportive rather than the midwifery role. TBAs emphasized most that women like them for their availability and their kindness, caring and supportive attitude. Some practices still continue with massaging during pregnancy and at the onset of delivery still being common everywhere and, especially in more remote areas, the use of traditional medicine. Despite this on-going change of role, it also became equally clear that without improved access, the need for delivery services of TBAs continues to exist despite it not being line with the official government policies. In line with the findings of the KAP-study, lack of access to formal facilities and formally trained health workers is what still necessitates the presence of alternative care givers, TBAs, in the community. This can create tension, for example when it entails supplying TBAs with instruments and consumables to conduct unavoidable home deliveries viz-a-viz the official policy against home deliveries.

Based on the findings of the study, we can first of all recommend that the Ministry of Health (MOH) of Kwale County government should continue to improve access to essential obstetric care services 24/7 at less than 1 hour walk from peoples' homes to improve the outcomes of pregnancy and delivery in Kwale. However until that has been fully achieved, the MOH should support bridging initiatives to assist women during delivery. This could be through supporting the TBAs or the pregnant women with requirements for emergency home delivery if they live far away from health facilities which are open 24/7. Alternatively, innovative ways of ensuring transport for women in labour anywhere, anytime might turn out to be a very efficient method to overcome the core factors leading to home delivery and will also address the core concern of additional expenses made by TBAs when accompanying women. Such bridging initiatives could help to strengthen the ties between TBAs and the formal healthcare system and reduce delays in reaching health facilities and referrals which too often result in maternal and infant morbidity or even death. Only when standard essential and emergency obstetric care services are available for everyone at any time at less than 1 hour walk, then it becomes relevant to focus on the minority which had other, more socio-cultural reasons, though often accompanied by concerns about access and costs, to deliver at home.

1 Introduction

Pregnancy and delivery are at the same time both natural, healthy processes and risky moments in the life of every woman and every "human to be". Preventing death and disability arising from these processes continues to be a major concern. Over the last decades, in many countries, a main strategy by many governments to address this has been the emphasis on delivery in formal healthcare institutions where qualified healthcare staff are employed. Despite this, in many places where maternal mortality and disability are high, many women still deliver at home with traditional birth attendants (TBAs). A TBA is a person who assists the mother during childbirth and initially acquired her skills by delivering babies herself or through apprenticeship to other TBAs (WHO, 1992). Kenya has high numbers of home deliveries. Through this study, we explored the reasons why women in one specific county, Kwale, deliver outside the formal health system. In addition, we investigated what the practice of TBAs in Kwale actually entails. What is it that women like about delivering with TBAs, and what can be learnt about the TBAs' practices that can inform interventions if it would become apparent that adverse practices are present, or that could help to improve the formal system.

1.1 Literature review

When appropriate good quality care is available for every pregnant woman, maternal mortality is rare, less than one pregnant woman dying for every 10,000 babies born alive. Where such care is missing, maternal mortality soars with one or even more women dying for every 200 babies born alive (WHO, 2015). Especially in developing countries, pregnancy and childbirth related complications lead to high rates of maternal death and disability (National Council for Population and Development, 2015). Structural factors that have been identified as contributing to high maternal mortality rates in Kenya are limited availability, lack of access and low utilization of formal health services; poor availability of basic emergency obstetric care; delays in seeking formal health care; and limited national commitment of resources for maternal health. (Government of Kenya, 2014). Major causes of these deaths are prolonged/obstructed labour, complications from unsafe abortion, haemorrhage, malaria during pregnancy, anaemia, and sepsis (KNBS, 2015). Notably, most of these deaths and disabilities are preventable with appropriate, quality care during pregnancy and delivery.

Safe motherhood is a worldwide initiative established in 1987 which aims to reduce the amount of death and illness associated with pregnancy and delivery. To achieve this, it concentrated on three main strategies: skilled attendance at all births; access to quality emergency obstetrical care; and access to quality reproductive health care, including family planning and safe post-abortion care (Stars, 2006). All three strategies require women accessing formal health facilities or specialized birth centres, or skilled attendants reaching out to women in their homes. It was translated into the millennium development goal to improve maternal health, with the targets of reducing maternal mortality ratio (MMR) by 75% between 1990 and 2015 and achieving universal access to reproductive health by 2015 (UN, 2000).

Though in the eighties, the World Health Organization promoted TBA training as one strategy to reduce maternal and neonatal mortality, in the nineties critical voices of such programs gained strength. To date, evidence about the effect of TBA training shows improvement in knowledge, skills, and attitudes, but remains inconclusive on improvements on neonatal and maternal outcome (Buekens, 2003; Sibley et all, 2007). Against this background, Kenya, like many other countries, has since then put effort to implement policies and interventions aimed at improving attendance of ANC clinics and delivery in health facilities by a formally trained birth attendant rather than continuing to support TBA training. Specific interventions and policies are directed towards reducing the distance between health facilities and in ensuring that in each health facility, there is staff who is qualified to

conduct deliveries (Wanyua, 2015). Furthermore, based on evidence that the WHO guidelines promoting free maternity care improve the quality of care, can be effective, reach the poor, and that they are quite acceptable among clients (Birungi & Onyango-Ouma, 2006; Witter, 2009), all ANC services and deliveries in government facilities are since July 2013 conducted free of charge (Wamalwa, 2015). In addition, the Kenyan government has supported community strategies whereby community health volunteers give key health messages to community members including antenatal and postnatal women.

Despite all these efforts TBAs have continued to be culturally and socially accepted in many parts of Kenya, no less in Kwale, despite the many challenges they face when handling pregnant women. The policies and interventions for safe motherhood focusing on ANC and delivery at formal health facilities, have had some effect with the percentage of women in Kenya attending at least four ANC clinics increasing from 47% to 58% and deliveries in health facilities increasing from 43% to 61% between 2008 and 2014 (KNBS, 2010; KNBS et al, 2015). However, there is still a large group of women who does not attend ANC clinics sufficiently and specifically who do not deliver in a health facility. This illustrates that healthcare-seeking patterns are not easily changed by policy alone but are determined by complex interrelationships between socio-economic and physical environment, along with individual characteristics, attitudes and behaviours. Especially in poor, rural and remote settings, safe motherhood initiatives like the provision of free maternity services are underutilized (GOK, 2007) which is likely to have contributed to the variation in MMR between various parts of Kenya.

Several factors, in addition to costs, have been identified in various countries as reasons for not seeking care from formal healthcare providers. They include: distance from the facility, attitude of personnel, costs of transport, age and parity, lack of knowledge and awareness about delivery in health facilities, fear of being done CS, unwillingness to be assisted by male doctors, cultural practices, religious convictions, and economic status. The contribution of each of these factors to the decision of the expectant mother is not known (Addai, 2000; Titaley, 2010; Esena & Sappor, 2013a; Esena & Sappor, 2013b; Mannava, 2015; Sarker, 2016). In a study carried out in Kilifi County, neighbouring Kwale county to the North, Moindi et al found that several of these factors were associated with home deliveries in univariate analysis, but in multivariate analysis, only long distance from a health facility remained as a significant factor (Moindi, 2016).

Many studies in several rich and poor countries found that the level of education of the women is also positively associated with their ability to understand the maternity education by health institutions and consequently those with higher levels of education are better in taking up the maternity care services through practices like seeking the best hospital for doing deliveries, engaging in good breast feeding practices and regularly seeking postnatal care services. Though in general women in higher socio-economic groups use maternal health services more frequently than women in lower socio-economic groups, other factors such as education appeared important mediators (Leslie and Gupta, 1989; Addai, 2000; Mekonnen, 2002). Other factors which are positively associated with utilization of maternity care services are being married, and living in urban areas (Addai 2000; Celik and Hotchkiss, 2000; Mekonnen, 2002) as well as the education and / or job level of the husband, and the husband's perception of pregnancy complications (Leslie and Gupta, 1989; Ayele, 2014; Azuh 2015).

As TBA practice varies widely over different regions and countries (Bergström, 2001; Kurke, 2004; Thattle, 2009; Bücher, 2016), who is considered a TBA in a certain community varies as do knowledge and skills level and ways of carrying out the practice. Some TBAs might have good knowledge and skills, while it is also known that other TBAs practice risky methods including external cephalic version without being aware of contraindications; no antenatal referral in case of complications like anaemia or antepartum haemorrhage; lack of referrals for prolonged labour; lack of sterility and asepsis; poor

handling of the cord; and use of poorly chosen instruments during delivery (Itina, 1997; Smith, 2000; Bücher, 2016). The delay of referrals reduces the chance of saving the mother and the baby once they reach the health facility.

To be able to conduct such lifesaving interventions when women reach there, at the very minimum, the facility should be able to provide essential and basic emergency obstetric care. Campbell et al point out that it is unethical to encourage women to give birth in places with low facility capability, where there are no referral mechanism, where the providers are unskilled or provide care which is not evidence-based and that childbirth should only be promoted in facilities that can guarantee at least quality basic emergency obstetric care" (Campbell et all, 2016). Availability of standard basic emergency obstetric care means that obstetric emergencies can be addressed using manual procedures and medical treatments, specifically vacuum aspiration, removal of retained placenta, instrumental delivery, magnesium sulphate, intravenous antibiotics and oxytocics, and that the health workers in the facility are equipped to provide neonatal resuscitation. If a health facility is not equipped to provide these, then delivery at such a facility is likely to fail to contribute to better maternal and infant outcomes.

The difference in workload between TBAs is also substantial (WHO, 1992; Bergström, 2001), leading to differences in experience and possibly adequacy of the practice. Models have existed before in which Western-trained professionals work well alongside TBAs although more often than not, formally trained staff consider themselves superior to TBAs (Kruske, 2004). The current Kenyan policy with the focus on delivery in formal health facilities recognizes the role of TBAs only as community mobilizers for facility-based delivery (Ministry of Health, 2007).

1.2 Rationale for the study

Kenyan policies encourage delivery in the formal system as a core safe motherhood intervention to reduce maternal deaths and disability. However, many women in Kwale County deliver outside the formal system and this study seeks to establish the reasons. Several factors that make women deliver outside the formal sector have been identified worldwide, many through studies with TBAs and hospital staff as respondents[6,7]. Less has been researched from the women's perspective - why they delivered outside the formal health facilities. This study aimed to investigate which of the identified factors are most influential in Kwale in determining where women deliver. We hope that the results will help to direct interventions to where they would be most effective and that the added knowledge on specific characteristics of TBA practice in Kwale will help to develop policies and guidelines aimed at improving pregnancy outcomes and on if and how integration of TBAs with the formal system could be achieved.

1.3 Study aims and objectives

Broad objective: Explore knowledge, attitudes and practices of the Kwale community on home delivery and the TBA practice itself in Kwale County.

Specific objectives

1 Identify reasons why most women in Kwale County do not deliver in the formal health facilities.
2 Describe the practice of traditional birth attendants in Kwale County.

Study questions

1 What is the knowledge about delivery of women who deliver outside the formal health sector in Kwale County?

2 What are the attitudes towards labour of women who deliver outside the formal health sector in Kwale County?
3 What are the practices related to health care seeking during labour of women who deliver outside the formal sector in Kwale County?
4 What is the prevalence of factors influencing place of delivery in Kwale?
5 How does someone in Kwale County become recognized as a traditional birth attendant?
6 What is the scope and intensity of practice of traditional birth attendants in Kwale County?
7 What are common practices during labour by traditional birth attendants in Kwale County?
8 How do traditional birth attendants administer their practice?

2 Methods

Data collection for this study was conducted as two separate activities as the study included a qualitative Knowledge, Attitudes and Practices (KAP) study through interviews with women who delivered outside the formal health system and a qualitative study through focus group discussions (FGDs) with traditional birth attendants (TBAs). All informants of the study were resident in Matuga and Kinango sub-counties of Kwale County.

The methods section is therefore divided into two, describing first the methods used to collect and analyse data from women who delivered outside the formal sector and then describing those used to collect and analyse data from TBAs through the FGDs.

2.1 Interviews with women who delivered outside the formal system

2.1.1 Pilot

Ten interviewers were recruited and participated in a two day training and pilot interviews in Bomani and Bodoi village, Junju sub-location Kilifi between 1st and 3rd September 2018. They tested the tool and the interviews in general. No major areas of concern were detected during the interviews or in the tools though some questions were clarified and several practicalities were highlighted.

2.1.2 Selection of the areas for data collection

The sampling method for the KAP-survey was carried out as per the project proposal in two stages. First, a cluster sampling was done to randomly select villages to be included in the survey. The list of villages of all sub-locations in Kinango and Matuga was compiled with information received from the office of the County Commissioner and the Deputy County Commissioners. The list contained 417 villages in Kinango and 280 villages in Matuga, so in total 697.

As per the project proposal, the target was 200 interviews. It was decided to sample 40 villages in the first step to limit the cluster effect by maintaining relatively few respondents, namely five, within each cluster, while at the same time that number would allow one interviewer to carry out interview in one village on a given day. The random sample of 40 villages was taken from this list using the random sampling function in Excel. This resulted in a total of 23 villages selected in Kinango and 17 in Matuga. The villages were located in 17 of the 26 locations in Matuga and Kinango sub-counties.

2.1.3 Selection of the households

To get entry to the community, through the assistant-commissioners of the two sub-counties, the sub-chiefs of the respective sub-locations were contacted and provided the team with the details of the elder in the selected village. From the selected villages, households were selected through systematic sampling by selecting households at regular intervals. It was initially agreed to do this after every second household. However, in some villages it was difficult to get sufficient respondents as many households did not have anyone who delivered outside the formal system in the past five years. If this was the case, the systematic sampling was replaced by snowball sampling but no more than one women per household was interviewed. Eventually two villages were dropped from the list due to political tension in the area and replaced with two others – again randomly sampled using Excel.

2.1.4 Data recording

Interviews took place in the village of residence of the women. All of the women gave written informed consent before the interview. Data was recorded on tablets and uploaded to a central server using ODK software.

2.1.5 Data analysis

Data was downloaded from the ODK-server into Excel. First cleaning of the data took place in Excel and several string variables were changed into categorical variables. Furthermore, the purely string variables (purely qualitative information) were separated from the main quantitative data set for separate analysis. The quantitative data set was uploaded in IBM SPSS Statistics 25 for quantitative analysis. The qualitative part of the data was analysed separately and directly in relation to the research questions.

2.2 Focus group discussions with traditional birth attendants

2.2.1 Pilot

The four facilitators recruited for the FGDs first participated in two pilot FGDs in Junju sub-location Kilifi to test the tool and the FGD facilitation in general. Each FGD was conducted by a pair of facilitators with one responsible for the main facilitation of the session and the other to support and ensure the recording and documentation was properly done. The two pilot FGDs were carried out mid-November 2018. The pilot elicited some areas for improvement in clarity related to recruitment of participating TBAs and in some practical adjustments but otherwise did not reveal any problem with the tools and conduct of the FGDs.

2.2.2 Selection of the areas for data collection

The sampling of areas for FGDs with TBA's was carried out as per the project proposal. Six health facilities were randomly sampled and selected and one FGD was carried out at each of the selected facilities. Further FGDs were to be conducted only if the data gathered in these six would continue to generate new information on the core questions and require further exploration. Only dispensaries and health centres were included in the sampling list as it was assumed that hospitals might not have a good insight in the TBAs present in their vicinity.

The sampling lists was compiled through extracting all dispensaries and health centres in Matuga and Kinango sub-counties from the list of Kenya Health Facilities available from the website of the Ministry of Health. As this list was last updated in 2017, further information was obtained from Gazette notices on opening of facilities in this area in 2018 and lastly the list was cross-checked with the information on operational facilities compiled for one of the other studies run at the time in the college on mental health care in Kwale county.

The final list included 68 facilities in the two sub-counties. Matuga has five wards and Kinango seven with Kinango also covering a larger surface area. The population estimates (derived from the 2009 census and where possible cross-checked with the information availed from the various administrative county offices) obtained were 338,944 for Kinango and 218,718 for Matuga. To achieve a representative selection, it was determined beforehand that in addition to be randomly selected, the selection should then include either three facilities from each sub-county or two from Matuga and four from Kinango. Furthermore, it was determined beforehand that all the facilities selected should be based in different wards.

Random sampling was done using the random sampling function within Excel and the first round of sampling elicited a selection of six facilities which fitted the predetermined additional criteria with three facilities in Matuga and three facilities in Kinango being selected in six different wards. However, upon further contacting the facilities, it became apparent that one of the selected facilities did not have a community component. Subsequently, this facility was changed for the nearest facility in the same ward which had a community component.

2.2.3 Recruitment of the TBAs for the FGDs

The in-charges of the selected facilities were contacted and requested for their support in recruiting the TBAs in their catchment areas for participation in a FGD on a set date. They all supported and it was possible to recruit sufficient TBAs through the six facilities. In total 40 TBAs participated in the FGDs with the lowest number in one FGD being five and the highest eight. From the data collected in the KAP-study, it appeared that most TBAs try to take the women to the facilities if they can, so we did not attempt to recruit additional TBAs outside those known by the facility.

2.2.4 Data collection

All TBAs participating in any of the FGDs, whether pilot or actual study, signed for consent. All FGDs were audio-recorded. The FGD's were all conducted using a semi-structured format whereby the facilitator explored the views and experiences of the TBAs in relation to five topics:

- How does one become a TBA?
- What does the practice of a TBA entail?
- When all goes well – how do they conduct a delivery?
- When things are not going well during delivery – what happens?
- Why do pregnant women like their services?

The semi-structured format for the FGDs was prepared both in Kiswahili and in English and to be conducted in the language that all members of the group were confident in.

2.2.5 Transcription and translation of the FGDs

The audiotapes were transcribed in Word and in the English language. However, in order not to lose information, the FGDs were first transcribed in Kiswahili (the predominant language used in the FGDs). Each Kiswahili transcription was then reviewed and corrected against the audiotape by a second transcriber before it was translated in English. The transcriptions were done as clean verbatim, omitting additional sounds, utterances, repetitions but retaining clear meaningful utterances – e.g. "mm hmm" (affirmative) as an affirmation or "mm mm" (negative) as a disapproval.

2.2.6 Data analysis

Thematic analysis was the qualitative method that was used to analyse the data collected in the FGDs. We used processes and practices as suggested by Saldana to guide the initial generation of codes and their subsequent recoding where required (Saldana, 2008). The framework suggested by Braun & Clarke (2006) was used to identify patterns and themes within the data. Braun & Clarke (2006) provide a six-phase guide as presented in Table 1. Though presented as steps, the phases are not necessarily linear and we moved forward and back between them several times. Eventually, we used 30 codes from which three themes arose. Also, the codes were used as the basis to answer the research questions.

Table 11: Braun & Clarke's six-phase framework for doing a thematic analysis

Step 1: Become familiar with the data	Step 4: Review themes
Step 2: Generate initial codes	Step 5: Define themes
Step 3: Search for themes	Step 6: Write-up

3 Results

3.1 Interviews with women who delivered outside the formal sector

212 women were interviewed between 25th and 30th September 2018 by ten different interviewers who each interviewed between 18 and 27 respondents. Of the interviews, the data on six respondents got lost in the process of uploading the data and downloading the final data set. In addition, two more respondents were erroneously included, one because she delivered last outside the formal sector more than five years ago and one because she delivered in the formal sector. These two were also omitted from the final analysis which was then performed on 204 interviews.

3.1.1 Descriptive socio-economic information

The age of the respondents varied from 18 to 45 years with the majority of the respondents being in the age-group of 26-30 years. The large majority was married, most of them in a monogamous marriage and had only attended primary school or not gone to school at all. For details on the socio-economic background of the respondents, see table 1. All percentages in this table and the subsequent ones are provided as valid percentage – calculating the percentages over the actual data on that variable and not considering any missing values. In table 2 the constellation of the households is further elaborated

Table 1: Socio-economic background information

Variable	Frequency	Valid Percent
Sub-county	**204**	**100.0**
Matuga	86	42.2
Kinango	118	57.8
Type of house	**204**	**100.0**
Stones and iron sheets	33	16.2
Mud walls and iron sheets or makuti	169	82.8
Tent-like or make-shift	2	1.0
Age-group*	**203**	**100.0**
20 years and below	18	8.9
21-25 years	51	25.1
26-30 years	67	33.0
31-35 years	35	17.2
36-40 years	25	12.3
41-45 years	7	3.4
Current marital status*	**203***	**100.0**
Single, never married	5	2.5
Separated	9	4.4
Divorced	7	3.4
Widowed	3	1.5
Co-habiting	2	1.0
Married monogamous	156	76.8
Married polygamous	21	10.3
Household size	**204**	**100.0**
Household with one person	19	9.3
Household with 2 persons	4	2.0
Household of 3 - 4 persons	31	15.2
Household of 5 - 8 persons	101	49.5
Household of 9 - 12 persons	43	21.1
Household of 13 persons or more	6	2.9
Religion	**204**	**100.0**
Muslim	111	54.4
Catholic	7	3.4
Protestant	76	37.3
None	10	4.9
Tribe	**204**	**100.0**
Duruma	122	59.8
Digo	39	19.1

Giriama	13	6.4
Maasai	10	4.9
Kamba	7	3.4
Taita	6	2.9
Other Mjikenda (Rabai, Kauma, Chonyi)	5	2.5
Luo	2	1.0
Occupation	**204**	**100.0**
Employed	10	4.9
Self-employed	54	26.5
No occupation other than house work	140	68.6
Occupation partner / husband	**179****	**100.0**
Employed	54	30.2
Self-employed	84	46.9
None	41	22.9
Total income household per month	**204**	**100.0**
Less than 5000 KES	96	47.1
5,000 - 10,000 KES	70	34.3
10,000 – 15,000 KES	20	9.8
15,000 – 20,000 KES	11	5.4
20,000 – 25,000 KES	6	2.9
25,000 – 30,000 KES	0	0.0
More than 30,000 KES	1	0.5
Number of meals eaten per day	**204**	**100.0**
1 meal	4	2.0
2 meals	37	18.1
3 or 4 meals	163	79.9
Highest level of schooling	**204**	**100.0**
No schooling	75	39.7
Primary	112	54.9
Secondary	14	6.9
Tertiary	3	1.5
Husband/partner's highest schooling	**180****	**100.0**
No schooling	43	23.9
Primary	113	62.8
Secondary	19	10.6
Tertiary	5	2.8

**1 missing value*

***Only those who reported a husband or partner with whom they are co-habiting; one widow had remarried*

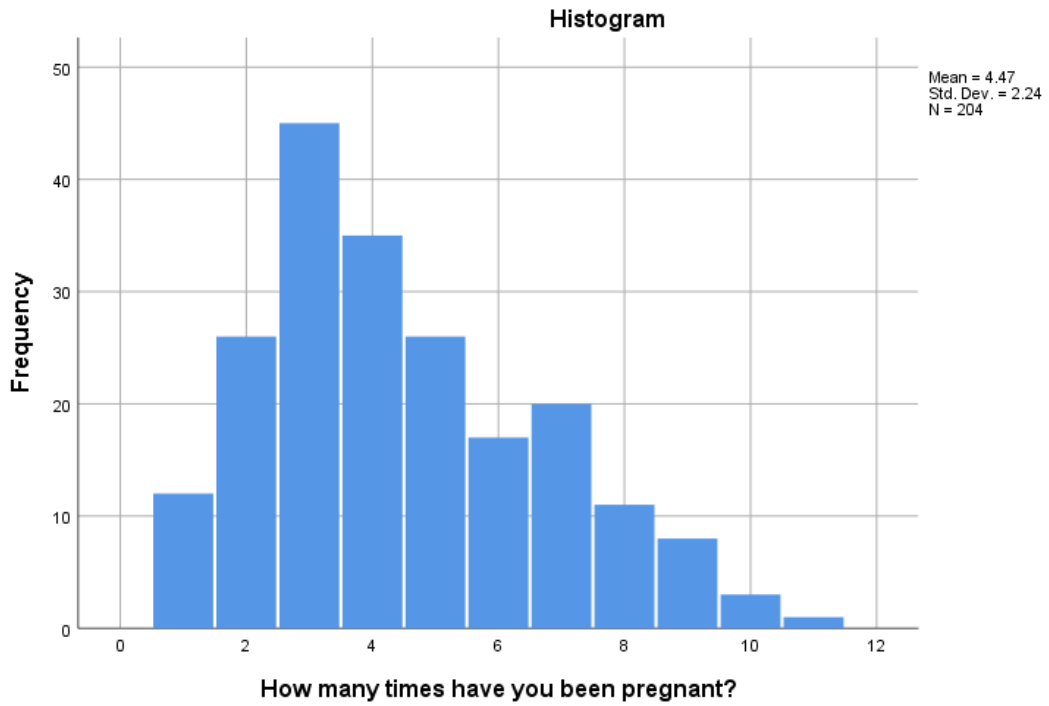
Table 2: Specific persons living in the household

Variable	Frequency	Valid Percent
Lives together with partner/husband	139*	68.1
Lives together with own children or blood related children	173	84.8
Lives together with other children	17	8.3
Lives together with parents / aunts / uncles (including in-law)	47	23.1
Lives together with siblings (including cousins or in-laws)	19	9.3
Lives together with co-wife	4	1.9
Lives together with other extended family members	1	0.5

**Out of the 179 married or co-habiting women, 139 actually live together with the husband or partner*

3.1.2 Number of pregnancies

The respondents varied in the number of pregnancies they had carried between one and 11, with three being the most commonly mentioned number of times and a mean of 4.47.



Out of the 204 respondents, 163 women (79.9%) delivered once in the past five years, and 41 respondents had more than one delivery during this period. The data on the last delivery of all these respondents is presented in table 3 below.

There were 192 women who had been pregnant more than once. Of those, 103 (53.6%) had delivered in a formal health facility before, and 89 (46.4%) had not.

3.1.3 The delivery - location and attendants

About three quarter of the respondents had a TBA who attended their last delivery outside the formal system in the last five years. The attendants who assisted the other women were relatives, friends or neighbours. For details see table 3.

Over the course of the research, first during the interviews and later during the FGDs, it became clear that quite often there were family relations between the TBA and the woman she helped to deliver. However, we did not investigate this relationship explicitly in the interviews. For example, the group of 54 women who delivered as they had planned had indicated in 10 instances that the birth attendant was a family member, and in 44 instances that a TBA attended their deliveries. From the additional comments given, we could afterwards derive that in at least 13 of these 44 cases, the TBA was also a family member. So, out of this group of 54 respondents, at least 23 (42.6%) were related with the birth attendant.

Comments about the TBAs also highlighted other characteristics. A few women commented that they knew the TBA because she is known to be approved, or registered, or announced in official meetings by the formal healthcare providers in Kwale. Others mentioned that TBAs can be known because they are elderly women who are mothers themselves, and that you can know how good they are from the quality of their uterine massage during pregnancy. However, most of the time, respondents mentioned that you learn about who is a (good) TBA through stories and referrals from others (family members, friends, neighbours).

Table 3: Deliveries in the last five years (out of 204)

Variable	Frequency*	Valid Percent
Year last delivery outside formal system	**191**	**100.0**
2012	2	1.0
2013	10	5.2
2014	25	13.1
2015	24	12.6
2016	32	16.8
2017	47	24.6
2018	51	26.7
Location of this delivery	**204**	**100.0**
At home	190	93.1
At someone else's house	6	2.9
On the road	8	3.9
Attendant during this delivery	**204**	**100.0**
TBA	150	73.5
Grand mother	5	2.5
Mother	13	6.4
Mother in law	18	8.8
Neighbour	8	3.9
Friend or relative	8	3.9
Husband	1	.5
Alone	1	.5

**If total per variable less than 204, than the difference consists of missing values*

Out of the 41 women who had more deliveries in the past five years, there were 40 who had one additional delivery, and there was one women who had two more deliveries in the past five years. Out of these other 42 deliveries, 30 (71.4%) took place at home and twelve (28.6%) took place a governmental health facility. Of the 30 home deliveries, 20 (66.7%) were attended by a TBA, five (16.7%) by the mother or mother-in-law, two (6.7%) by neighbours or friends and three (10.0%) delivered alone.

3.1.4 Delivery – planning versus actual

Only 46 women (22.9%) delivered with the person they had planned and only 54 women (26.5%) delivered where they had planned. All the 102 women who delivered in another place than where they had planned, had planned to deliver in a formal health facility. And similarly, of those who had planned for someone else to do the delivery, by far most of them, 49 out of 55 (89.1%) had planned for a formal health worker to do the delivery. Out of the remaining six, four (7.3%) said they had planned a specific TBA, one (1.8%) mentioned the mother in law and one (1.8%) mentioned a specific neighbour to assist (details in table 4).

Table 4: Planning for delivery and satisfaction with the attendant (out of 204)

Variable	Frequency*	Valid Percent
Who did you plan to assist with the delivery?	**201**	**100.0**
I did not plan	100	49.8
The person who actually assisted	46	22.9
Someone else	55	27.4
Where did you plan to deliver?	**204**	**100.0**
I did not plan	48	23.5
Where I delivered	54	26.5
Somewhere else	102	50.0
How satisfied were you with the attendant?	**203**	**100.0**
Very satisfied	87	42.9
Satisfied	109	53.7
Dissatisfied	6	3.0
Very dissatisfied	1	0.5

Would you go back to the attendant next time?	203	100.0
Yes	53	26.1
No	150	73.9
Would you recommend the attendant?	**203**	**100.0**
Yes	71	35.0
No	132	65.0

**If total per variable less than 204, than the difference consists of missing values*

We analysed if those who planned to deliver at home were living further away from the nearest health facility than those who had not planned or who had planned to deliver at a health facility. There were no statistically significant differences between group means as determined by one-way ANOVA ($F(26,172) = 1.076$, $p = .375$). We also analysed for four factors identified in literature as associated with home delivery if they were more present among those who had planned to deliver at home compared to the other women but there was no significant difference in presence of these factors between those two groups as determined by Chi-square test:

- Planning to deliver at home and level of education of the mother ($X^2=1.359$, $p = 0.715$)
- Planning to deliver at home and total income of the family ($X^2=7.116$, $p = 0.212$)
- Planning to deliver at home and level of education of the husband ($X^2=3.291$, $p = 0.349$)
- Planning to deliver at home and being married or not ($X^2=0.464$, $p = 0.496$)

The majority, more than 80%, planned for her delivery herself or together with her husband. In few cases, it was either the husband alone who decided, or other family members or in-laws were involved in the decision (see table 5).

Table 5: Who made the delivery plans? (Out of 101 who planned with who to deliver)

Variable	Frequency	Valid Percent
Who planned with whom you would deliver?	**101**	**100.0**
Myself	41	40.6
Myself and my husband / partner	42	41.6
Husband	7	6.9
Family members (mainly mother) involved	7	6.9
Mother or father in law	3	3.0
Neighbours	1	1.0

We asked all the women what they liked and what they disliked about their attendant at birth. When looking at their responses and selecting only those who were attended by TBAs, by far more positive than negative comments were given. In total there were 162 positive comments. There were only 24 who had nothing to comment. Mainly those positive comments could be grouped under four headings:

1. **Attitude**: 90 of the comments touched on the attitude of the TBA which was judged generally very positive. TBAs were described as caring, supportive, friendly, helpful, encouraging, polite and specifically not engaging in abusive behaviour like insulting or mistreating;
2. **Quality of services in general**: 31 commented on the quality of services: how the babies were delivered well and safe without complications and how the TBA was judged to be experienced and knowledgeable;
3. **Specific actions:** 29 singled out specific actions of the TBA which they liked:
    - Advice to go to hospital either immediately, the next day or for the next delivery;
    - Massaging and use of traditional herbs
    - Being cleaned very well after delivery

- Very good caretaking of the baby and the umbilical cord;
- Wearing of gloves by the TBA;

4. **Availability**: 11 recommended the availability of the TBAs: how they came even at night, how the TBA would stay throughout, and kept on checking how she was doing.

There was very little that respondents mentioned that they disliked. The large majority, 124 out of 150 (82.7%) had nothing they disliked. Only 26 (17.3%) had negative comments. However, only nine were totally negative, the other 17 had positive comments also. The negative comments were as follows:

- Unable to manage complications (excessive bleeding, retained placenta, baby who passed away;
- Limited services offered (leaving immediately after delivery, not being cleaned, no immunizations given to the baby, not being given pain killers to relieve pain);
- Dislike of the delivery environment, especially when the TBA brought in many other people;
- Lack of infection prevention (no use of gloves; TBA came with her own baby who could have transmitted infections to the neonate);
- Dislike of attitudes and instructions of the TBA (being told to push before time; the TBA being commanding; not being allowed to take some food);
- Dislike of specific practices of the TBA (stepped on her back; tied the umbilical cord with a rope; poured hot water; inserted fingers in her vagina which was painful; baby fell on the road).

When being asked more specifically about the advice they received from the TBA, the following were highlighted:

- Bath with warm water (29x), in some cases reasons given were “to be clean” or “to tighten the stomach”, or “to promote healing”. Similar advices simply stated “be clean” (2x), “warm compressions” (3x) or “sit near the fire” (3x);
- Go to the hospital (16x), sometimes further specified, as “for immunization” or “next time give birth in the hospital”;
- Eating advice (8x), especially to eat a balanced diet, though some incidental mentioning of specific foods to avoid, like: “do not take cold food”, “do not eat fish, greens and beans as it can delay healing”, “do not eat cassava and foods rich in oil” or foods to take “take meat soup”;
- To limit activity (5x), especially to avoid heavy tasks;
- Other incidental specific advices were “get massage” (2x), “get family planning” (1x), “do not breastfeed while sleeping” (1x), and “take provided herbal drugs when in pain” (1x).

3.1.5 Additional details on the index delivery

In slightly more than half of the cases (52.5%), the birth attendants at the home delivery came when the contractions became severe. In about 20% of the cases, the attendant came only late in the process, in second stage, when the woman already had the urge to push. Probably, those were cases where she was either called late, or cases of precipitate labour as half of the attendants (50.0%) was there within five minutes after being called and another 39.3% took between 5 and 30 minutes to arrive. Only nine (4.6%) took more than one hour to arrive.

We did a sub-analyses on the data on antenatal and post-natal services provided by TBAs. Among the 54 women who delivered at home as planned, seven (13%) had received prenatal services from their TBA, 28 (52%) received postnatal care and 25 (46%) reported to have received neither prenatal nor

postnatal services from the TBA. Among the women who delivered in another place than planned, fewer women received any additional care was somewhat higher. However, Chi-square testing did not demonstrate a significant difference in provision of antenatal services (X^2=1.489, p=0.222) or postnatal services (X^2=0.957, p=0.328) from the birth attendant between women who had planned to deliver at home and for those who had not planned to deliver at home but were caught by circumstances.

Slightly over half of the women (53.7%) said they paid something for the services of the attendant. This pay or token ranged from 30 KES to 3,000 KES when it was in monetary value, though most payments varied from 100 KES to 1,000 KES. Also, in kind payments were common; specifically mentioned a lot were: a pair of *leso* (two traditional similar pieces of cloth to dress), chicken, sugar, flour, and, especially among the Maasai, a goat. In a number of instances, these were also combined, e.g. 500 KES and a *leso*.

We analysed if those who delivered with a person with whom they had a declared relationship (mother, mother-in-law, neighbours etcetera) were also paying similarly to those who delivered with someone who was only referred to as TBA. There was a highly statistically significant relationship between non-payment and having a declared personal relationship with the birth attendant as determined by Chi-square test (X^2 = 10.549, p = 0.001).

Table 6: Other details of the index delivery (out of 204)

Variable	Frequency	Valid Percent
When was the person who attended your delivery called?	**202**	**100.0**
When contractions became severe	106	52.5
When contractions started	39	19.3
When feeling to push started	38	18.8
When water broke	12	5.9
When baby was coming out	4	2.0
Went there before delivery started	1	.5
Happened to be around	1	.5
Immediately after birth	1	.5
Time it took the attendant to arrive for the delivery	**196**	**100.0**
5 minutes or less	98	50.0
5 -15 minutes	41	20.9
Between 15 and 30 minutes	36	18.4
Between 30 minutes and 1 hour	12	6.1
Between 1 hour and 2 hours	6	3.1
More than 2 hours	3	1.5
The attendant provided antenatal services	**203**	**100.0**
Yes	15	7.4
No	188	92.6
The attendant provided post-natal services	**203**	**100.0**
Yes	90	44.3
No	113	55.7
Did you have to pay anything to the attendant?	**203**	**100.0**
Yes	109	53.7
No	94	46.3

**If total per variable less than 204, than the difference consists of missing values*

Among all 204 women, there were five (2.5%) who had not attended ANC at a health facility. No clear relation between not having gone for ANC and some other variables could be established, though all were multipara (had been pregnant three to five times), they did not go to school or only to primary school, and all were from the lowest two income ranges. However, as all these were the main values for those variables in general as well, none of these was characteristic for this group which did not attend ANC.

3.1.6 Complications and negative outcomes

There were 33 women (16.2%) who mentioned having had one or more complications during the delivery. Out of those, most of them, 19 out of 33 (57.6%), mentioned heavy per vaginal bleeding as the complication. Severe abdominal pains were mentioned by 11 (33.3%), five (15.2%) mentioned retained placenta, severe headache and generalized body swelling were each mentioned trice and loss of consciousness and dizziness twice. Other complications which were mentioned once were convulsions, premature birth, coldness and abdominal pain and swelling after delivery.

Out of the 33, 23 (70.0%) were taken to the health facility or the hospital when a complication arose, in most cases immediately. In one case, retained placenta, she only went later when it was a weekday and the facility was open. In one case of per vaginal bleeding and coldness, the women took a warm bath and pain killers but then went to hospital the next day. Main reasons for not going to the health facility when according to the woman there was a complication, were that the birth attendant considered it normal or that the problem subsided. Other reasons were the distance, absence of transport, and that the health workers were on strike. One women mentioned that she was "not interested" in the formal sector. In five cases (two of per vaginal bleeding, one retained placenta, and two cases of severe abdominal pain) the women were given herbs. Two more women with severe abdominal pains took over-the-counter painkillers. In one case of per vaginal bleeding and severe abdominal pain she was given warm tea and abdominal massage and lastly, a woman with dizziness was given a lot of milk and blood to drink and then her dizziness disappeared.

Table 7: All pregnancies with negative outcomes (no live birth or death after birth)

Variable	Value	Frequency*	Valid Percent
Total respondents with at least one pregnancy with negative outcome	**31**	**204**	**15.2**
Reporting at least 1 miscarriage (highest value 5 miscarriages)	8	202	3.9
Reporting at least one who died because of prematurity (highest value 2)	5	200	2.5
Reporting a stillbirth at term (highest value 1)	4	200	2.0
Reporting at least one child who died after delivery (highest value 3)	19	204	9.3

**If total per variable less than 204, than the difference consists of missing values*

3.1.7 Reasons for home delivery

We asked all the women to indicate for various known factors that influence place of delivery, if they had played a role in their choice to deliver at home. Their responses are captured in table 8. It clearly showed that the main reasons were inaccessibility due to distance or costs. In addition, we asked all women open questions on why they delivered at home and analysed their responses for the main sub-groups in relation to where they had planned to deliver.

All women who indicated they had planned to deliver elsewhere, indicated that elsewhere meant in the formal sector. Out of these, all but one mentioned reasons that further explained and corroborated the finding of lack of access as the core reason why they ended up delivering elsewhere: it was Sunday or Saturday, it was night, health workers were on strike, the motorbike did not come, there were elephants on the road, she did not have fare, rains and slippery roads, or labour was very fast. The only women with another reason had changed her plan after she learnt that in the hospital you have to bring clothes for your new born before it is actually born which was against her principles.

Out of the group of 48 who did not plan, again the same reasons came up with lack of access, whether due to distance, costs of transport, opening hours or absence of health workers, also the major reason for 44 of them. There were only five women who expressed any other reasons for not planning, and they interpreted this as not having planned for delivering in the health centre: two said they were comfortable at home, one said she heard from a friend who was beaten by health facility staff, on said

her husband refused to go because of ANC tests (probably HIV) and one said she could not plan to go because she delivered without experiencing any delivery pains which could have informed her that it was time to go to a facility.

Lastly, it became clear that even among the women who really planned to deliver at home, in addition to this being a positive choice, very many times the same constraint of accessibility was still dominant; many women planned to deliver at home because they knew they could not reach the health facility. Out of the 54 women who planned to deliver at home, 30 indicated that not being able to access the health facility was a reason, and for 23 of these, such were the only reasons provided whereas seven expressed both the lack of access and the fact that home is comfortable or that the TBAs are known to be experienced as additional reasons for delivering at home. As expected however, among this group we also found most of the women who had other reasons that made them choose to deliver at home. There were 21 women who just expressed that they were very comfortable being at home and with the experience of the TBA, either from previous experience or from recommendations of others or who really expressed fear of going to the hospital, or a dislike for the lack of privacy in health facilities. None of these 21 mentioned the inaccessibility of health facilities, but the absence of qualified staff in the health facilities was mentioned as a reason. Lastly, they also indicated that the fact that their pregnancy had no problems made them comfortable to deliver at home.

Table 8: Reasons to deliver at home / with a TBA (out of 204)

Variable	Frequency*	Valid Percent
Access to the nearest health facility is difficult	**204**	**100.0**
Yes	148	72.5
A bit	15	7.4
No	41	20.1
It is costly to deliver in the nearest health facility	**204**	**100.0**
Yes	107	52.5
A bit	17	8.3
No	80	39.2
Distance to the nearest health facility (in minutes walking time)	**199***	**100.0**
15 minutes or less	23	11.6
between 15 minutes and 30 minutes	28	14.1
Between 30 minutes and 1 hour	37	18.6
Between 1 and 2 hours	80	40.2
Between 2 and 3 hours	19	9.5
More than 3 hours	12	6.0
Community feels it is better to deliver with a TBA	**204**	**100.0**
Yes	37	18.1
A bit	25	12.3
No	142	69.6
Had fears about delivery in a health facility	**204**	**100.0**
Yes	22	10.8
A bit	7	3.4
No	175	85.8
Heard negative stories about health facilities	**203***	**100.0**
Yes	21	10.3
A bit	10	4.9
No	172	84.7
Earlier negative experience with health facility	**202****	**100.0**
Yes	18	8.9
A bit	10	5.0
No	174	86.1

**If total per variable less than 204, than the difference consists of missing values*

The 103 women who had delivered both in the formal setting and at home were asked to express their experience in both settings and commented on the difference. Only five women (4.9%) said that they preferred the home setting (three of them gave earlier experienced rudeness of the hospital staff as the reason), nine (8.7%) said that that they did not feel that one setting was better than the other and 88 (85.4%) said that the health facility / hospital setting was better than the home setting. For those who preferred the formal setting, main reasons given were:

- Better management / better services
- Safety and assistance in case of complications
- Availability of pain killers
- Staff is there while the TBA will leave you alone
- TBA was not using gloves

The main comments made for having delivered at home despite thinking that the formal setting is better, corroborate the findings presented already: distance, costs, absence of health workers, closure of local facility outside office hours. Only one woman commented that it was not her decision but the decision of others.

3.1.8 Knowledge on pregnancy and delivery

The 204 respondents were asked through an open-ended question what a pregnant women can do to ensure that her pregnancy proceeds well and the woman and the foetus remain healthy. The most mentioned were: attending antenatal clinics (126x) and eating a good or balanced diet (113x). A substantial group specified vegetables (greens, cabbage) and fruits (bananas, oranges) and some specified other foods: beans, milk, food rich in iron, meat, blood from the cow, energy giving foods, *ugali* (staple food from maize flour). More details on their responses are provided in table 11. Only 12 women out of the 204 (5.9%) said that they had no idea what a pregnant woman can do to ensure she and the baby stay healthy.

Table 9: Knowledge on healthy pregnancy of 204 respondents

Expressed knowledge on how to stay healthy during pregnancy	Frequency	Valid Percent
Attend antenatal clinics	126	61.8
Eat a balanced diet	113	55.4
Avoid heavy duties / take enough rest	12	5.9
Sleep under a mosquito net	10	4.9
Ensure to go to hospital when sick / avoid getting sick	4	2.0
Take prescribed drugs / avoid taking un-prescribed or bitter drugs	4	2.0
Get uterine massage	4	2.0
Visit TBA for check-up	3	1.5
Know your HIV status	2	1.0
Drink clean water	1	0.5
Stay in a clean environment	1	0.5
Does not know how to maintain a healthy pregnancy at all	12	5.9

The 204 respondents were also asked what they could do so that a baby stays healthy. 175 women (85.8%) mentioned breastfeeding. Among the 175, it was captured for 78 respondents that they specified exclusive breastfeeding and others used terminologies like breastfeeding well, properly, frequently etcetera. Also, for nine women it was captured that they stated a period of six months. There were only five women who mentioned giving other foods as healthy for infants; interestingly enough one of them stated “Exclusive breastfeeding and giving cow milk”. Other ways of ensuring an infant stays healthy that were mentioned frequently were taking the baby to clinics and immunizations. For more details, see table 10.

Table 10: Knowledge on infant health of 204 respondents

Expressed knowledge on how to ensure an infant stays healthy	Frequency	Valid
Breastfeeding, including exclusive breastfeeding, for six months etc.	175	85.8
Take the baby to clinics, including for growth monitoring or weighing but not immunizations	41	20.1
Immunizations	37	18.1
Mother to ensure that she stays well and eats well for enough breast milk	14	6.9
Taking care of the environment of the baby: clean and/or warm	8	3.9
Sleeping under a treated mosquito net	4	2.0
Go to hospital when sick	1	0.5
Put in early morning sun rays	1	0.5
Take to church for prayer	1	0.5
Does not know how to ensure an infant stays healthy at all	2	1.0

In addition to the open questions, to further establish their level of knowledge, the respondents were also given several statements and asked to identify whether they were true or false. Their responses are presented in table 11. They were knowledgeable on immunization, duration of pregnancy, hygiene, and harmful behaviours during pregnancy. They were less knowledgeable on ways to avoid getting pregnant, and on the risks of delivery at the extremes of ages.

Table 11: Ability to provide correct response on some statements on pregnancy & childbirth

Variable	Frequency	Valid Percent
Immunizations help to keep babies and children healthy	**204**	**100.0**
Correct (statement true)	200	98.0
Incorrect (statement false)	3	1.5
Don't know	1	.5
A normal pregnancy takes 7 month	**204**	**100.0**
Correct (statement false)	178	87.3
Incorrect (statement true)	18	8.8
Don't know	8	3.9
It is important to have a lot of clean water available during delivery	**204**	**100.0**
Correct (statement true)	167	81.9
Incorrect (statement false)	10	4.9
Don't know	27	13.2
During pregnancy you should not smoke	**204**	**100.0**
Correct (statement true)	159	77.9
Incorrect (statement false)	29	14.2
Don't know	16	7.8
It is good to start giving babies extra food like papaya at about 3 months	**204**	**100.0**
Correct (statement false)	158	77.5
Incorrect (statement true)	41	20.1
Don't know	5	2.5
Drinking alcohol during pregnancy has more negative consequences than when you are not pregnant	**204**	**100.0**
Correct (statement true)	150	73.5
Incorrect (statement false)	36	17.6
Don't know	18	8.8
Pregnancy is safer when women are young, like 15-17	**204**	**100.0**
Correct (statement false)	144	70.6
Incorrect (statement true)	31	15.2
Don't know	29	14.2
You can take pills to avoid getting pregnant	**204**	**100.0**
Correct (statement true)	118	57.8
Incorrect (statement false)	27	13.2
Don't know	59	28.9
Formula milk is best for a young baby	**204**	**100.0**
Correct (statement false)	105	51.5
Incorrect (statement true)	32	15.7
Don't know	67	32.8

The more babies you get the safer the deliveries get	204	100.0
Correct (statement false)	79	38.7
Incorrect (statement true)	67	32.8
Don't know	58	28.4
When you are fully breastfeeding, you are less likely to get pregnant	**204**	**100.0**
Correct (statement true)	76	37.3
Incorrect (statement false)	61	29.9
Don't know	67	32.8

When exploring their knowledge about danger signs in pregnancy, the large majority were able to at least mention one relevant danger sign; there were only 16 of the 204 (7.8%) who were not able to mention even one danger sign. Of the ones who knew some danger signs, 61 (29.9%) could mention one, and the other 127 (62.3%) could mention at least two danger signs (details of specific danger signs mentioned in table 12).

To establish if they had an idea where they might need to be referred in case of a complication, we asked about a nearby hospital where a Caesarean Section could be carried out. Of the 204 respondents, 195 (95.6%) were able to mention correctly such a hospital; seven (3.4%) had no idea and two (1%) incorrectly mentioned a nearby dispensary or health centre.

Lastly, all women were able to mention at least one sign that labour had started (table 13).

Table 12: Danger signs during pregnancy that 204 respondents mentioned spontaneously

Variable	Frequency	Valid Percent*
Severe abdominal pains	121	59.3
Per vaginal bleeding	102	50.0
Headache	43	21.1
Generalized body swelling	37	18.1
Fever	30	14.7
Baby not moving	29	14.2
Anaemia / tiredness / weakness/ dizziness / palpitations	17	8.3
Convulsions	5	2.5
Vomiting / heartburn / lack of appetite	4	2.0
Drainage of liquor	2	1.0

**The following signs were mentioned all once as danger signs: trauma, per vaginal discharge, painful urination, general itchiness and malaria*

Table 13: Signs that labour has started which 204 respondents mentioned spontaneously

Variable	Frequency*	Valid Percent*
Abdominal pains / contractions	162	79.4
Loss of blood and mucus	54	26.5
Loosing per vaginal fluids	52	25.5
Backache	29	14.2
Feeling to push, defaecate	7	3.4
Descent of the baby	7	3.4
Fatigue	4	2.0
Frequent urination	4	2.0
Vomiting**	3	1.5

**Others which were mentioned once or twice: feeling very heavy, mood changes, difficulty walking, leg pains, swelling of limbs, body swelling, child turning, smell of the child*

***1 specified "vomiting 3 times"*

3.1.9 Attitudes, values and beliefs related to child birth

All women were presented with the following 22 statements to assess their beliefs and values surrounding childbirth. They scored from completely disagree (1) to totally agree (5). In table 10, the mean scores are presented. In addition to the mean score, the standard deviation is presented as for

some statements, the opinions differed widely, with very few respondents having "no opinion" and with most of them either fully agreeing or completely disagreeing. These wide disparities are signified by a high standard deviation, like for the statements "I would want my partner to be there during delivery", "I prefer to deliver while squatting" and "I prefer to deliver while laying down on my back".

Table 14: Responses related to statements on childbirth

Statement	Mean score	St. Dev.
Mean score around "totally agree" (4.5 – 5.0)		
A woman should plan in advance where she will give birth to her baby	4.58*	1.018
Mean score around "agree a bit" (3.5 – 4.5)		
It is risky to deliver at home	4.08	1.446
Men can be as good as health care providers during delivery as women	4.02	1.363
In general, health workers in formal facilities are friendly to women who come to deliver	3.96*	1.198
I would be ok with a male attendant during delivery	3.68	1.691
I prefer to deliver when laying down on my back	3.64*	1.784
In general, when you deliver with a TBA the risks of getting a C.S. are less	3.55	1.506
When you are in a formal health facility, the staff will remain with you throughout	3.52	1.302
Mean score around "no opinion" (2.5 – 3.5)		
When you deliver in the formal sector you will be given a cut (episiotomy)	3.22	1.466
A women who is delivering should not shout or cry	3.16*	1.703
When you deliver in the formal sector you are more likely to get a C.S.	2.91	1.571
I would want my partner to be there during delivery	2.88	1.885
Babies being stolen is a common problem in formal facilities	2.83	1.504
When you deliver with a TBA, the babies tend to be more healthy	2.81*	1.495
I prefer to deliver while squatting	2.70*	1.862
Women who deliver in formal health facilities are often shouted at by the staff	2.60*	1.412
Women who deliver in formal health facilities are often beaten by the staff	2.57	1.455
Mean score around "disagree a bit" (1.5 – 2.5)		
Deliveries in the formal sector take longer	2.36	1.341
Delivery in the formal sector is for women who are cowardice	2.21	1.469
I like to be alone during delivery	2.06	1.612
Babies are at higher risk of dying if you deliver in a health facility	2.06	1.306
In general, TBA's are more experienced in doing deliveries than health care staff	2.05**	1.427

**1 missing value*

***2 missing values*

3.2 Results from the focus group discussions

The six FGDs were carried out on 30th November and 1st December 2018 with each pair of facilitators conducting two FGDs. No major obstacles were encountered during the data collection. Five of the FGDs were mainly conducted in Swahili with brief deviations to the Digo or Duruma language where clarification was required. One FGD was conducted in Maasai language with the help of a translator as most of the participants in that particular FGD did not speak Kiswahili. All FGDs took approximately one hour (between 49 and 72 minutes). The transcription of the FGD conducted in Maasai language was done with the help of a native Maasai speaker. This revealed substantial differences between the translation of the translator in the field and the questions of the facilitator or the answers of the women whereby the translation during the transcription process was taken as final but the translations of the local translator were retained to clarify the responses of the TBAs. The final transcriptions contained between 3,000 and 5,700 words each. Transcribing and translating took place between December 2018 and April 2019. The subsequent thematic analysis turned out to be tedious and took from May to November 2019.

All the TBAs were female. They formed a quite homogenous group in terms of age (34-70), education (none or primary school only), marital status (mostly married, five widowed and one divorced) and

most having have started work as TBA around their forties. However, in one FGD there were two participants included who were outliers in all respect: younger (20 and 26), education (Form 4 leavers), marital status (single) and having started working as TBAs for only a short time, since their early twenties. These two were considered by the dispensary as TBAs but had, in contrast to all but one of the others, grown out of being volunteers or support workers at the dispensary.

3.2.1 Becoming a TBA

Most TBAs had acquired their skills through first observing and assisting a female family member who was also a TBA. In most instances, this was their mother or grandmother and in some cases the mother-in-law. It was actually considered an obvious truth among them, that that was the case:

> "I started with watching my mother who was a good TBA. I watched and started learning and my mother started giving me a chance to do under her supervision." (Location 2, TBA2)

> "As for me, I saw my grandmother do it. My grandmother used to be a traditional birth attendant and she was always followed by many people. When she worked, I used to observe her and now I am also a traditional birth attendant." (Location 4, TBA7)

> "I saw my mother-in-law assisting someone to give birth. At first, I was scared but I was observing and learning from her till I also became a traditional birth attendant." (Location 6, TBA)

Also, although the learning starts when they are still in their fertile period, several TBAs indicated that you become a TBA once your own childbearing age is over:

> "I did not study to become a TBA. This job usually goes with someone's age. This is because your daughters and granddaughters will be delivering and you will not need to go call someone to assist them when you are there and you are old enough. My mother was a TBA and I watched her massaging and delivering mothers. She would massage a mother and be able to tell whether the mother is carrying a baby boy or a girl. From her I learned to be a TBA." (Location 3, TBA6)

> "I started doing this work after I finished giving birth to my children. I used to have an aunt whose work was traditional birth attendant and she used to tell me that I should practice because I have kids and soon, I will have daughters in-law who I will be required to help them when they want to give birth." (Location 6, TBA)

> "I became a TBA because of my old age. I have daughters-in-law to deliver but I also do farm work. When I finish attending to a pregnant mother, I pick my hoe and go to the farm. That is all we have to do; attending to daughters-in-law, farm work and looking after grandchildren." (Location 3, TBA2)

There is a fluid scale currently from TBA to community health volunteer (CHV) and back. The few younger TBAs followed a very different route to become a TBA – they were identified through the local health facility, observed and participated there in attending to pregnant women and during deliveries, and were then recognized by the facility and community as TBAs:

> "As for me, I learnt midwifery in [health facility]. This is because the doctor I worked with used to insist that I be present whenever there was child delivery at the hospital so that he could show me how it is done. After I acquired the skill, the villagers would call me to assist in child birth when the doctor was not available." (Location 4, TBA5)

The focus on family was also considered as the core reason for becoming a TBA – as elderly women in the community, they were expected to assist their daughters, daughters-in-law and grand-daughters during their deliveries:

> "For me to become a traditional birth attendant I started with my daughter, I was trained by my grandmother, she always invited me to observe her when she was conducting deliveries, because she always said she will be older and we need to inherit her, so I did not hesitate I always joined her and observe, until I understand what was done and how to do it and I started assisting and become a traditional birth attendant in later age. I started conducting my first delivery with my daughter and when her daughter also got pregnant and reached the ninth month she was brought to the village and I was there with my daughter. When the time of delivery reached she had some pains and later she delivered safely and this is how I become a traditional birth attendant through observing and assisting my grandmother back at home." (Location 1, TBA5)

> "There is no any other way other than observing your family members. It would not be possible for me to know how to assist mothers in giving birth if it were not my grandmother. She told me that I need to learn because soon I will have daughters and granddaughters who will need my assistance. She taught me and I practiced while she was observing until I became experienced in this field." (Location 6, TBA)

Other motivators which were mentioned was when there were moments that the TBA felt she saved a life. Having managed a very difficult delivery situation and getting a good outcome was generally considered as the way how other people, outside family, would get to know you as a TBA and ask for you. There were also those who felt that their work as TBA was a calling, either from childhood, or through a dream or a gift:

> "What motivated me is that the other people in Mtongwe were defeated to conduct that delivery, but I was able to conduct that delivery safely and saved my daughter." (Location 1, TBA4)

> ‘‘To begin with, from my childhood when there was a mother who wanted to give birth, children used to be told to stay away, but I never wanted to. Every time I got sent away, I used to come back and look at what that mother was doing. Since then, I understood how a baby could be helped when born, in cutting the umbilical cord. When I grew up, I started doing this job using the skills l learnt" (Location 5, TBA8)

> "We give them a service which is a favour from God. We have not gone to school for it so we attend to them using skills from God." (Location 2, TBA2)

> "I was not taught but my mind made me to be a TBA." (Location 3, TBA5)

The absence of health facilities was mentioned as an important factor to become a TBA in the past. In all but the most remote areas, the TBAs indicate that this has changed and that facilities are more accessible. However, even currently that accessibility is clearly still limited due to limited opening hours, difficulties of transport at night, and the absence of health workers in the facilities:

> "When her time to deliver comes, you take her to hospital or if it is in the night, then you just deliver her at home." (Location 3, TBA5)

> "When doctors are not there, they come to us. And even when the doctors are there, they call us to be with them." (Location 2, TBA2)

"I learnt how to assist mothers in giving birth at times when there were few hospitals in this locality. My mother used to be a traditional birth attendant and she used to request my help when she is attending to a client. This has been my work since those days. Even nowadays when maybe the doctors are on strike, we are called to assist the mothers." (Location 6, TBA)

"We are told not to deliver at home but sometime you are called and when you reach there, the mother is already in labour pain and she is pushing. We need those clips, scalpels and gloves. If she is pushing, we help her and then come with her in the dispensary." (Location 6, TBA1)

3.2.2 Scope and intensity of practice

In all but the FGD in the most remote area, changes in intensity and scope of practice were clearly stated in the other groups. In all those other five groups, the instructions and adherence to the instructions to deliver in the health facilities and educating women to go for ANC at the health facilities came out clearly as having been integrated in and having changed the role of TBAs.

"Do you mean what we are doing know, or what we were doing in the old days? Because it's totally different." (Location 1, TBA2 – on being asked what services they offer to pregnant women)

From all the FGDs it came out clearly that the TBAs consider both antenatal services, delivery related services and post-partum services as part of their scope of practice, regardless of their changing role. During the pregnancy, advising women to seek ANC has come more recently as being considered of one of their tasks, whereas massaging and providing herbal medicine from roots or leaves for specific ailments were traditionally their core tasks and are still continuing. During delivery, again massaging and supporting the woman were and are seen as core tasks, with conducting the delivery or accompanying them to the health facility being dependent on the situation. In the post-natal period they all consider cleaning the woman and the child and making sure they only leave when both are okay as their tasks within the immediate post-partum period. Most of them included looking after them in the first few days after delivery as part of their tasks, with a few saying they would stay up to two weeks until the woman was ready to do her daily chorus again herself. More on their specific actions can be found under 3.2.3.

It appears that women also approach them when they are bleeding in early pregnancy or when they want to have an abortion, though the topic did not generate a lot of responses:

"When a lady has symptoms showing that she might lose pregnancy, she comes to us and we tell her that she is going to have a miscarriage. After a short time, she starts bleeding and the pregnancy is lost. But they don't come to us easily." (Location 3, TBA1)

"If blood is flowing out we insist they go to the hospital." (Location 4, TBA2)

"I am also a CHV, they usually come to us thinking that we might know the drugs that can induce abortion but we usually tell them that it's not allowed in the country and also in the Islamic religion." (Location 6, TBA8)

Not only did some younger TBAs became to be seen as a TBA after becoming a CHV, also, older TBAs expressed how later on, they became CHVs. Despite all these changes, it is also very clear that the continued lack of access to formal healthcare for many women especially during delivery, the role of TBAs in home delivery still exists. In addition, during pregnancy, the practice of massage by TBAs still came out strongly.

> "I started doing this work after I finished giving birth to my children. [...] I have been a TBA until this hospital was officially launched, [...]. Since then, we are educated on how we can help pregnant mothers without necessarily doing what we have been doing because of so many complications which can be avoided when the mother gives birth in the hospital. Nowadays we take the mothers to the hospital. When a mother comes to for assistance, we advise them to come to the hospital. That is what we are doing currently." (Location 6, TBA)

Except in the very remote areas, almost all TBAs indicate that they are aware and adhere to the instructions from the formal health system to take women to hospital for ANC and for delivery. In the very remote areas, going to a health facility for delivery only comes up as the very last resort when there are complications:

> "We will know that she is not delivering well if the baby is not coming properly. We take her to hospital because we are not sure if the mother is lacking water or blood and we don't have blood to give her." (Location 2, TBA2)

> "When a mother is delivering and she is pushing with a lot of force, that's not a good sign. When the abdomen lacks warmth or the baby is not moving, it is also a bad sign. When the baby is okay, it is happy and plays in the abdomen. But when it is not, it becomes a burden even to the mother. When I see these signs, I take the mother to the doctor." (Location 2, TBA4)

The picture of intensity of the practice is variable and appears to vary from one every two to three months to one every one or two weeks, or even more when massaging during pregnancy and delivery are combined:

> "In a week I see four or five women. At this time, I leave my house chores and work as a TBA. Sometimes a mother is sent to Kinango and you stay with her there for like a week. You see, that's work." (Location 2, TBA2)

> "Before, we used to attend to around 3 or 4 mothers in a month. Nowadays it's not that possible even to attend to one mother in a month because of the contraceptives. You can even stay for more than four months and attending to only 1 or 2 mothers." (Location 6, TBA)

One or two of those who trained as CHVs first but then are now recognized as TBAs state that they rarely do a delivery but only assist.

There is some variation with the duration of the care as some state that after the woman delivering and being cleaned she goes home and the work of the TBA finishes there with others saying they stay for several days up to a week:

> "I have not delivered in this month. In this year, I have delivered four mothers. This is because it's only when the doctor is unavailable when the police comes to get me to help in delivery. I do not deliver mothers when the doctor is available. (Location 4, TBA3)

> "I started this job of helping mothers give birth a long time ago. Must practice for a long time I even delivered three mothers at my home the other day. So I started delivering mothers a long time ago. When a mother gives birth, I clean her, then I bathe her and she goes home." (Location 5, TBA7)

> "I don't have much work but that of being a TBA I do it a lot. When a mother comes to me, I attend to her until she delivers and also, I stay with her for five days. Sometimes, after I am

done attending to one mother, another one follows me. So, that basically is my job." (Location 3, TBA3)

Many of the TBAs engage in massaging of women during pregnancy and that is done more frequently and considered it as something that needs to be done to pregnant women alongside those women going for antenatal care at the facility.

> "Massaging ladies depends on how many are pregnant in your homestead because those are the ones who will be coming to be massaged after every few days. This is because even if a lady is attending ANC, she still has to be massaged. When her time to deliver comes, you take her to hospital or if it is in the night, then you just deliver her at home." (Location 3, TBA5)

3.2.3 Common practices of TBAs

As indicated, the practices reported by the TBAs covered the whole spectrum from looking after women during pregnancy, during labour, and in the post-partum period.

The most common mentioned practice during pregnancy featuring in all FGDs was massaging. Which they felt should be done frequently, could be used to put the baby in the right position and to make the mother feel better. Also, this was often combined with referring to traditional drugs – leaves or roots – which some said were always given, others said specifically when there are problems. In general, from the way issues were shared, it appeared that the practice of massaging is very present, both during pregnancy and at the onset of labour, whereas the use of traditional medicine appeared to have reduced though less so in the more remote areas:

> "The other services that I was brought up and see it done, there are two types of traditional drugs one of the leaves and the second is the roots. If the pregnant mother has some problems during pregnancy she will be given special medication and when it's during labour she will be given another different medication. During massage I saw people using coconut oil and warm water to massage with and that what I have been practising and I was shown by my mother's elder sister. If the mother comes to you as the traditional birth attendant and she has no problem you just do the massage and if she has problems you do the massage and give her the traditional drugs (the roots) and that was our tradition. While the leaves were used during labour, they help to faster the labour pains, you mashed the leaves with water and sieve give the mother a half glass of the liquid formed. The drug could help to change the child position and faster the labour pains and the mother could deliver safely and that's the drug I have been using." (Location 1, TBA2)

> "When a lady gets pregnant, she will get to the first month, second and even the third which is the most dangerous. If she has abdominal problems, we boil some roots then she drinks it three times daily for one month. If you ask her, she tells you she is getting better and the abdomen becomes warmer. If it has not helped her, we change the drug." (Location 2, TBA4)

> "When a pregnant mother has any problem, she goes to a TBA carrying a bottle of oil to be checked. When she gets to you, you massage her and if the problem is the position of the baby, you try and put it in a good position then the mother goes back home. The day she goes into labour you massage her again and tell her that she is ready to deliver. In the old days there were not hospitals but now after the massage, you get the mother on a motorbike and take her to hospital when she is ready to deliver. When she gets there, she does not take long, she delivers and you take her back home." (Location 3, TBA2)

Other than being able to establish the position of the baby, the TBAs said they would check if the pregnancy was at term or not, and some said they were able to differentiate a boy from a girl. In

addition to these observations, they saw also advising the women to be tested – which appeared specifically to refer to HIV – and to register at the health facility:

> "... we encourage them to go for proper check-up and to be registered so that they wouldn't have any problems when it's time for delivery." (Location 4, TBA1)

> "Another thing, it's not that we deliver mothers at home. When a mother is pregnant, we usually go and visit her to see how she is doing and to direct her to come to the clinic. She comes to the clinic and when time for labour comes, that's when you are followed and come with her to the doctor." (Location 5, TBA)

Although many times, in all but the remote areas, the TBAs state that much of their job these days is to accompany the woman to the hospital when they go into labour, still, they equally state that regularly they deliver at home due to the absence of formal healthcare. When they conduct these deliveries, they establish if the woman is actually in labour through her behaviour and signs from the birth canal:

> "You will observe her appearance, she will be unable to walk, expressing pain, and when you check the birth canal she will be discharging some liquid." (Location 1, TBA4)

> "There is going to be a mucous discharge and a discharge coming from the head of the baby coming out of the vagina. When you finish massaging the abdomen you will also notice that her vagina is open." (Location 3, TBA1)

They would check the cleanliness of the environment and let the woman determine her preferred delivery position – although most of the TBAs stated they put the mother on her back and some of them mentioned that this had changed as now health workers say woman have to deliver while laying on their back.

> "My opinion is, you can choose the position for those who is there first delivery but you cannot choose for those who have several deliveries, because they are used with their position and if you choose for them they will complain and they can end up killing the baby, so I don't choose for them. But a big number are the ones who like to sit and lay on a pillow behind to support them." (Location 1, TBA3)

> "In the past mothers used to deliver while kneeling down but these days it is compulsory they give birth lying down just like in hospitals." (Location 4, TBA2)

Reference was made to the past when a stone was used to tie to the placenta to pull it out and a knife was used to cut the umbilical cord and but that now they wait for the placenta to come and they use razor blades and then tie the cord. Some mentioned the importance of holding the razor blade in boiling water before using. Also, they made reference to the importance nowadays of wearing gloves so as not to get infected (with HIV) or putting paper bags on their hands if no gloves were available.

> "Because it is not safe nowadays, if you do not have gloves you look for paper bags to wear while conducting the delivery." (Location 3, TBA1)

> "In the past we used to deliver mothers just like that but we now use tools because there are many infectious diseases so it is necessary to use tools." (Location 4, TBA8)

> "... it's what we have been told, because we take those gloves and stay with them at our homes. A mother could follow you and start pushing on the way. You protect yourself by wearing those gloves." (Location 5, TBA4)

After delivery, cleaning up the woman and the baby, checking and disposing the placenta by burying it or throwing it in the latrine, and, especially mentioned in the Maasai community, feeding the woman with either soup or milk are immediate activities they carry out. Depending on the set up, some feel there job is over after the day of delivery, but most express that they will stay with them or attend to them for several days or even weeks until the woman are able to do cooking and sweeping themselves again. In case the women delivered at home, it is also consistently mentioned that taking the women and infant to the clinic the next day or earlier in case of a complication is part of their task.

> "When the placenta is out, I make sure all of it has come out before disposing it. The placenta has four corners, I check if all are there. If they are all there, I will know it is complete and there is nothing remaining inside. If I find a section that lacks a corner, I know there is small flesh remaining inside." (Location 5, TBA8)

> "I then wash the mother with warm water then boil milk and add some herbs for her to drink. I then wash the baby. I stay with the mother until she is okay. Every time she is given milk." (Location 2, TBA2)

> "You put the baby aside. You boil the razor blade then you put it aside. You tie both sides of the umbilical cord with a string then you cut it. You let the baby and the mother rest for a while. You clean the place then you take the placenta and cover it up. After cleaning the place, you take both the mother and the baby to the dispensary for immunization and further care. In case you delivered at night, you wait till morning then you take them to the hospital." (Location 6, TBA3)

> "When a mother gives birth, I clean her, then I bathe her and then I go home." (Location 3, TBA7)

> "Other services that we do after delivery, every morning and evening after delivery we massage the mother using warm water to remove the blood clotting and after seven days all the dirty blood will have stopped and removed, that the service we offer as traditional birth attendant to the mothers." (Location 4, TBA5)

> "There are no specific days. I stay with her until I make sure she can do her work." (Location 5, TBA)

As stated above, for some TBAs how they had managed to tackle a complicated delivery actually propelled them into becoming a TBA or becoming known as a TBA. The general tendency for TBAs is to strive to get the woman to a health facility when they observe a complication. However, they still could share several ways of tackling difficult situations as in practice sometimes reaching a health facility which can actually assist is still complicated. They referred also to local remedies and beliefs.

The most discussed complication was bleeding before or after delivery, and in relation to this: a placenta which is not coming out and fainting of the mother:

> "In the past, we used to give a mother blood when she bled. Now we don't give them blood anymore, we slaughter a goat and make soup for them." (Location 2, TBA2)

> "When a mother is bleeding but not severely, you give her sugar solution, the bleeding stops and you continue with the delivery." (Location 3, TBA5)

> "A mother bleeding before delivery. When you see this sign you tell the mother that here I can't help you." (Location 3, TBA6)

"When you see a mother is dizzy and bleeding a lot, you know you can't handle it. You take her to hospital." (Location 3, TBA2)

"A great danger sign is excessive bleeding. It is dangerous and we have no treatment at home. The mother must be taken to a hospital." (Location 4, TBA5)

Especially, on this topic of post-partum haemorrhage and non-detachment of the placenta, some internal conflict between the desired scenario and the difficulties of reaching health centres in reality, clearly came out, as illustrated by this discussion at location 4:

"Facilitator: '... the placenta does not come out [...] What do we do?'
TBA2: 'I take her to the hospital'
TBA1: 'She is lying.'
TBA3: 'If it's at night and there are no cars, I take the mother and hold her legs, then I shake her until the placenta separates from the mother's umbilical cord then I take her back and tell her to take a deep breath or cough until the placenta comes out'."

Others regularly mentioned problems were a baby in breech or not coming out, a baby which is not doing well, membranes which are still covering the baby when it is born and cord around the neck.

"If the cord has gone around the back I know and also how to remove it. If the membranes have not come out, I know including how to remove it. If a baby is presenting with the buttocks, I know. I check with my fingers and feel that this is a limb and not head." (Location 2, TBA4)

" ... I did a first aid to the baby, where I lifted the baby's legs up and the head facing down do a little shaking, until the baby started crying." (Location 1, TBA2)

"So when I observed her I find out the birth canal was small and the child was big, I check for a razor and commanded my daughter to push the baby as a was increasing the birth canal using the razor, until my grandchild was out." (Location 1, TBA4)

"I had one scenario, where during delivery the baby did not present the head first as usual, after assessment, what I could see was the umbilical cord first, so in that scenario I first ask the mother to stop pushing, and then I hold her legs and shake for some time, and then I reassessed and found the baby has turned the position and she successful delivered her baby.so that how I was able to manage that scenario." (Location 1, TBA4)

"When I see the baby has come out with the buttocks, I first wear gloves then I place my hand first and look at the places that are arched then I help the baby's legs to come out tell the mother to push, and then I help her until the baby comes out." (Location 4, TBA)

3.2.4 How do TBAs administer their practice?

The perception of the TBAs is that the community is in need for their services which is propelling them to practice. They narrate that in the past there were so many clients and they had a responsibility to assist. Currently, their clients are mainly those who, for one reason or another, including fear of the formal sector, cannot go to the formal sector. In addition to this, also it came out in some of the FGDs that communication and interaction with health workers had reinforced better collaboration:

"I became a TBA and started conducting delivery services because by that time, there were many mothers seeking those services, so whoever was there could help either a child or an adult. So one day I was asked to sit in front of a mother in labour and see if I can help ,I did not hesitate ,I sat and check then I commanded the mother to push and she delivered safely

and it was then I thought it was like a gift so I then started the delivery services." (Location 1, TBA3)

"The first thing that makes mothers come to us and not hospital is cowardice. Some are shy because they don't want to be delivered by men. They also know a TBA will be closer to her throughout the process. In hospital sometimes she is told she is not ready to deliver when actually she is. That is when they prefer the TBAs. If she is a coward, or has no energy to push, she knows the TBA will pamper her and show her how to push until she safely delivers." (Location 1, TBA5)

"Previously when I used to deliver babies at home there was something I would like to share. The mothers never wanted to deliver in the hospital because of the harsh environment. When the doctors wanted us to bring the mothers to the dispensaries, we told them that they must be polite to these mothers. The doctors were claiming that we don't want the mothers to go to the hospitals because we get paid. But we are not paid anything and we don't want to witness any complication during delivery at home. We now collaborate with the doctors very well. We usually bring the mothers here. They help them in delivery process and we take them home. If there is an emergency then you will have to help the mother. Not really happy with it because in case anything happens you will be responsible for that" (Location 6, TBA)

Across the FGDS, TBAs also agree that their clients range from young to old and from those giving birth for the first time to those who have delivered severally.

"They are combined. You may find a mother who has given birth three times, six times or it's the first time." (Location 5, TBA1)

It is a common feeling among TBAs in Kwale that they are polite to their clients. They encourage their clients with kind words which makes them to be preferred.

"They like our services because at home we really encourage them using polite language, but at the hospital some health works use abusive language." (Location 1, TBA3)

"We help them; there are even others who give birth while carried by their friends which is something they don't see in the hospital. They love us for that help. When someone comes to you they hold you and you tell them. Others give birth at home because they say the doctors are harsh and beat them. Others run away from operation, they say traditional birth attendants sooth them a lot."(Location 4, TBA3)

TBAs stay close to their clients from the start of labour to delivery. Across the FGDs, it also emerges that some stay with the mother after delivery, helping her with house chores, until the mother is strong. Some would leave the mother some hours after delivery but they would keep checking on her. This, they feel, is lacking in the formal sector.

"Mothers like us because we care for them as our people. I can leave my children to go and stay with her. Whether she has paid or not, I attend to her as one of my own." (Location 2, TBA4)

"Mothers like us because we don't leave them alone. I help them until they are strong, then leave." (Location 2, TBA1)

"It's because they trust me, that I am their closest help." (Location 5, TBA8)

Generally, TBAs say that they are not paid for their services. It rests on the client to decide whether and what to give as an appreciation to the TBA after the delivery. TBAs express dissatisfaction with this.

> "We are not paid. I even went with a certain girl who was pregnant this month. I left with her at night to ... health centre. Together with the doctor, we assisted her in giving birth. I returned home with her and attended to her for two weeks. She just left." (Location 5, TBA)

> "I was followed to go and deliver a mother somewhere far where other TBAs had not been able to assist the mother. I delivered the mother and I was not given anything. I decided to stop offering the service but I had to start doing it again because my daughters and granddaughters are delivering and I'm their TBA." (Location 3, TBA6)

> "Why should we keep records of work we are not paid for? We just deliver the mothers and that's the end of it." (Location 3, TBA1)

Despite there being no payment, TBAs receive some appreciation especially in kind. For all the FGDS save for one, they stated that this is generally dependent on the client. Some clients give while others don't. The appreciations also vary, from a pair of *leso* to money, mostly around Ksh 200.

> "They don't pay anything. All they do ask is for you to help them. When you go there, you ask them to go to the hospital. They will request you that you go with them. Then you will go and stay for a couple of days them come back home with them but still they cannot give you Ksh 2000. Some might give you Ksh 200 then they will tell you that they will send the other cash later. The husband will keep on promising until you give up." (Location 6, TBA)

> "It's the same things as already mentioned by others. Some mothers are appreciative. When you deliver them, they give you a new cloth and good food is prepared on the fortieth day and you celebrate [...]. Some will not give you anything at all." (Location 3, TBA1)

> "At times, some of the mothers you help deliver are of good heart. They at times plan and buy you a set of covering cloth piece, *leso* as a way of appreciating you, but it is one in a hundred, not all of them." (Location 5, TBA)

Among the Maasai community, the token of appreciation is standard, a goat. However, even here, they lament not getting these gifts when they go with the mother to deliver in the formal sector.

> "When a mother comes to me, I'm lucky I'll be paid but when I'm called for a mother in the hospital I' not paid." (Location 2, TBA1)

> "When we deliver a mother at home, we get a goat. But when you take a mother to the hospital, sometimes you go and stay with the mother for a whole month in Kinango and you come back home empty-handed". (Location 2, TBA4)

4 Discussion

The aim of the research project was twofold; to describe practices of traditional birth attendants and to evaluate factors influencing women to deliver outside the formal health care system in Kwale County. Although regarding practices of TBAs, more qualitative data was collected whereas the data collected on the factors that influence women to deliver outside the formal healthcare system was predominantly quantitative, there was substantial overlap and possibility for corroboration of findings. In this discussion therefore, results from both sides are combined to comprehensively respond to the research questions.

We identified a few limitations of the study. We experienced a minor deviation in the selection of respondents for interview in the second stage of the sampling procedure. In a few villages, the number of eligible women was so small that we had to change from systematic sampling to snowball sampling and in one instance we had to change to another village for this reason. However, as this deviation was very limited, we do not think it has influenced to a significant extent the representativeness of the study.

During the interviews, not all interviewers managed all the time to ensure privacy; in some instances other members of the household, friends, or neighbours were present. This could have led to a more socially acceptable answering pattern. Also, during focus group discussions some social desirable answering could have happened as all of them were conducted by senior students in the medical field and some of them took place at dispensaries, which are part and parcel of the formal system. This might have tempted some TBAs to respond to some of the questions in line with what they know the view of the formal healthcare sector on their role to be.

A last limitation pertains to the ability to interpret the role of family relations between TBAs and their clients. Although from literature review we had realized its existence and we explored that relationship to some level, when analysing the interview data we realized that we should have collected more detailed data on such relationships to give a more accurate insight in the prevalence of (specific) family relations between client and TBA.

Data was collected in two sub-counties of Kwale, Matuga and Kinango. Findings were generally relatively consistent across this expansive area. As there is quite a bit of homogeneity in terms of culture, specifically among the nine sub-tribes of the Mjikenda who inhabit most of Kwale and Kilifi County, and as the general natural and human environment in these areas is quite comparable, we belief that the study findings can be generalized to this wider area without much additional consideration. Possibly, the findings could equally be generalized to other parts of rural Kenya, but more variation in cultural and environmental factors should be considered. Even within Kwale county this was already the case with findings in the extremely rural areas which are inhabited by another tribe (Maasai) being slightly different.

When analysing the findings from the KAP-study, one central point emerges strongly: the majority of the women delivered outside the formal system because the formal system was not available or accessible and not because they wanted to.

It was not that the women were ignorant about pregnancy and delivery or that they were not aware of danger signs; the knowledge of most of these women on pregnancy and delivery was reasonably good, e.g. without probing the majority mentioned the importance of attending antenatal clinic and eating healthy, were able to mention at least two dangers signs, and a large majority mentioned the importance of breastfeeding for the baby. Having said that, despite more than 85% mentioning (exclusive) breast feeding, when confronted with the statement “formula milk is best for a baby”, only

about half correctly said that this statement was false. This indicates that there might be some uncertainty or misunderstanding. Furthermore, some statements on family planning indicated that knowledge on family planning might be low and also the risks of pregnancy at the extremes of the childbearing age appeared not well known. So, despite the general reasonable level of knowledge there is room for more health education on certain topics.

Also, in general, the attitudes of the women towards the formal system were positive – much more so than their attitudes towards delivering at home. The responses to the various statements on attitude pointed consistently in that direction. Most of these women did not plan to deliver outside the formal healthcare system, would not want to deliver outside the formal system next time, and would not advice others to deliver at home. They had delivered outside the formal system because they were unable to reach the formal system when they went into labour. This was in many cases not because there was no nearby facility – dispensaries were often available and not very far – but because it was night or weekend and those nearby facilities were closed and also often cited was the impossibility to organize transport at night. Although lack of access due to distance to facilities and costs of transport and delivery itself have been cited in many studies among the factors influencing home delivery, most studies did not specify the relative importance of the specific factors. In addition, our study made clear that, as much as the absolute distance is relevant, these other factors limiting access dominate in the decision making to deliver at home. We also did a sub-analysis among the women who had actually planned to deliver at home to establish if there was an over-representation of factors to be associated with home delivery in literature. There was no significant difference between those who had planned to deliver at home and the other women on any of those factors: actual distance to the facility, level of education of the woman or the husband, family income, and being married. Having said that, generally among the group of respondents, education and income levels were low but as that generally applies to Matuga and Kinango, it is not possible from our data to establish if these specific women were poorer or lower educated than the average in this area.

It appears from our findings that the efforts to educate women and inform them of the importance of delivery in the formal sector is bearing fruits and have convinced most of them. As much as such efforts should continue to maintain this situation, the focus should be on now making it possible through interventions that reduce the barriers to access.

From the FGDs, it became clear how embedded the practice of TBAs traditionally was within family relations. Most of the elderly TBAs acquired their skills through assisting their mothers or grandmothers who were also TBAs and they became TBAs when they finished child bearing themselves. Becoming a TBA was closely linked to the perceived need to be able to deliver one's daughters, daughters-in-law, and grand-daughters. This was corroborated by the findings from the interviews where in many cases, there was a family relationship between the TBA and the client

Secondly, in all places with the exception of the extremely rural areas inhabited by the Maasai, there was consensus during the FGDs that TBA practice has changed a lot from the time the older TBAs started practicing until today. The main difference emphasized in all FGDs, though less in the one conducted among the Maasai, is that over the last few years the TBAs mainly accompany the women to the hospital and conduct fewer home deliveries. Despite lack of access being the main factor identified as promoting home delivery, all agreed that access to dispensaries and health workers in rural areas has increased. In this context of change, it was also noted that nowadays TBAs are allowed in the health facilities and to attend to the woman in labour as opposed to negative attitudes towards them in the past. The increased accessibility has made more women deliver in the health facilities. However, they still request for a TBA to accompany them to those facilities. This has changed the role of TBAs from being more of a midwife to being more of a birth companion.

The change to birth companion has come with a loss of compensation for the TBAs – whereas they might receive a *leso* or some small amount of money when they conduct a home delivery, they sometimes actually lose money because of transport costs to accompany the women. There appears to be some strain between the perception of being a TBA as a profession, a specific job versus the perception of TBA as a social role of elderly women assisting their daughters and granddaughter. When taken as a social role, whatever compensation would be given to the TBA could be considered more as an appreciation than as a fee. Which might contribute to why women do not feel it necessary to compensate the TBA, who might well be their relative, for accompanying them, but feel it suitable to appreciate them when they are the actual ones helping their babies to be born. From the interviews, where the birth attendants actually conducted the deliveries, slightly more than half of the women paid something to the TBA with a significantly smaller proportion doing so if the birth attendant was explicitly referred to as a relative or friend and not as a TBA.

The increased number of small health facilities in the rural area has created an alternative pathway through which some women gained interest in assisting women during labour. In the FGDs, there were a few younger TBAs who gained interest through their attachment to a health facility, e.g. as a cleaner or as a village health worker and later they became recognized as TBAs by their communities.

The findings from the FGDs further corroborated the interview findings in that the TBAs were very clear that, even though they seemed to accept their new role as birth companion, they are regularly forced to take up the role of midwife due to the distance to the health facility, closure of the facility (nights and weekends) or absence of health workers. They emphasized that this situation still exists and despite that it is not in line with government policies to deliver at home, often, there is no alternative. Self-perceptions of TBAs regarding doing home deliveries varied between some being very confident and others expressing clearly that they were never happy to conduct deliveries because of the risks. Although several of the elder TBAs emphasized their own skills in delivery, most of them stated that women appreciate them most for their kindness, support and care during delivery (more so than that they mentioned their skills). This perception was corroborated in the interviews where almost all women expressed appreciation of the supportive attitude of the TBA. Having said that, most women also had a positive perception on attitudes of health workers in the facilities.

Regarding other details on the practice of the TBAs, there was one major point of consensus between the TBAs and the interviewed women and one major discrepancy. It was agreed across that massaging of the abdomen by the TBA during pregnancy, with the intention of "ensuring the baby gets into a good position" is still very much a standard practice. Also from both FGDs and interviews it was confirmed that other practices related to traditional medicine still regularly occur, especially in case of problems, namely the use of herbs, roots, and leaves during pregnancy (specifically if women experience pain in early pregnancy) and during delivery – especially related to excessive post-partum blood loss. Having said that, post-partum haemorrhage was at the same time the most mentioned complication which would make a TBA rush with the patient to hospital immediately.

On the issue of service provision by TBAs other than during delivery, the responses from the interviewed women and the FGDs of the TBAs differed substantially. During the FGDs, the TBAs came out clearly that antenatal care and post-natal care is part of what they do. However, especially regarding antenatal care, the large majority stated that they did not. Part of this discrepancy could be caused by women having delivered with another person or elsewhere than planned. However, even in the sub-analysis for the group for whom everything went as planned, still most did not receive antenatal care and only half stated they received postnatal care from the birth attendant. We did not explore possible reasons for this discrepancy but it is likely that the women and the TBAs have different concepts regarding on what constitutes antenatal and postnatal care.

5 Conclusion

The majority of women who delivered outside the formal healthcare system did so because the formal system was not available or accessible. Most of these women did not plan to deliver at home, would not want to deliver at home next time and would not advice others to do so. However, almost all felt that given the circumstances, the TBAs were doing what they could and were very supportive. Generally, despite some areas that could still benefit from additional health education, the knowledge about pregnancy and delivery of the women who delivered at home, was reasonably good. There are no clear signs that some general "ignorance" is what makes women deliver outside the formal system. In addition, their attitudes towards the formal healthcare system in general appeared to be positive and for the majority not to form a reason not to have delivered in a healthcare facility.

Despite a general acknowledgement that access to healthcare had improved, the main reason for women not delivering in a health facility in Kwale County was still the inaccessibility of the nearest health facility. However, for more than half of the women, the nearest facility was still more than one hour walk away which contributed to having a home delivery. The most frequently mentioned reasons however, were the limited opening hours of these small facilities (closed at night and in the weekends), absence of health workers, and the inaccessibility, especially at night, due to lack of means of transport. Costs related to delivery in a facility were also a concern for half of the respondents, although with the current situation of free delivery at government facilities, these concerns are likely to be related more to secondary costs made (transport, food etcetera) when not delivering at home.

Both the KAP study and the FGD findings were consistent: the main reason for home delivery in Kwale County is the lack of access to formal facilities and formally trained health workers. For lack of alternative, and despite the fact that most women realize that the TBA can give support and comfort but not emergency care in case it would be required, this constitutes the main reason why TBAs still conduct home deliveries. The TBAs were clear that when and where possible they try to get the women to the health facilities and in most places only conduct home deliveries if that is not possible or in the less common situation, where the woman really insists on delivering at home. Tension exists between this need for support in emergency situations and the government policy of discouraging home delivery. There is reluctance to provide TBAs (or the expectant women) with supplies of instruments and consumables to assist in an emergency home delivery for fear of encouraging such home deliveries. Absence of such however, makes home deliveries less hygienic and more risky.

We recommend that the Kwale County government continues to improve access to essential and basic emergency obstetric care services 24/7 and at less than one hour walk from peoples' homes. It should be noted however that many of the health facilities nearest to people are small (dispensaries) and this study did not established if specifically basic emergency obstetric care is actually present currently in those facilities. If not, then that is an issue that should be addressed concurrently. We also think that this recommendation should cut across other Counties with comparable circumstances. It is very clear that this situation cannot be achieved overnight. Therefore, we also recommend that the County MOH puts policies and procedures in place to support initiatives that help to bridge this deficit. This could be through provision of requirements for emergency home delivery to the pregnant women or TBAs. Also, other innovations would assist, for example, through supporting and financing initiatives that make transport during delivery accessible. Such bridging initiatives could help to strengthen the ties between TBAs and the formal healthcare system and reduce delays in reaching health facilities and referrals which too often result in maternal and infant morbidity or even death. It would be our advice that only when essential and basic emergency obstetric care services are easily accessible for every women at any time, it will become relevant to focus on the minority which had other, more socio-cultural reasons, to deliver at home.

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