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Exploring the effectiveness of dialogue in improving health facility deliveries

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Maternal mortality is a concern worldwide with higher disparities of 1 in 16 in developing compared to 1 in 2800 in developed countries. Kenya's maternal mortality ratio has increased from 414 per 100,000 live births in 2003 to 488 per 100,000 live births in 2009. In 2010 the figure increased to 530 per 100,000 live births. The purpose of the study was to explore the effectiveness of dialogue in improving health facility deliveries in Rachuonyo District. The main objective of the study was to explore the effectiveness of dialogue in improving health facility deliveries. A prospective longitudinal research was conducted collecting baseline and post intervention data. Data was collected using semi structured in depth interview guides based on the causes of maternal deaths. Data collection and analysis were done concurrently to help increase insights and clarify parameters under study till saturation of information. A manual for training CHWs was developed based on gaps identified from baseline data. Community health workers were trained on the community dialogue model addressing gaps identified from baseline phase. Implementation of the dialogue model was conducted by the trained community health workers at the health facility and at the community within households. Baseline findings of study included inadequate equipment and staff at the health facility, late gestation at first visit, limited knowledge on complications, expected date of delivery, frequency of antenatal care (ANC) visits and basic items collected in preparation for arrival of the baby. A post intervention evaluation was done with post natal mothers taken through dialogue to assess effectiveness of dialogue. Findings showed improved knowledge on complications, expected date of delivery, frequency of ANC visits, basic items collected in preparation for arrival of the baby and the role of the husband in relation to the care of the mother. The study concluded that inadequate staffing, supplies and equipment contribute to low uptake of skilled attendant deliveries at the health facility. Mothers had inadequate information on birth preparedness before the intervention and this improved after the intervention. The study recommended facility improvement on provision of adequate staffing, supplies and equipments. There is need for task shifting of health education role from health workers to local community health workers (CHWs) because they were overwhelmed with integration of services and unable to provide adequate birth preparedness information to mothers.

Key words: Antenatal care, health facility delivery, community health worker, community.

INTRODUCTION

In the developing world, only 62% of deliveries are attended by skilled attendants against 99% in the developed world (UN, 2007). In regions, such as Sub-Saharan Africa and South Asia, less than one-third of

deliveries are attended by a doctor, nurse or midwife (Koblinsky et al., 2006; Graham et al., 2006). Kenya's maternal mortality ratio has increased from 414 per 100,000 live births in 2003 to 488 per 100,000 live births in 2009. In 2010 the figure increased to 530 per 100,000 live births (WHO, 2010). The study was conducted in rural context in Nyanza province and Rachuonyo District where estimates are the lowest with only 38 and 23% deliveries by skilled attendants at health facilities respectively (KDHS, 2009).

LITERATURE REVIEW

Literature review revealed that community linkages have successful stories in increasing skilled attendant delivery care in Peru and Afghanistan (Lema et al., 2009, Abdulai et al., 2007). Othero et al. (2008) showed success of the dialogue model in implementing integrated management of childhood illnesses (IMCI) in Nyando District Kisumu County, however this intervention has not been applied to address skilled attendant births.

Focused antenatal care (FANC, 2007) was designed to promote the use of delivery by skilled attendants for all women in order to reduce maternal mortality (MOH, 2007). In Kenya skilled attendant delivery care use is 43% despite the high (92%) first antenatal care (ANC) attendance (KDHS, 2009). Many mothers attend ANC and choose to deliver in the absence of skilled attendants (56%) yet the services are available at primary care within communities. Due to the low (43%) skilled births, maternal mortality has increased from 414 per 100000 in 2003 (KDHS, 2003) to 488 per 100000 in 2008 (KDHS, 2009) with WHO reporting MMR of 530 per 100000 (WHO, 2010) raising the need for innovative community interventions to reverse this trend.

To save the lives of mothers and newborns, skilled birth services must reach the poor and marginalized communities in rural areas where so many are dying (2010 decade report). The deaths occur due to post partum haemorrhage, puerperal sepsis, obstructed labour, induced abortion and eclampsia. These deaths could be averted if preventive measures were taken and adequate care made available within communities.

For every woman who dies of pregnancy-related causes, an estimated 20 women experience acute or chronic morbidity, often with tragic consequences (Reichenheim et al., 2009). The three delays causing maternal deaths occur at individual level due to delay in decision making, during transportation due to lack of access and at the health facility due to delayed action. CHWs trained on the dialogue model bridged the gap (weak linkages) and empowered pregnant mothers with information and skills, supporting and enabling them to make informed choices regarding the place for childbirth (Benzeval et al., 1995). CHWs mediated between the community and service providers promoting understanding on the benefits of early ANC attendance and subsequent skilled attendant care.

Many deliveries (56%) took place at home with unskilled attendants: only 44% of women are delivered by skilled birth attendants and 43% of such deliveries take place in health facilities (KDHS, 2009). Interventions by CHWs included provision of health education and communication at health facility for mothers to understand the importance of early ANC attendance and sensitization in the community on the benefits of skilled attendant births. CHWs used persuasive communication on individual birth plans (IBP) with mothers as every pregnancy faces risks and the need for knowledge of complications during pregnancy, labour and post partum.

Communication with women about their lived experiences during social interactions through frequent dialogue improved community awareness on the importance of skilled attendant care in regard to the health of the mother and the unborn child. Prenatal care visits were used to educate mothers on how to avoid logistical barriers at the time of delivery (Hatt et al., 2007).

Community health strategy links communities to formal health systems, however the linkage has not improved health facility delivery care given that 39 community units have been established in Rachuonyo District and HFD has remained low (23%). Strengthening the linkage was done by training CHWs on the community dialogue model in rural context in addressing the barriers between mothers and formal health systems.

Other studies conducted in Kenya and elsewhere have shown health worker attitude, inadequate health education, access to health facility and transport issues as barriers to provision of health facility delivery care in rural settings (Naanyu et al., 2011; Owino et al., 2012; Perkins, 2009; Magoma et al., 2009; Mbaruku et al., 2009).

METHODOLOGY

To achieve the research objectives a prospective study design was adopted. Prospective study which is longitudinal is a study in which a defined group of individuals who share certain experiences and/or who are exposed to a particular intervention are followed over time.

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This was ideal for this study because the researcher having been in contact with the facility and noted high first ANC attendance against low skilled birth attendance adopted a five –phase process for the study. The study was implemented in 5 phases involving exploring experiences of mothers' with individual birth plans (IBP) or birth preparedness.

The study was conducted with rural communities in Kabondo, Rachuonyo South Sub County, Homa Bay County. The study targeted pregnant mothers attending ANC at Kabondo SDH and the eligible population for the study was 760. Participants were purposively recruited by community health workers from the facility's catchment population. The study was conducted from April 2013 to March 2014.

A team of 4 research assistants were recruited from local communities in the study district. Research assistants had a minimum of form IV level of education, as well as good interpersonal skills, and the ability to communicate fluently in English and Dholuo (the local dialect). Research assistants were paired in teams to conduct interviews, with one person being responsible for leading the interview and the other responsible for taking notes and managing recording equipment. All interviews were tape recorded.

In-depth interview guides were developed for pregnant and post natal mothers, and key informant interview guide for health workers. A check list was developed for observations to verify equipment at the health facility for provision of skilled delivery care. A pilot study was carried out at a different health facility for pre testing the instruments to determine their reliability. Instruments were examined by an expert from the department of community health Great Lakes University of Kisumu. The suggestions cited by the expert were used to make the necessary corrections before data collection.

The researcher sought permission from Nyanza Provincial Director of Medical Services who gave the permission for data collection and a letter was written to that effect. The researcher also informed the Medical Officer of Health who is the in charge of Rachuonyo South District. The researcher then visited the sampled health facility and requested the officer in charge to allow her administer research instruments. Health workers and CHWs were interviewed at the health facility. Review of registers and summarized reports were also done at the health facility. The research team interviewed each of the sampled persons to administer the instruments to the respondents. Community health workers guided the research team to each of the homesteads of pregnant mothers where interviews were conducted by recording the responses using digital tape recorders.

A total of 21 pregnant, 5 post natal mothers, 5 CHWs and 5 health workers were interviewed. Mothers were interviewed at their rural contexts (homes) and health workers at the health facility. The guiding principle in sample size determination was the point of saturation. Saturation was the point in data collection when no new or relevant information emerged from participants. Hence, the researcher considered this as the point at which no more data needed to be collected. Post intervention in depth interviews were conducted with mothers taken through dialogue to explore the effectiveness of dialogue in improving deliveries.

Data from the tape recorders were transcribed, then subsequently translated from Dholuo to English. The transcripts were entered into Microsoft excel and then analyzed thematically. Specifically, the coding process involved identifying major themes in each of the transcripts. During data analysis, identified themes were compared across the transcripts to determine differences and similarities in the perspectives of the study participants on childbirth and the factors influencing women's decisions to seek skilled care.

Health worker key informant interviews complemented this information by allowing us to explore in more detail individual experiences with reproductive health care services in rural context. The process of triangulation was used to validate the findings and involved comparing the identified themes from in depth interviews and key informant interview transcripts with the participant observations. Discrepant findings between the observations and the transcripts were addressed by follow-up informal discussions with care providers.

Clearance was sought from Great Lakes University Ethical Review Committee. The committee gave consent for the study to go on and a letter was written to that effect. Before embarking on any interview consent was sought from every participant and the interview would only go on in earnest once consent was given. The participants were asked to sign a consent form and they were assured of confidentiality of the information gathered. No identifying information was recorded from any participant and data summaries only included their descriptions in aggregate form.

RESULTS

Demographic characteristics of participants

A total of 21 pregnant mothers were interviewed on their experiences with current pregnancy and preparedness for childbirth (birth plan). All mothers were young from 15 to 35 years except one who was 37 years and were all married. The respondents were Christians of varied denominations. Mothers' education levels ranged from standard 8 to form 4 and they were allowed to choose a language convenient to them for the interview. The occupation of the respondents were; small scale farming, small scale business, house wives, and one worked as a cook at an orphanage. Duration of pregnancy at first visit ranged from 2 to 8 months with only 2 mothers starting ANC during the first trimester. Five post natal mothers were interviewed after dialogue to explore effectiveness of information imparted during home visits and choice of place for childbirth.

Knowledge of expected date of delivery (EDD)

All mothers knew their last monthly period (LMP) and this was adequate to assist health workers in calculating expected date of delivery (EDD). After calculating the EDD, the health worker informed the mother of the finding so that she knows the probable time when her baby may be born. Knowledge of EDD is part of Individual Birth Plan (IBP) so that the mother prepares how to reach the hospital during early labour.

Few mothers stated that, they were told the expected date of delivery at the hospital and some could actually name the date. However many of them stated that they were not told the date and therefore they did not know. Additionally, one mother stated that ***"****I do not know they*

did not inform me at the hospital may be they wrote it on the clinic book I do not know" Some mothers also stated that they were told the date but they have forgotten and therefore did not remember the exact date. When a mother was asked what advice to give any pregnant mother in her community she stated that, *"I can encourage her to be patient because it's only God who knows her date of delivery."*

After dialogue all mothers were able state the EDD as explained by this excerpt: *"I was reminded on the teaching from ANC during home visits by the CHW. The EDD was explained to me well and this helped me on decision to deliver in hospital. Time for delivery reached when the nurses' strike was on and when I went to the facility I was turned away and there was nothing I would do but went to community-based providers* (TBAs) *who helped me. A neighbour escorted me to the TBA who examined me and delivered my baby. I was told how I can help myself after delivery, saved some money (500) to use at the time of delivery. I paid ksh.150 for motorbike transport and 300 to the TBA for the service received."*

Knowledge of ANC frequency

When a mother attends ANC for the first time, she is cared for as if this is the only visit she would make for this pregnancy. She is given the entire package including health education and any other services that she may require during the whole period of pregnancy, a plan for the subsequent visits is written on ANC card. Most mothers interviewed did not know the frequency of ANC attendance, they stated that in every attendance they are given the next appointment a mother said *"they make appointments for you after every one month, sometimes you go after 2 months then sometimes its every month, I don't know:"*

Another mother further had to say that "*I cannot really say accurately because personally I do not follow the appointments strictly, sometimes I forget and at times the date finds me far away, maybe on a long journey, I can finish even one week before remembering the appointment date so I even forget any injection that I would have been given. I don't know about that maybe you can help me"*

After dialogue mothers were able to explain ANC frequency*; "I was prepared for childbirth, hospital delivery is good because if there is a problem you can be helped; ANC attendance is four times, the first one should be at the time you realise that you are pregnant. I preferred hospital delivery against home delivery; I was tested for malaria, TB and HIV. When I went to the hospital for delivery I was helped by the midwife and I can share my experience with other mothers in the community to deliver in hospital".*

Knowledge of complications

All participants stated that hospitals do not know about a condition "rariw", it's better to go to TBAs because they know it well and have a treatment for it. The explanation for the condition so called *"rariw"* was either a sexually transmitted infection or urinary tract infection. They are given herbs and this was preferred instead of going to hospital for treatment. Knowledge of complications is part of Individual Birth Plan (IBP) so that the mother prepares for any dangers that may occur during pregnancy, labour and immediate post partum.

Limited knowledge of complications was evident among mothers who have attended ANC more than once: when a primigravidae mother was asked the danger signs experienced during pregnancy she said that *"I do not know because I have never given birth before"*

A pregnant mother said that, *"the baby can have mal presentation sometimes, or like in my case I get severe stomach cramps so I have to seek professional help. There is another complication; I do not know if it affects only me we call it "rariw" (a barrier that occupies the space of the baby). Now that delivery is free I do not see anything that can prevent mothers from delivering in the hospital, and what I have mentioned about 'rariw' most hospitals do not know about it, it is better to go to traditional midwives because they know it well and have treatment for it."*

After dialogue knowledge of complications increased among CHWs and mothers, they were able to list the complications during pregnancy, labour and delivery and during post partum.

During pregnancy there can be bleeding before the birth of the baby (APH), malpresentation when the baby is already mature for delivery, swollen legs, breathlessness, dizziness, nausea and vomiting, low blood volume (anaemia). During labour and delivery there can be tiredness, inability to push, bleeding, nausea and vomiting, big baby, obstructed labour, malpresentations like breech, transverse lie etc. After delivery there can be bleeding after the birth of the baby (PPH) severe causing anaemia and shock, after pains (ojiwo), severe headache, dizziness, malaria (chills), Weakness after delivery, retained placenta, severe backache (nyatong tong) which can kill the mother.

Decision to seek care

In some communities seeking care is dictated by other family members, however in this study most mothers decided to attend clinic on their own. One mother said *"I decided to go for ANC because it was for my own benefit, I would be given tetanus injections and treatment in case of any illness and also acquire a clinic card, I decided for*

myself, I just informed my husband of my decision"

Some mothers also said CHWs helped influence their decisions to attend clinic. One mother said that *"Leah, a CHW came and advised me to go to the ANC; she also advised that I should save some money to use on the delivery date."* Some mothers stated that the influence of what their mothers had told them earlier on in life influenced their decision to attend clinic.

Further some said that they had gone to the hospital normally, but during that time they were informed that they start attending clinic. She said *"I did not know my condition at first till I went to the hospital and got tested for HIV, so that is when they told me to come in April and start attending clinic"* Mothers who had delivered previously had different experiences and decided to attend for various reasons. One said *"I valued my health apparently, during my 5th pregnancy I experienced prolonged labor that went on for a week so I decided to start ANC early this time"*

ANC card is given to the mother on the first visit and it documents her profile, medical history, obstetrical history and any other service that she gets during every visit until she delivers. The purpose of this card varied with different mothers as asserted by this excerpt *"If you do not have a card you can be scared, but if you have a card you do not fear because you were with your people and they know you well. Sometimes if you have a problem you are sure of being helped in the hospital. You can take the card as a shield (kaka kuot) when for sure you know you will not deliver in the hospital but for caution in case you develop a problem."*

Another pregnant mother said that, *"I can advise a mother in the community to start attending clinic so that on the date of the delivery she has a clinic book because when you do not have a clinic book, health workers may not attend to you in time even if you have complications"*

Decision to seek skilled delivery depended on the mother herself and the spouse where possible and was also influenced by the teaching from CHWs explained by this excerpt*; "I decided i will follow the teaching I got from CHW on the benefits of hospital delivery and my husband supported the idea."*

Gestation at first ANC

First ANC attendance should occur during the first trimester in order to detect and treat high risk cases early, however most mothers did not start ANC during the first trimester denying them a chance of early detection of complications and appropriate referral. Many mothers visited antenatal clinic during the third trimester.

Antenatal clinic attendance enables health workers to give health education and carefully evaluate individual mothers given that every pregnancy has its own customs, and may pose risks at any stage. Health education was not mentioned as a package during ANC.

There were mixed reactions on the kind of reception by the health workers at the ANC. On average pregnant mothers when they arrived at the health facility were issued with the clinic book, their heights and weights taken, they take blood pressure then they did some tests which included malaria and HIV tests. They then gave me medicine and also did counselling, "they *also gave me insecticide treated mosquito net*."

Information gained at ANC

Health education is a package of care during ANC and every mother is educated on Individual birth Plan (IBP). It was revealed that health workers had little time for giving individualized care and health education to mothers. A pregnant mother stated that *"health workers need to talk to mothers politely on benefits of delivering in hospital; I have been at the antenatal clinic but I have not been taught anything. A.....when in hospital you line for your turn to see the doctor then leave for home."*

Mothers who attended a number of ANC visits were unable to list complications and basic items necessary for delivery, however information on birth preparedness improved after dialogue.*"Scheduled clinic attendance and preparedness for childbirth, and hospital delivery is good because if there is a problem you can be helped. ANC attendance is scheduled four times during the entire pregnancy, the first one at the time when you realise that you are pregnant. Hospital delivery proffered against home delivery so that you are tested for malaria, TB and HIV. If there was a problem CHW would come to visit at home for teaching with other family members."*

DISCUSSION

Findings revealed a number of similarities in this study and previous studies conducted in Kenya and other countries. Demographic characteristics were consistent and were similar with other findings from studies conducted in other countries.

All mothers knew their last monthly period (LMP) and this was adequate to assist health workers in calculating the EDD to recognize labour as the event occurs around the EDD. Mothers who do not know their EDD would not be able to go to seek delivery care in hospital on time when labour starts or may recognize labour when in second stage. In this case the mother may not reach hospital in good time for skilled delivery care.

Knowing when a woman is due to deliver was considered important, and there was general consensus

that attending antenatal care at the health facility would enable the woman to know the probable date of delivery and in turn, prepare her adequately for the arrival of the baby. Mothers did not know the EDD even after more than one ANC visits and this indicated that limited information was gained from health workers at ANC. After the dialogue all mothers stated the EDD and some of them mentioned that this knowledge facilitated them on decision to seek hospital delivery (Perkins et al., 2009).

Mothers benefit from just a few antenatal visits, as long as those visits are thorough. In normal pregnancy mothers receive at least 4 thorough, comprehensive, personalized antenatal visits, spread out during the entire pregnancy. Always each visit is viewed as if it were the only visit the mother would make, the first of which should take place in the first trimester. Antenatal care is more beneficial in preventing adverse pregnancy outcomes when it is sought early in pregnancy and continued through to delivery. Early detection of problems in pregnancy leads to more timely referrals in case of mothers in high-risk categories or with complications; this is particularly true in Kenya, where three-quarters of the population live in rural areas and physical barriers pose challenges to health care delivery.

Knowledge of complications that were considered traditional was believed to be treated by TBAs as opposed to health workers. These conditions were also known to health workers and they perceived that communities do not seek such services from health facilities. A common complication mentioned by all participants was "rariw/God" a barrier that occupies the space of the baby. They however stated that hospitals do not know about it, it is better to go to TBAs because they know it well and have a treatment for it. The explanation for the condition was stated that the so called “rariw” was either a sexually transmitted infection or urinary tract infection. They are given herbs and this is preferred instead of going to hospital for treatment.

It was revealed that symptoms or problems women experience during pregnancy determined the type of providers they would go to for care and advice. They were likely to seek facility-based care if they experienced unexplained bleeding, severe abdominal pain, haemorrhage or spontaneous abortion, pelvic inflammatory disease, or anaemia. Skilled caregivers were perceived to be better equipped and trained to provide specialized treatment for problems perceived as medical in nature, whereas community-based providers (TBAs) were perceived as having unique expertise in managing problems that fall outside the realm of western medicine (Perkins et al., 2009).

Readiness for skilled attendant care and complications is promoted to reduce the delays so that all women receive appropriate care promptly. Human resources at rural health facilities would be complemented by trained local community health workers (CHWs) to reduce the workload of nurses (Decade report, 2010), introduce more regular education, counselling, and encourage use of skilled delivery care (Abdulai, 2007). Alleviating misconceptions and fears like the case of *“rariw”* reduces the gap in maternal health knowledge during prenatal care would contribute to increased utilization of skilled delivery care.

In many communities the decision to seek care is dictated by other family members like the husband, mother in-law or senior wives. In this study mothers decided to seek antenatal clinic and skilled delivery on their own. This finding agrees with previous studies as explained by recently delivered mothers from a previous study where they stated that mothers decide on the care to receive on their own and are supported by their husbands (Magoma et al., 2010). Obtaining a Mother’s Card (antenatal card) was also cited as a reason to attend facility-based antenatal care. The Mother’s Card is seen by some as a “ticket” to skilled care during delivery because without it, women who present for delivery care or for treatment with obstetric complications may be turned away from the facility or subjected to scolding and abuse by facility-based staff.

Generally, even TBAs mentioned the importance of getting an antenatal card than did other categories of respondents, and noted that they asked women to obtain an antenatal card before seeking their services so that they can be sure that the woman is unlikely to have any complication (Perkins et al., 2009). TBAs ensured mothers have ANC cards because from this document they are able to evaluate a woman likely to have complications because it is written on the card. Mothers attend to the entire clinic visits, adhere to the doctor’s prescriptions for the required period up to the last minute. But when they remember/think that things could change in the last minutes that needed operation or an episiotomy, they become fearful and opt to deliver at home (Naanyu et al., 2011).

Mothers attend ANC once they realize that they are pregnant for early diagnosis of complications and appropriate referral. Mothers did not start ANC during the first trimester denying them a chance of early detection of complications and appropriate referral. First ANC attendance should occur during the first trimester in order to detect and treat high risk cases early, however most mothers did not start ANC during the first trimester denying them a chance of early detection of complications and appropriate referral. Many mothers visited antenatal clinic during the third trimester.

To achieve the MDG target of reducing by three quarters the maternal mortality ratio by 2015, along with the MDG target of decreasing infant mortality, the international community has placed an emphasis on increasing antenatal care (ANC) and skilled attendant

deliveries care (Perkins et al., 2009). Many women do not complete 4 ANC visits. Mothers who attend regular ANC know the frequency during the period of pregnancy as part of individual birth plan (IBP) to prepare the mother for the expected baby. This information is imparted during ANC from the findings mothers did not know the frequency revealing that health education at ANC is inadequate to impart this information (Perkins et al., 2009, Cater, 2010).

Information on birth plan is shared during this time and any misconceptions that mothers have from the community are corrected appropriately. There was widespread feeling among study participants that dialogue between providers and clients is vital, and treatment options should be presented in a clear and transparent manner. Many study participants observed, however, that skilled attendants did not provide clients with sufficient information (Perkins et al., 2009).

Mothers who have attended more than one ANC visits were unable to list the roles of a husband and basic items necessary for delivery revealing that health workers are too busy to give health education. The task of conducting health education would be shifted to community health workers who are the link between the community and health facility. Health workers are overwhelmed with various activities at the health facility hence unable to conduct health education during ANC visits. Health education would influence mothers' decision to complete four ANC visits and subsequently hospital delivery.

Communication with mothers about their expectations and perceptions of health facility deliveries would improve community awareness of the importance of skilled attendant delivery care in regard to the health of the mother and the unborn child. Prenatal care visits would also be used to educate mothers on how to avoid logistical barriers at the time of delivery (Hatt et al., 2007; Cotter et al., 2006; Magoma et al., 2010; van Eijk, 2006; Titaley et al., 2010). After dialogue all mothers were confident is stating the frequency of ANC during the entire period of pregnancy.

The study concluded that mothers lack adequate information from interaction with health workers during ANC given that health workers are few and are engaged with integration of services. Preparedness for skilled attendant birth was inadequate and was evidenced by limited information on ANC frequency, complications, EDD and therefore unable to recognize labour signs for accessing the health facility for skilled delivery.

Dialogue was effective in improving information on birth preparedness and skilled attendance. The role of CHWs supported by CHEWs, as a link between the household and the formal health system was a key element in the dialogue process. CHWs were critical in bridging the gap between theory and practice, demand and supply.

The study recommended facility improvement and provision of adequate staffing, supplies and equipments. Equipments were worn out and needed urgent replacement. There is need for task shifting of health education role from health workers to CHWs because they were overwhelmed with integration of services and unable to provide adequate birth preparedness information to mothers. CHWs need allocation of resources to enable them strengthens the linkages between the community and the health facility.

Conflict of Interest

The authors have not declared any conflict of interest.

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REFERENCES

Abdulai H (2007). Raising institutional deliveries in war-ton communities. Experience of BRAC in Afghanistan. Asia P. J. Fam. Med. 6 (1).

Benzeval M, Judge K, Whitehead M (1995). Tackling inequalities in health an agenda for action. Kings Fund London.

Focused Antenatal Care (2007). Malaria in Pregnancy, Prevention of Mother-to-Child HIV transmission and Tuberculosis. Orientation Package for Service Providers. MOH.

Cater A (2010). Factors That Contribute to the Low Uptake of Skilled Care During Delivery in Malindi, Kenya ISP Collection. Paper 821. http://digitalcollections.sit.edu/isp_collection/821

Cotter K, Mark H, Marleen T (2006). Low Use of Skilled Attendants' Delivery Services in Rural Kenya. J. H, Pop. Nutr. 24(4):467-471.

Decade Report (2010). Count down to 2015

Hatt L, Krystina M, Rosmans C, Edang A, Cynthia S (2007). Did the

strategy of skilled attendance birth reach the poor in Indonesia Bulletin of WHO pp.733-820.
Kenya Demographic and Health Survey (KDHS 2003). *Kenya National Bureau of Statistics.*
Kenya National Bureau of Statistics (KNBS) and ICF Macro (2010). Kenya Demographic and Health Survey 2008-2009. Calverton, Maryland: KNBS and ICF Macro.
Koblinsky M, Zoe M, Julia H, Deleep M, Malay M, Anwar I, Edang A,SamP (2006). Going to scale with professional skilled care The Lancet. 368:1377-86.
Lema C, Sabine G, Eduardo B, Marco A, Rosa M, Oorna Campbell, Jamie M (2009). Cultural adaptation of birthing services in rural Ayacucho, Peru. Bulletin of the World Health Organization.
Magoma M, Jeniffer R, Campbell O, Simon C, Veronique F (2010). High ANC coverage and low skilled attendance in a rural Tanzanian district: a case for implementing a birth plan intervention. BMC Pregnancy and Childbirth 10:13.
Mbaruku G, Msambichaka B, Galea S, Rockers PC, Kruk ME (2009). Dissatisfaction with traditional birth attendants in rural Tanzania. Inter J. of Gyn and Obs journal homepage: www.elsevier.com/locate/ijgo
Ministry of Health Kenya (MOH) (2007). Reproductive Health Assessment Reports
Naanyu V, Joyce B, Emily P, Julie K, Nancy N, Beatrice K (2011). Exploring Low Uptake of Skilled Delivery Services and Postpartum Family Planning Services among Women Living in Western Kenya. Carolina Population Center University of North Carolina at Chapel Hill.
Othero D, Orago S, Greohewegen T, Kaseje D, Otengah P (2008). Home management of diarrhoea among under-fives in a rural community in Kenya. Household perceptions and practices. EA J. PH Dec 5(3):142-6.
Owino J, Okongo O, Legault F, Walgio O (2012). Theory in use in facility based Antenatal Care. Paper presented at Gluk annual scientific conference.
Perkins M, Ellen B, Ellen T, Mutunga A, Tuntufye M, Olipa N (2009). Out-of-pocket costs for facility-based maternity care in three African countries.
Reichenheim M, Zylberstajn F, Moraes C, Lobato G (2009). Severe acute obstetric (near-miss): A review of the relative use of its diagnostic indicators. Archives of Gyn. and Obs. 280:337-343.
Titaley C, Cynthia L, Micheal D, Peter H (2010). Why do some women still prefer traditional birth attendants and home delivery? A qualitative study on delivery care services in West Java Province, Indonesia.
United Nations *(*2007). UN Millennium Development Goals Report*.* New York*:* United Nations*.* pp*.* 16-17*.*
Van Eijk A (2006). Use of antenatal services and delivery care among women in rural western Kenya: a community based survey. Reprod Health, 3:2.
WHO (2010). *Trends in maternal mortality. Estimates developed by WHO, UNICEF, UNIPA and The World Bank Geneva.*