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Analysis of the Influence of Home Visits by Trained Traditional Birth Attendants on Uptake of Maternal Health Services in Gombe State, Northeast, Nigeria

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ABSTRACT

The access and utilization of maternal health services had been very low since 2008 in Gombe State, Northeast, Nigeria. About 45% of pregnant women attended antenatal care while health facility delivery was 17.2% in Gombe State (NDHS 2008). Most of delivery are home-based and occurred in unhygienic environment that led to infections and deaths of mother and newborn. In Gombe State, over one-fifth (21%) of home-based deliveries were taken by traditional birth attendants (TBAs) either trained or untrained, about 32% deliveries conducted by the family members or neighbor and 7% were self-assisted deliveries. A cross-sectional continuous surveys were conducted from April 2013 to December 2014 on randomly selected samples with replacement on quarter basis that yielded a total of 7,247 mothers that had at least a live birth delivery in the last 12 months prior the survey period. Multi-stage cluster sampling was adopted and structured questionnaire was used to collect the data. SPSS version 18.0 was used for the data analysis. The coverage of antenatal care in a health facility at least once during pregnancy was 85% (95% CI 80-88) in quarter two and it was consistently high with 89% (95% CI 84-92) in quarter eight. The respondents that had four or more ANC visits slowly moved from 49% (95% CI 43 – 55) in Q2 to 55% (95% CI 49-60) in quarter 8 with (p-value 0.29). Facility delivery increased from 32% (95% CI 26-38) to 49% (95% CI 43-56, $p < 0.0005$) in the reporting period. The health facility delivery was always highest for women who had at least four home visits, with 21% points higher than for women with no home visits in quarter 3 and 32% points higher in quarter eight. This article reveals that trained traditional birth attendants home visits are capable of breaking traditional and religious beliefs and practices which prevent women from going for ANC, delivery and postnatal care resulting in low utilization of maternal and neonatal healthcare services. The researcher posits that to improve maternal survival it is important to increase the number of pregnant women who receive ANC and who deliver in a health facility in Gombe State where contacts between healthcare provider and pregnant women remain low. He further reiterated that with little incentives and supportive supervision for trained TBAs, early detection and referral of women with obstetric complications would overtime witness geometrical increase. Linkages of healthcare providers and trained TBAs will foster team spirit in saving maternal and neonatal lives. Training and retraining of healthcare providers will improve clients-providers relationship, hence; attract more patronage on the part of community women.

Background to the Study

Maternal death is unacceptably high in Nigeria not because there are no health facilities but most rural women are not accessing and utilizing the services. The attitude of the people one side and lack of quality services as well as distance to

access the services are some of the contributing factors. Nigeria Demographic and Health Survey put maternal deaths to be 576 per 100,000 live births in 2013 (NDHS 2013). This figure is too high compared with some developing countries data of 230 per 100,000 live births and 16 per 100,000 live births in developed countries. Nigeria neonatal mortality rate is 37 deaths per 1,000 live births, the post-neonatal mortality rate is 31 deaths per 1,000 live births, and the peri-natal mortality rate is 41 per 1,000 pregnancies. Fifty-one percent of women in their most recent pregnancy reported visiting antenatal clinics at least four times before delivery, an improvement over the figure (45 percent) in the 2008 NDHS. Thirty-eight percent of births in Nigeria are delivered by a skilled health provider and a similar proportion of deliveries (36 percent) take place in health facilities and 38% of deliveries are attended by a skilled birth assistant (NDHS, 2013).

Project Description

In 2009 Society for Family Health (SFH) Nigeria, in collaboration with Population Services International (PSI), received a learning grant from the Bill & Melinda Gates Foundation in 2009, to test effective and scalable approaches in Gombe State that can enhance the uptake of maternal and newborn (MNH) health interventions. The community-driven intervention implementation was launched in 2010 by Society for Family Health in collaboration with Population Services International (PSI) and Transaid (UK) based organization to improve the health status of the rural community people. After eighteen months of implementation, it was observed that the uptake of facility delivery services appreciated and moved up to 27.6 percent compared to 17.2% prior the intervention in Gombe State. However, this achievement cannot only be attributed to the effort of the community-driven maternal intervention alone but as contributor to the positive increase in the facility delivery. With this promising health outcome from learning grant, additional funding from the Bill and Melinda Gates Foundation was received to scale-up successful models and tools throughout Gombe State. In the second phase of MNH, various innovations were introduced among them was the integration of trained TBAs as demand creation agents for increase uptake of maternal health care services**.** The TBAs component played major role in the intervention. The innovative TBAs strategy adopted was centered on home visits, sensitization, education, mobilization and referrals of clients to health facility thereby changed from the traditional role of TBAs of taking delivery at home. The traditional birth attendants were recruited and trained on importance of antenatal care, minimum of four prenatal visits, labour/delivery at health facility, recognition of danger signs during pregnancy, labour and newborns, postnatal check-up, birth preparedness, personal and environmental hygiene, washing of hands, clean cord care, nutrition, accompaniment, linkages with other MNH components and referrals, and documentation of services offered to the women with the use of management information system forms.

Problem Statement

In an attempt to bridge the gap of inadequate healthcare providers and to increase uptake of maternal health services among the rural communities in Gombe State, SFH introduced home visits through trained TBAs as one of her innovation. In spite of the training and motivation for the trained TBAs to effectively conduct home visits to push women to access and utilize health services, it appears as if the efforts have no effect in increasing ANC and facility delivery. This could either be lack of adequate real-time data to ascertain the effectiveness of the home visits or the women were not convinced enough to access the services in the State. Therefore, there was need to conduct population household-based survey that properly track the implementations of the innovations especially home visits strategy

that would be of guide to health education planners, managers and SFH as to what to put in place to improve the uptake of maternal and neonatal care services in the State.

Methodology

Research Design

The survey design was a cross-sectional population household-based survey in which a multi-stage cluster sampling technique was adopted. The interviews were face-to-face (personal interview method) among mothers with a live birth in the last 12 months of delivery prior the survey period. Eight wave's surveys were conducted to track the coverage and performance of trained TBAs as it affects the beneficiaries at the community level. The first quarter was used as pre-run (pilot study), which was used for refinement of processes of the surveys. Ethical clearance was obtained from the National Health Research Ethical Committee (NHREC), a division of the Federal Ministry of Health. Verbal informed consent was sought from all study participants before being interviewed. Measures were taken to ensure that respect, dignity and freedom of each individual participating was ensured.

Historical Background of the Study Area

Gombe State, located in the northeastern part of Nigeria, is one of the country's 36 states with its capital in Gombe. The boundaries of the state roughly correspond to those of the Gombe Emirate traditional state. The State was created in October 1996 from the old Bauchi State. It is located in the northeastern zone, right within the expansive savannah that allows the state to share common borders with the states of Borno, Yobe, Taraba, Adamawa and Bauchi. Gombe State as at 2015 has an estimated population of 3,140,189 million of which 1,573,235 (50.1%) males and 1,566,954 (49.9%) females. The administrative division is divided into eleven Local Government Areas (LGAs), namely, Akko, Balanga, Billiri, Dukku,Funakaye, Kaltungo, Kwami, Nafada, Shongom and Yalmatu Deba. It has various ethnic groups like Tangale, Terawa, Waja, Kumo, Fulani, Kanuri, Bolewa, Jukun, Pero/Shonge, Tula, Cham, Lunguda, Dadiya, Banbuka, Hausa and Kamo/Awak among others. The state Gombe has two distinct climates, the dry season (November–March) and the rainy season (April–October) with an average rainfall of 850mm. Gombe state serves as central business nerves of the northeast zone. The total fertility rate is 7.0%. The economy of Gombe state is driven by industrial and agricultural activities in two forms: medium manufacturing and small-scale industries and agricultural activities. Majority of the people (72.2%) live below $1 per day. Basic amenities like food, shelter, clothing and security are at low ebb and majority of the communities depend on bole-hole and stream for drinking water. Maternal death is 727 per 100,000 live births in Gombe state higher than the national figures of 576 per 100,000 and newborn mortality is 43 per 1,000 live births (NDHS 2013). The facility delivery as at 2008 was 17.2%, and appreciated to 27.6% in 2013 (NDHS 2008; 2013) prior the maternal and neonatal health care intervention.

Study Population

The study was conducted in 10 out of 11 Local Government Areas (LGAs) of the State excluding Gombe LGA metropolis because it is the capital and has every infrastructure that is absent in rural communities. The study population was household-based comprised the married women of reproductive age (15 – 49 years) who had at least a live birth in the last 12 months per wave of the preceding survey period (January 2013 – December 2014). The waves were (January – March, April-June 2013, July –September 2013, October –December 2013, January – March 2014, April –June 2014, July –September 2014 and October – December 2014).

Sampling Techniques

Multi-stage cluster sampling techniques was adopted in selecting the enumeration areas (clusters) from the NPC Master Enumeration List. In the first stage, all clusters excluding Gombe metropolis were subdivided into rural and urban sectors. All the clusters per sector were serialized from 1 to nth population. The enumeration areas (clusters) were regarded as the primary sampling unit. Each quarter, 120 clusters were considered, that is, 60 clusters were selected from rural and 60 clusters from urban areas in all the 10 LGAs. A probability proportional to size sampling was adopted to select clusters given every element in the sampling frame an equal chance of inclusion into the final sample for the study. Clusters were defined as enumeration areas and were selected with probability proportional to population size, with implicit stratification. Every wave sample selection was with replacement since each of the waves was independent and coverage varied per LGA. The researcher used 80% power, assuming design effect of 1.5, and 95% confidence interval.

Literature Review

In time immemorial, traditional birth attendant is responsible for caring for a woman when she becomes pregnant. The community members recognize these laudable roles and entrusted the pregnancy related health issues to TBAs. Virtually in all communities the traditional birth attendants are consulted for check-up or massaging. Traditional births attendants are also consulted for health related problems occurring among pregnant women and this they observed until during the second weeks after delivery (Swantz, 1966; Cosminsky, 1983; Kayombo, 1997). According to the research findings TBAs have rich knowledge of herbal plants, which are used for managing pregnancy and child delivery (Swantz, 1966; Cosminsky, 1983; Kayombo, 1997). Further, TBAs educate pregnant women on appropriate diet to take, pregnancy-related taboos and on how to take care of infants after birth (Swantz, 1966; Cosminsky, 1983; Kayombo, 1997). Most TBAs are known to have some knowledge of risk signs during pregnancy (Swantz, 1966; Cosminsky, 1983; Kayombo, 1997). Some of the taboos in the past may be today interpreted as negative aspects on health of mother. In many cultures TBAs are respected members of their community, perform important cultural rituals and provide essential social support to women during childbirth (Chalmers 1993, Chen 1981, Aletor 1981, Campero 1998, Carney 1996). However, in some cultures, for example in the Indian sub-continent, TBAs are low caste and lack influence. People believe that body fluids released at childbirth (liquor and blood) are polluting and employ a TBA to carry out polluting tasks on behalf of the rest of the family (Blanchet 1984, Rozario 1995, Bhatia 1981). In all cases their beliefs and practices are influenced by local customs and sometimes by religion (Bullough 2000). The workload of TBAs varies considerably from place to place and among individuals. Some TBAs may only attend family members and thus conduct only 2 or 3 deliveries a year while others have a wider clientele and a higher number of deliveries. It is unusual for TBAs to deliver more than 20 women in a year (WHO 1997). Proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that could cause the death or serious illness of the mother and/or the infant (Van Lerberghe and De Brouwere, 2001; WHO, 2006).

Tradition Birth Attendants (TBAs) are integral members of their communities and provide an important window to local customs, traditions, and perceptions regarding childbirth and newborn care (Kamal, 1998; Leedam, 1985). The number of deliveries assisted by TBAs varies per country and per TBA (Mbiydzenyuy, 2012). In Tanzania, for example, Tanzania Demographic Health Survey (DHS) (2010) has shown that among 50% of home deliveries, 29.1% were assisted by relatives of whom some could be TBAs, 14.7%

delivery attended by TBAs, and 3.4% delivered without assistance and 2.8% by others. More or less similar findings have been shown by studies done by Cosmnisky (1983) and Mbiydzenyuy (2012). In West Africa Studies show that relatives and TBAs assist 60-80% child deliveries (This Day Nigeria, 2007; Mbiydzenyuy, 2012). In Asia on the other hand studies show a variation between 40-80% of child deliveries assisted by TBAs and relatives. In Gombe, 72% of the mothers delivered at home (NDHS, 2013). In the word of Grieco and Turner, TBAs have been assisting child delivery for decades; however, they have been neglected since the introduction of conventional medicine in sub-Saharan and other developing countries (Grieco & Turner, 2005; Busia & Kasilo, 2010). This may partly be due to the impact of western education, which sees everything in developing countries as fetish or paganism (Grieco & Turner, 2005; Busia & Kasilo, 2010).

Use of trained TBAs in maternal intervention as demand creation agents could go a long way to encourage and mobilize pregnant women, newborn mothers and other women of reproductive age to cultivate habits of accessing and utilizing health facility services. TBAs involvement in the community mobilization in uptake of health services bridges the gap between community and health care provider; thereby push the women to access health facility services. Despites the enormous benefits health sector could derive from using trained TBAs, some scholars went as far as prohibiting TBAs from conducting any form of delivery, even when there was no skilled midwife around (Titaley et al., 2010). According to the qualitative study conducted in Araf regional state of Ethiopia, it was recorded that trained traditional birth attendants are the backbone of the maternal and child health development in pastoralist communities. The findings also revealed inadequacy of the trained TBAs to meet the needs of the pastoralist communities including antenatal care, delivery, postnatal care and family planning. During the Focus Group Discussion conducted in Ethiopia, the participants claimed that trained TBAs, also engaged counseling, child care, immunization, postnatal care, detection of complication and other social services in addition to taking delivery. In the same vein Satishchandra et al. (2009) argued that programme for TBAs with regular reinforcements in the resource poor setting would not only improve the quality of newborn care but also reduces peri-natal deaths. More studies reviewed also show positive results on the impact of training TBAs on maternal and newborn mortality (Begum et al., 1990; Sibley, 1997; Garcéset al., 2012).

This study conceptual framework shows linkages between the trained TBAs as demand creation agents, women of reproductive age (15 -49) years, access and utilization of facility services and health outcomes. The framework is based on innovation strategy of trained TBAs integration as demand creation agents for the MNHC delivery services in terms of preventive interventions in community settings, and builds around catchment areas of the existing health services. The theory is based on the individual's thoughts of each woman as the determinate of her emotions and behaviors and therefore reveals her personality in the course of interaction. It is a belief that women health seeking behaviour will improve as results of continuous interactions with trained TBAs and this will lead to increase uptake of health facility services among the rural community women. Therefore, diffusion theory that deals with individual's perception during interaction is considered as one of the theories appropriate for the maternal and newborn intervention. Diffusion is the "process by which an innovation is communicated through certain channels over a period of time among the members of a social system". An innovation is "an idea, practice, or object that is perceived to be new by an individual

or other unit of adoption". "Communication is a process in which participants create and share information with one another to reach a mutual understanding" (Rogers, 1995). Through trained TBAs as demand creation agents, messages relating to maternal and newborn health care were communicated over a period of time among the members (rural women) of a social system". Mode of prevention messages before, during and after delivery was passed on to the women. With this interaction, individual perceptions were changed towards holding on to unhealthy home-based practices and adopted new way of life. A social system identities moral behaviour that are common among its social group members (Turner 1986). These social interactions define the norms, which also specify the expected maternal and newborn health seeking behaviour of the members of the social group and these expected behaviour eventually formed. Due to importance of the interactions (home visits) and ideal health seeking behaviour among the women of reproductive age, health interventions that aimed to promote access and utilization of health facility services were instituted.

Sources and Method of Data Analysis

The data for this study were derived from seven waves (April 2013 – December 2014) of continuous surveys conducted among mothers that had at least live births in the last 12 months preceding the survey period. The continuous surveys were carried out to monitor the implementation of maternal and neonatal healthcare project at population based in Gombe State by Society of Family Health (SFH), Nigeria through funding from Bill and Melinda Gates Foundation. In the continuous surveys, 7,447 households were visited in seven waves, and 7,247 women aged 15 -49 years had a live birth in the 12 months prior the survey period. Out of the 7,247 eligible women identified for the interview, 7,239 were successfully interviewed giving a response rate of 99.9%. The primary respondents were women in their fertility age (WIFA) who had infants aged 0–12 months. In analyzing the data, a multi-stage process was used to create a base model for four dependent variables: home visits, ANC visit, delivery at a health facility, delivery assistance and use of PNC. Outcomes were investigated using a binary logistic regression model. Those independent variables found to be significant at the bi-variate level were included in a multi-variate regression model for each dependent variable.

Dependent Variables

Four dependent variables were created from questions included in the maternal health component of the continuous survey questionnaire on (a) antenatal care by health care providers, (b) delivery care at health facility, (c) delivery assistance, and (d) postnatal care. Each of the listed dependent variables is coded '1' if the woman obtained services either from trained TBAs or at health facility.

Independent Variables

The variables included as predictors are home visits by trained TBAs, frequency of home visits, exposure to intervention messages, residence, women's age, women's education and religion in the analyses given in Tables 1 and 2. Place of residence was given as rural or urban to capture effect of urbanization and modernization. Level of education is another factor that was related to the uptake of health facility services because it affects knowledge and awareness of health seeking behavior, and it was linked to the woman's interaction with the trained TBAs.

Findings

Demographic variables used in this analysis include age of mothers, and education. Socio-economic factors included were geographical location, women's education, religion and exposure to intervention messages through trained TBAs.

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Table 1: Demographic Characteristics of the Sample

Description	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Sample Size	**841**	**1118**	**1205**	**940**	**1178**	**1144**	**821**
Sector							
Urban	47.0	41.2	46.6	49.3	51.4	48.9	44.3
Rural	53.0	58.8	53.4	50.7	48.6	51.1	55.7
Age of Mothers							
15 – 19	11.7	9.1	7.6	10.6	7.0	8.9	11.0
20 – 24	27.9	29.9	30.0	29.7	25.9	29.3	27.3
25 – 29	30.6	30.1	31.5	27.3	31.5	30.2	27.4
30 – 34	23.1	19.7	20.4	20.3	25.5	19.7	22.9
35 – 39	6.3	8.2	8.0	9.0	9.6	8.9	9.0
40 – 49	0.5	3.0	2.7	2.6	2.6	3.0	2.4
Mothers' Highest School Completed							
No Formal Education	23.1	20.9	21.8	28.8	25.6	26.3	36.7
Qu'ranic Education	8.6	7.9	7.3	12.7	9.6	9.9	13.8
Did not complete primary	11.2	8.4	7.8	7.1	5.7	4.7	6.6
Completed Primary School	29.7	22.7	18.7	27.8	19.7	15.4	16.8
Secondary	22.9	35.1	34.8	19.9	34.8	28.4	22.2
Tertiary	4.5	5.0	9.6	3.7	4.7	15.3	4.0
Mean	3.34	3.58	3.66	3.08	3.43	3.56	2.86
Religion							
Christian	17.1	18.6	17.8	19.3	19.7	18.9	18.3
Muslim	82.9	81.4	82.2	80.7	80.3	81.1	81.7

Source: Field Survey, 2015

Table1 describes the demographic characteristics of the respondents. The sample included all women that have at least a live birth in the last 12 months prior the continuous survey. Many people can speak up to three dialects in Gombe state. However, Hausa (75%) was the first and most comfortable language for all rural community dwellers and followed by Fulfulde (44%), which is dominantly spoken by Fulani clan in Gombe state. In this analysis, the first quarter of 2013 continuous survey was used as pilot study, hence, analysis started from quarter two April 2013 to December 2014, seven quarters (three-month periods) of continuous survey were completed in Gombe State. A total of 7,447 households were visited during this period. In those households, 7,247 women aged 15-49 years were listed as having had a live birth in the 12 months prior to survey and of these 7,239 were successfully interviewed. The analysis excluded interviews for which no valid date of births for the mother was recorded; as a result the total of 6,676 women who had a live birth 0-11 months prior to survey were analyzed and presented (table 2). The characteristics of these women were comparable between quarters, with 47% living in urban areas in quarter 2 (April-June 2013) compared to 44% in quarter 8 (October-December 2014).

Age of Respondents

Over half of the sample was aged 20 -29 years, about one-third were aged 30-39 years, about one-tenth were aged 15-19 years and less than three percent were aged 40-49 years. In the age distribution, the teenage mothers (15-19) had 9%, age cohort 20-24 years (29%), the mothers' whose age lies between 25-

29 years recorded 30%, aged 30-34 had 22%, aged 35-39 years (8%), while 40-49 years of women of reproductive age had 2% respectively (table 1).

Mother's Education

Majority (68%) of respondents had some formal education in quarter 2, 2013 compared to 50% in quarter 8 in 2014. Among the respondents 23% had secondary education across the seven waves, followed by no formal education (275), respondents that had their primary school education completed (18%), Qu'ranic education (10%) and tertiary education (7%). 68% having some formal education in quarter 2, 2013 compared to 50% in quarter 8 in 2014.

Religion of Respondents

Majority of the sampled population are Muslim. 83% being Muslim in quarter 2 compared to 82% in quarter 8; while 17% Christian in quarter 2 compared to 18% in quarter 8.

Place of Residence

Over half (53%) of the surveyed mothers that had at least a live birth in the last 12 months prior the survey period are living in rural area while 47% of the mothers place of living is in urban.

Home Visits by Trained TBAs

The proportion of women who reported having at least one home visit from a trained TBA during pregnancy that led to their recent birth increased per quarter of continuous survey increased from 6% (95% CI 4 – 9) in April-June 2013 to 43% (95%CI, 35 – 52) in quarter 8 October – December 2014 with ($p< 0.001$). Among the targeted women, 7% (95% CI 5-11) of them had at least four home visits in the last quarter from the baseline (Q2) that was zero. The coverage of at least four home visits in pregnancy was higher for Christian than Muslim women interviewed in the continuous survey with 9% (95%CI 7-11) compared to 4% (95% CI 3-5, ($p< 0.001$). There was no supporting evidence of difference of four home visits for women with and without some formal education by marital status or sector difference whatsoever.

Antenatal Care Utilization Services

The coverage of antenatal care attendance at health by the mothers who had at least a live birth in last 12 months prior the survey was 85% (95% CI 80-88) in Q2 and it was consistently high with 89% (95% CI 84-92) in Q8 during the two years of population-based tracking of MNHC implementation. However, the coverage of four or more antenatal care visits was lower throughout the seven quarters. The respondents that had four or more ANC visits slowly moved from 49% (95% CI 43 – 55) in Q2 to 55% (95% CI 49-60) in quarter 8 with (p-value 0.29). This confirm other findings from literature reviewed from developing countries which stated that majority of pregnant women do not access and utilize ANC services up to four times before they had their babies. Women with some level of education had the highest ANC visits to health facility within the reporting period with 63% (95% CI 54 -77, $p< 0.001$); Christian women recorded 73% (95% CI 70-77, $p< 0.001$) and women living in urban area had 54% (95% CI 51-56, $p< 0.001$).

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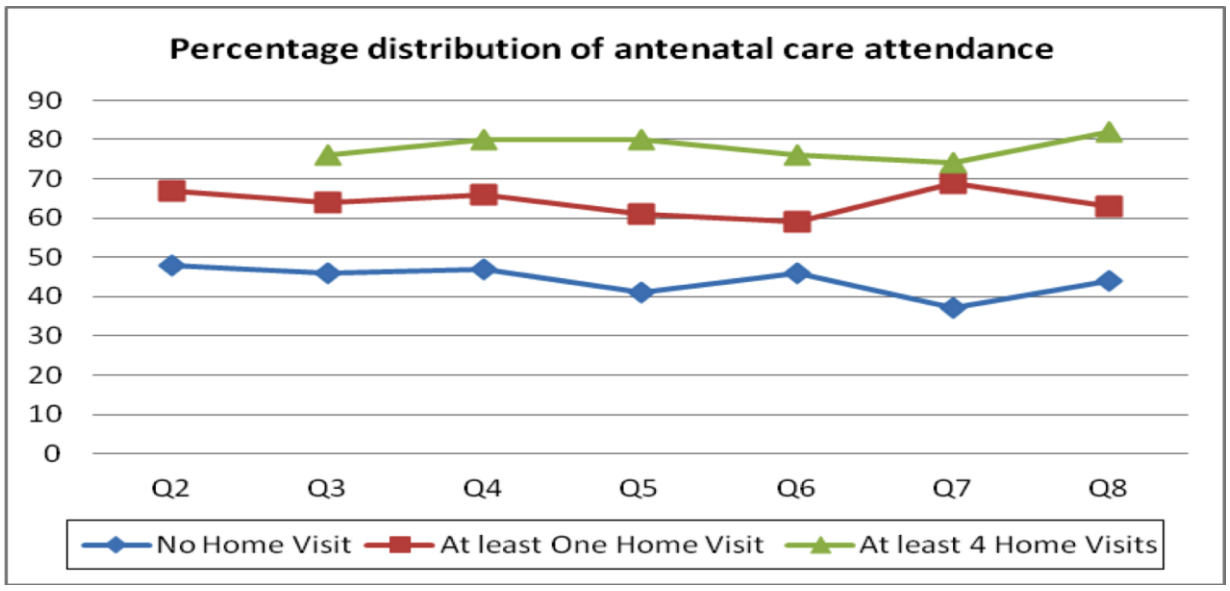
The access and utilization of health facility of antenatal four times visits for women with no ANC, at least one and at least four home visits by trained TBAs during pregnancy is plotted for each quarter to see the trend of progress made from one quarter to another quarter. The line graph show the trend of effectiveness of trained TBAs home visits as in maternal health care intervention which home visits and mobilization were the core roles of TBAs' calling or integration. In quarter 1, there was no ANC four times visits to health facility reported, hence, comparisons are drawn from quarter three (Q3). Critical examination of the trend had shown that women who were visited up to four times during pregnancy period recorded 30 percent points higher than women who were not visited at all by the trained TBAs between quarter 3 (July –September 2013) and recorded 38 percent points higher in quarter 8 (October –December 2014). Findings from the continuous survey confirmed that interpersonal communication (IPC) strategy in diffusing health information is very vital in uptake of health facility services. The integration of trained traditional birth attendants as demand creation agents in maternal and neonatal health care promotion greatly enhanced the uptake of antenatal care services at the health facility compared with women who had no contact with the trained TBAs. There was improvement in uptake of maternal health care services by the women during the last most recent pregnancy. The data also revealed that the higher the home visits to the women by trained TBAs the higher the likelihood of behaviour change toward the uptake of health facility services.



*There was no woman who had 4 trained TBAs home visits in Q2

Figure 1: Percentage distribution of Antenatal Care visits at least four times in a health facility for women who had no, 2 -3 home visits and at least 4 home visits by a trained traditional birth attendants during pregnancy

Source: Field Survey 2015

Table 3: Unadjusted and adjusted odd ratios for having at least four antenatal care visits in a health facility, Gombe State

	Unadjusted OR	p-value	Adjusted OR	p-value
Between 1-3 home visits	1.9 (1.6-2.2)	<0.001	1.3 (0.9-1.8)	0.22
Four or more home visits	4.3 (3.1-5.8)	<0.001	2.9 (1.8-4.5)	<0.001
Interaction on time and home visits			1.1 (1.0-1.1)	0.07

***Adjusted for residence, education level, marital status, quarter, and religion**

Source: Field Survey, 2015

In table 2, the odds ratios for ANC 4 are presented for women who had between one and three home visits or four or more home visits from a trained TBA compared to no home visits at all. The unadjusted odds of having ANC 4 was higher for women receiving any number of home visits compared to women receiving no home visits, and after adjustment for being educated, living in an urban area, being Christian, or being married, there was statistical evidence that the odds ratio for ANC 4 was 2.9 times higher (95% CI 1.8-4.5) for women who had at least four home visits from a trained community health volunteer during pregnancy than women who had no home visits (table 2).

Facility Delivery

Facility delivery among the women of reproductive age increased from 32% (95% CI 26-38) to 49% (95% CI 43-56, $p < 0.0005$) in the reporting period. The women with some formal education that had at least four antenatal care visits recorded the highest health facility delivery with 58% (95% CI 55-61, $p<0.001$). In term of religion, Christian women in the survey recorded 67% (95% CI 62-71, $p<0.001$) and women that live in urban had 53% (95% CI 50-57, $p<0.001$). The coverage of health facility delivery for women with no, at least one, and at least four home visits by a trained TBA during pregnancy is plotted for each quarter in figure 4.2. Again, coverage was always highest for women who had at least four home visits, being 21 percentage points higher than for women with no home visits in Q3 and 32 percentage points higher in Q8. In table 4.3, the odds ratios for facility delivery are presented for women who had between one and three home visits or four or more home visits from a trained TBA compared to no home visits at all. The unadjusted odds of having a facility delivery was higher for women receiving any number of home visits compared to women receiving no home visits, but again the result lost evidence of statistical significance after adjustment for being educated, living in an urban area, being Christian, or being married, except for those women who received at least four home visits (adjusted odds ratio 1.6 (95% CI 1.0-2.6).

In table 2, the odds ratios for ANC 4 are presented for women who had between one and three home visits or four or more home visits from a trained TBA compared to no home visits at all. The unadjusted odds of having ANC 4 was higher for women receiving any number of home visits compared to women receiving no home visits, and after adjustment for being educated, living in an urban area, being Christian, or being married, there was statistical evidence that the odds ratio for ANC 4 was 2.9 times higher (95% CI 1.8-4.5) for women who had at least four home visits from a trained community health volunteer during pregnancy than women who had no home visits (table 2).

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Facility Delivery

Facility delivery among the women of reproductive age increased from 32% (95% CI 26-38) to 49% (95% CI 43-56, p < 0.0005) in the reporting period. The women with some formal education that had at least four antenatal care visits recorded the highest health facility delivery with 58% (95% CI 55-61, p<0.001). In term of religion, Christian women in the survey recorded 67% (95% CI 62-71, p<0.001) and women that live in urban had 53% (95% CI 50-57, p<0.001). Again, coverage was always highest for women who had at least four home visits, being 21 percentage points higher than for women with no home visits in Q3 and 32 percentage points higher in Q8. In table 4, the odds ratios for facility delivery are presented for women who had between one and three home visits or four or more home visits from a trained TBA compared to no home visits at all. The unadjusted odds of having a facility delivery was higher for women receiving any number of home visits compared to women receiving no home visits, but again the result lost evidence of statistical significance after adjustment for being educated, living in an urban area, being Christian, or being married, except for those women who received at least four home visits (adjusted odds ratio 1.6 (95% CI 1.0-2.6, table 3).

Table 5: Unadjusted and adjusted odd ratios for facility delivery, Gombe State

	Unadjusted OR	p-value	Adjusted OR	p-value
Between 1-3 home visits	1.9 (1.6-2.2)	<0.001	1.1 (0.7-1.6)	0.68
Four or more home visits	4.3 (3.1-5.8)	<0.001	1.6 (1.0-2.6)	0.03
Interaction on time and home visits			1.1 (1.0-1.2)	0.02

*Adjusted for residence, education level, marital status, quarter, and religion

Source: Field Survey, 2014

Postnatal Care

Table 6: Proportion of women who delivered in the last 12 months who were visited by trained traditional birth attendants within 48 hours of delivery

Indicator	Q2 (2013)	Q3 (2013)	Q4 (2013)	Q5 (2014)	Q6 (2014)	Q7 (2014)	Q8 (2014)
Postnatal Care	9(7,11)	11(9,13)	16(14,18)	18(16,21)	32(29,34)	29(27,32)	43(40,47)

Source: Field Survey, 2014

Postnatal care has been identified by the World Health Organization (WHO) as an important component in addressing prevention of newborn mortality, and this aspect was also embedded in the work plan of trained TBAs. The WHO information and accountability for women and children's health (2012) identified early postnatal care as one essential indicator to measure progress for newborn health. In Gombe state, trained TBAs play an increasingly significant role in the delivery of preventive and curative health care to women of reproductive age and infants especially newborn. In the continuous survey, about 9.4% of the women went for checkup service after delivery in the reporting period.

DISCUSSION ON FINDINGS

Table 1 describes the demographic characteristics of the respondents. Respondents' data were classified in terms of age, mother's education, religion, and place of residence. Three-quarter (75%) of the respondents can speak and write comfortably in Hausa language and followed by Fulfulde (44%), which is dominantly spoken by Fulani clan in Gombe state. In this analysis, researcher found that many people could speak up to three dialects in Gombe State, however, general communication are mainly in Hausa and Fulfulde

in the state. Over half of the sample was aged between 20 -29 years, about one-third were aged 30-39 years, about one-tenth were aged 15-19 years and less than three percent were aged 40-49 years within the women of reproductive age (WRA). In the age distribution, the teenage mothers (15-19) recorded 9%, age cohort 20-24 years (29%), the mothers' whose age lies between 25-29 years recorded 30%, aged 30-34 had 22%, 35-39 years recorded (8%) and 40-49 years had 2% respectively. Majority (68%) of respondents had some formal education in quarter 2, 2013 compared to 50% in quarter 8 in 2014. Among the respondents 23% had secondary education across the seven waves, followed by no formal education (27 percent), respondents that had their primary school education completed (18%), Qu'ranic education (10 percent) and tertiary education (7%). About 68% of respondents had some formal education in quarter 2, 2013 compared to 50% in quarter 8 in 2014. Majority of the sampled population are Muslim; 83% being Muslim in quarter 2 compared to 82% in quarter 8; while 17% Christian in quarter 2 compared to 18% in quarter 8. Over half (53%) of the surveyed mothers that had at least a live birth in the last 12 months prior the survey period are living in rural area while 47% of the mothers place of living is in urban.

Exposure to Antenatal Care Visits in Maternal Health Care Intervention

Table 2 (Appendix) deals with project intervention exposure in the community. In the intervention, it was observed that the antenatal care visits to health facility and health facility delivery were associated with the home visits conducted by trained traditional birth attendants to the mothers at least once or al least 4 home visits during the intervention. Most of the respondents claimed to have received information about maternal health services through interaction with the trained TBAs and the remaining ones got health information from other community health workers such as faith-based organizational volunteers. The proportion of women who received at least one home visit from a trained TBA during pregnancy that led to their recent birth increased from 6% in April-June 2013 to 43% in quarter 8 (October-December 2014). Among the targeted women, 7% (95% CI 5-11) of them had at least four home visits in the last quarter from the baseline (Q2) that was zero. The coverage of at least four home visits in pregnancy was higher for Christian than Muslim women interviewed in the continuous survey with 9% (95%CI 7-11) compared to 4% (95% CI 3-5, ($p< 0.001$) (Tanya et al., 2015). There was no supporting evidence of difference of four home visits for women with and without some formal education by marital status or sector difference whatsoever. The role of traditional birth attendants in provision of health care in resource constraint countries is still important because of the current inadequacy of human resource for health (Begum et al., 1990; Sibley, 1997).

Critical examination of the trend has shown that women who were visited up to four times during pregnancy period recorded 30 percent points higher than women who were not visited at all by the trained TBAs between quarter 3 (July – September 2013) and recorded 38 percent points higher in quarter 8 (October –December 2014). Findings from the continuous survey confirmed that interpersonal communication (IPC) strategy in diffusing health information is very vital in uptake of health facility services. The table 4 shows that integration of trained traditional birth attendants as demand creation agents in maternal and neonatal health care promotion greatly increased the uptake of antenatal care services at the health facility compared with women who had no contact with the trained TBAs. There was improvement in uptake of maternal health care services by the women during the last most recent pregnancy. The data also revealed that the higher the home visits to the women by trained TBAs the higher the likelihood of positive behaviour change toward the uptake of health facility services. As

maternal and neonatal health care (MNHC) project anchored by SFH is currently doing, government should also adapt the strategy and integrate trained TBAs in primary health care system strategy for home visits, community mobilization, sensitization, and encouragement on symptoms of obstetric complications that will require healthcare provider attention to prevent mother and child from further complications. As argued earlier trained TBAs are experts on their own right and thus they deserve respect in aspect of maternal health issues concerning mother and neonates. Continuation of training and retraining of TBAs will promote dialogue, trust, patient, tolerance, willingness to collaborate, transparent and ensure team spirit among TBAs and healthcare providers as partners in health care. According to Cosmisky and Kayombo, trained TBAs are product of cultural system in community, and one of their roles is to protect culture from being invaded by other foreign cultures (Cosmisky, 1983; Kayombo, 1997). Findings had shown that trained TBAs adhered to the terms of their engagement in the conduct of home visits after training and integration into maternal health care intervention. Prior the MNHC community-driven intervention, many TBAs do not go on home visits but wait until they are being sent for by a woman in labour or her relatives. But with the introduction of MNHC and integration of trained TBAs, home visits strategy started taking its course by playing prominent roles in maternal health promotion. As a result of this, trained TBAs started visiting women and educate them on ANC, delivery, care of newborn and even postnatal education. So this article invalidates the argument of Matthew (2001), Rozario (1998) and others that claimed TBAs do not play a major role in providing antenatal care (Mathews et al., 2001, Rozario 1998, Sharif and Singh 2002). Similarly, this study confirms that trained TBAs can effectively be used to identify expectant mothers and encourage them to go for ANC services at health facility. It had also confirmed the contribution of trained TBAs in increase uptake of maternal and newborn services at facility level, hence, indirectly contributed to the reduction of maternal and neonates morbidity and mortality in Gombe State.

Coverage of Antenatal Care

Access to antenatal care has a significant impact on the health of the mother. Provision of adequate antenatal care is regarded as a pillar of maternal health care. The early detection of high-risk pregnancies through antenatal care and prompt referrals has been advocated as good tools to reduce maternal mortality according to World Health Organization (WHO). The trained TBAs are saddled with responsibility to create awareness about health seeking behavior in the community, increase the antenatal care visits and skilled delivery uptake of health facility service through regular home visits. Table 2 and 4 displayed coverage of at least one antenatal care contact in a health facility among women who had a live birth in the last 12 months preceding survey disaggregated by women who had at least 1 home visit from a trained TBA and those who had no home visit. The number of women with no home visit by trained TBAs were 4,674; and women who had no home visit by a trained TBA but had at least 4 ANC visits in a facility in quarter 2 recorded 48% compared to 44% in quarter 8. The decreased can be attributed to lack of encouragement from trained TBAs or may be due to other factors that this study did not explore. The total number of women with at least one visit from a trained TBA was 2,002 and among them that had at least one home visit by a trained TBA, that had at least 4 ANC in facility with 95% confidence interval was 67% in quarter 2 (April-June 2013) and it increased to 69% in quarter 8 (October-December 2014). The survey findings showed that women who live in urban compared to rural areas, who are Christian compared to Muslim, who have some formal education compared to no education, or who are married consistently had higher antenatal care at least four

times coverage; and that Christian compared to Muslim women had higher coverage of contacts with the trained volunteers. This was in conformity with what in-house review of MNHC project documents and analysis of the continuous surveys by IDEAS, School of Hygiene and Tropical Medicine, University of London (Tanya Marchant et al; 2015). However, after adjusting for these factors the research observed that women who had at least four home visits by a volunteer had three times higher odds of at least four ANC visits and one and a half times higher odds of health facility delivery than women who were not visited at home.

The women that had the opportunity of home visits by trained TBA had a higher likelihood of accessing and utilizing the health facility services than those women with no home visit by the trained TBA. This demonstrates the importance of trained TBAs in demand creation for maternal health services. In table 3, the odds ratios for ANC 4 are presented for women who had between one and three home visits or four or more home visits from a trained TBA compared to no home visits at all. The unadjusted odds of having ANC four times was higher for women receiving any number of home visits compared to women receiving no home visits, and after adjustment for being educated, living in an urban area, being Christian, or being married, there was statistical evidence that the odds ratio for ANC 4 was 2.9 times higher (95% CI 1.8-4.5) for women who had at least four home visits from a trained community health volunteer during pregnancy than women who had no home visits. The researcher is aware that restructuring of health systems demands that the interest of all stakeholders be considered. It will requires balancing of interest, probably temporarily, but many policy makers do not want to give away anything of their own, so that majority of the rural community especially women and children will not suffer. From the analysis of this assessment, one thing is unmistakably clear, that if trained TBAs supported as demand creation agents for maternal health care promotion at least temporarily through training, more women will benefits from their counseling and adopt positive health seeking behaviour. Emphasis has been on referrals and there is evidence that trained TBAs adhered to but at the point of service, the women were discouraged when healthcare providers demanded for fees. This singular action deterred some women from uptake of health facility services. Training and re-training of health care providers is required to correct the bad attitude to clients. Urban women are more likely to receive antenatal care services during pregnancy period than rural women. The probability of receiving antenatal care for urban women is higher than rural women due to availability of health facilities, transportation, easy access and economic empowerment.

Facility Delivery Service

The aim of providing safe delivery care is to protect the life and health of the mother and her child. An important component of efforts to reduce the health risk to mothers and children during delivery were to increase the proportion of babies delivered under the supervision of health professionals (see table 4). Proper medical attention under hygienic conditions during delivery can reduce the risk of complications and infections that may cause death or serious illness either to the mother, baby or both. Adequate utilization of postnatal care can also help reduce mortality and morbidity among mothers and their babies. Mothers' age at birth was found to be lower for older women (22.7 percent) than young women (27.3 percent). The proportion of women that had antenatal care visit in the most recent last birth was relatively higher (34.4 percent) than subsequent birth orders. Rural women (23.7 percent) are less likely than their urban counterparts (69.0 percent) to get antenatal care from health professionals and more likely to get no care at all.

Unadjusted Adjusted Odd Ratio for Facility Delivery

In table 5, the odds ratios for facility delivery shows that women who had between one and three home visits or four or more home visits from a trained TBA compared to no home visits at all have more chances of behaviour change and tend to seek health facility services. The unadjusted odds of having a facility delivery was higher for women receiving any number of home visits compared to women receiving no home visits, but again the result lost evidence of statistical significance after adjustment for being educated, living in an urban area, being Christian, or being married, except for those women who received at least four home visits (adjusted odds ratio 1.6 (95% CI 1.0-2.6, table 5). The chances of accessing and utilizing health facility services for women that were visited for at least four times by trained TBAs is twice higher than those women who were not visited at all. The significant is not much but with consistency in encouraging trained TBAs to put more efforts in community mobilization and a little push of women will encourage more of them to move from state of ignorance to knowledge on importance of skilled assisted delivery. Health programs should be designed in a way that will maximize integration opportunities that reduce barriers to health services, recognizing that decisions about service access are made at the household level and influenced by communities and trained TBAs by which the services are delivered. It will be a great advantage if family-centered approach to health is considered also because it would helps strengthens links between community and facility-based services. Through this family knowledge on importance of uptake of health facility services will be enhanced and more caregivers will positive attitude to the clients, hence, encourage prompt access and use of services that will reduce incidence of bad state of health before women getting to hospital. This in turn leads to increase uptake of health services and improvement in health outcome in Gombe State.

Postnatal Care Services

Postnatal care is another important care for mothers and newborn check-up; treatment of complications arising from delivery, especially for births that occurred at home and the newly delivered mother discharged within 6 hours after delivery at health facility. For home-based delivery, postnatal care enables detection of complications that may threaten the survival of the mother. In rural community of Gombe, 72.4 percent of births took place at home; as a result, postnatal care by skilled provider is low; hence, trained TBAs conducted home visits to encourage and accompany such women for uptake of postnatal care at health facility. Proportion of women who delivered in the last 12 months who were visited by a trained TBA within 48 hours of delivery increased from 9% in quarter 2, 2013 to 43% in quarter 8, 2014 (see table 6). There was a remarkable improvement in uptake of postnatal care among mothers between 2013 and 2014 partly due to effects of home visits. The data shows that younger women are more likely than older women who are experienced to seek both delivery and postnatal care services due to encouragement received from trained TBAs. Urban children are more likely to be born at health facility than rural children. Among the indicators analyzed, home visits, place of residence, age, women's education and religion were found to be the foremost predictors of uptake of health facility services in Gombe state. The results also show that women that were visited are more likely to seek maternal healthcare facility services than those women without home visit by the trained TBAs. The probability of seeking antenatal care services by the women visited is more likely to be higher than those women not visited at all. The odds of receiving antenatal care are 2.9 times higher for women that had between four or more home visits by trained

TBAs than those women who were not visited by trained TBAs. The results of this assessment are consistent with most of the literature reviewed in the developing countries (Ferndez, 1984; Wong et al., 1987; Elo, 1992).

SUMMARY, CONCLUSION AND RECOMMENDATION

Trained traditional birth attendants as maternal healthcare demand creation agents have contributed their quota to improvement of uptake of health facility services in Gombe State. They were able to break traditional, religious and beliefs barriers that have served as inhibitors to access and utilization of health facility services. Home visits promote more interaction between pregnant women, mothers and trained TBAs during which sensitization and mobilization of women to go for ANC will be communicated. Suffice to mention that some few trained TBAs under the pretense of imminent delivery still conduct home-based delivery. A close examination of this behavior revealed that amount MNHC project paid every month to trained TBAs as transport stipend N3000 (US $2) is considered too small for the enormous work they are doing in the community. To curb this behavior, health planner should also introduce effective performance-based financing incentive as well as introduction of socio-economic activities that trained TBAs can have access to for living. Encouraging trained TBAs to form associations, which will enable to access finance from corporate bodies or banks for business or farming in addition to what they will be getting from the of maternal demand creation with MNHC intervention. For trained TBAs to be optimal in day-to-day home visits where health education, sensitization and referrals will take place, Governments and other implementing partners should come up with various ways of encouraging them. Regular refresher courses, recruitment of more TBAs for training, and provision of kits will bring about the increase uptake of health facility services. For trained TBAs to be optimal in day-to-day home visits where health education, sensitization and referrals will take place, Governments and other implementing partners should come up with different strategies that will motivate, checkmate and ensure existence of good working relationship between healthcare providers and trained TBAs. Regular visits to see what TBAs are doing on the field are also part of motivation strategy and not necessarily only financial aspect alone that can do the magic. Regular refresher courses, recruitment of more TBAs for training, and provision of kits will bring about the increase uptake of health facility services. More trained TBAs as demand creation agents with motivation can bring home-based delivery to barest minimum within the span of 10 years from now if rigorously pursued.

Conclusion

This study reveals that trained traditional birth attendants through home visits are capable of breaking traditional and religious beliefs and practices that prevent women from going for ANC, delivery and postnatal care resulting in low utilization of maternal and neonatal healthcare services. Therefore, the researcher posits that with supportive supervision and mentorship for trained TBAs, early detection and referral of women with obstetric complications during home visits will increase utilization of health services. The study established a strong evidence of positive uptake of maternal health services and effectiveness of home visits strategy. Based on this, State Government is advised to adopt Society for Family Health strategy of integration of trained TBAs in mainstream of health system for increase access and utilization of maternal health services. Trained traditional birth attendants in maternal and neonatal health care community-driven intervention through their new roles were able to influence increase access and utilization of antenatal care attendance at the health facility as shown in table 4. The uptake of facility delivery

in Gombe State moved from 17.2% in 2008 to 27.7% in 2013, 30% in 2014 and 32% in 2015. Findings have shown a linear relationship between trained TBA's home visits and uptake of post-natal care services among women in Gombe State. This article has established that home visits interactions by trained TBAs had led to significant increase in uptake of maternal and newborns health services thereby reduces morbidity and death that could have occur if the services have not been received. Results of the continuous surveys revealed that those women with the odds ratios for facility delivery shows that women who had between one and three home visits or four or more home visits from a trained TBA compared to no home visits at all have more chances of behavior change and tend to seek health facility services. The chances of accessing and utilizing health facility services for women that were visited for at least four times by trained TBAs is twice higher than those women who were not visited at all. Trained TBAs in the state have the ability to document every service offered during home visit and referrals made compare to when they have not received any training on maternal health care services. Government should come up with a policy that data generated through MIS forms by trained TBAs be retrieved by LGA M&E officers, entered into DHIS for state-wide analysis for improvement of maternal health indices in the state. This study has established that the odds of receiving antenatal care are 2.9 times higher for women that had between four or more home visits by trained TBAs than those women who were not visited by trained TBAs.

Recommendations

For effective coverage of the state more TBAs need to be identified and recruited for promotion of maternal health services because the current trained TBAs (1,655) are grossly inadequate for the coverage of over 5,191 communities in Gombe State. The task of covering 5,191 communities in the State requires about 3,310 trained TBAs or community health volunteers; hence, government is advised to complement the efforts of SFH by providing counter funding of the remaining TBAs. Apart from trained TBAs as demand creation agents (IPC), health promoters should support interpersonal communication (IPC) with radio jingles that will be running for at least a year. The jingle messages should be on health seeking behavior; antenatal care, facility delivery and essential newborn care practices. Mother in laws forum can be established and assigned roles to play in implementing maternal and newborn healthcare in the state, since their involvement will ease the work of trained TBAs in thee community. Data generation is very critical in knowing what is working and what's not. Hence, Government should come up with a policy that data generated through MIS forms by trained TBAs be retrieved on monthly basis by LGA M&E officers, entered into DHIS for state-wide analysis for improvement of maternal health indices. Performance-based incentives should be introduced to encourage trained traditional birth attendant and assist them to set up socio-economic activities where they can generate income for their upkeep.

Suggestions for Further Studies

Further research is needed to determine the effect of trained TBAs efforts as it affects health outcome in reduction in maternal and neonatal mortality. Gombe state government can conduct population household survey to dig deeper on how to optimally utilize MNHC trained TBAs to provide support to health workers.

Appendix

Tables are presented below.

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Table 2: Number of women interviewed at each continuous survey quarter that had a live birth in the last 12 month period prior to interview, and coverage of antenatal Care and facility delivery

Year/Indicator	Q2 Apr-Jun 2013	Q3 Jul-Sep 2013	Q4 Oct-Dec 2013	Q5 Jan-Mar 2014	Q6 Apr-Jun 2014	Q7 Jul-Sep 2014	Q8 Oct-Dec 2014	Total
Number women with birth in last 12 months identified during survey sampling	841	1118	1205	940	1178	1144	821	7247
Number women successfully interviewed	840	1115	1204	938	1178	1143	821	7239
Number women with a newborn with birthday 0-11 months prior to interview during data cleaning	604	1022	1154	902	1103	1097	794	6676
At least 1 home visit by trained volunteer during pregnancy								
n	36	176	256	254	453	483	344	2002
% (95% confidence interval)	6 (4-9)	17(13-22)	22 (17-28)	28 (22-35)	41 (35-47)	44 (38-50)	43 (35-52)	30 (28-33)
At least 4 home visits by trained volunteer during pregnancy								
n	0	37	54	25	49	78	57	300
% (95% confidence interval)		4 (2-6)	5 (3-7)	3 (2-5)	4 (3-6)	7 (5-10)	7 (5-11)	4 (4-5)
At least 1 antenatal care visit to a health facility								
n	511	870	992	750	968	895	703	5689
% (95% confidence interval)	85 (80-88)	85 (80-89)	86 (81-90)	83 (78-88)	88 (83-91)	82 (74-87)	89 (84-92)	85 (83-87)

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At least 4 antenatal care visits to a health facility								
n	294	500	589	418	578	510	433	3322
% (95% confidence interval)	49 (43-55)	49 (44-53)	51 (46-56)	46 (41-52)	52 (48-57)	46 (41-52)	55 (49-60)	50 (48-52)
Health facility delivery								
n	193	384	413	335	523	437	390	2675
% (95% confidence interval)	32 (26-38)	38 (33-42)	36 (31-41)	37 (32-43)	47 (41-54)	40 (34-46)	49 (43-56)	40 (38-42)

Source: Field Survey, 2014

Table 4 Coverage of at least one antenatal care contact in a health facility amongst women who had a live birth I the 12 months preceding survey, disaggregated by women who had at least 1 home visit from a community health volunteer and those who had no home visit.

Year/Indicators	Q2 Apr-Jun 2013	Q3 Jul-Sep 2013	Q4 Oct-Dec 2013	Q5 Jan-Mar 2014	Q6 Apr-Jun 2014	Q7 Jul-Sep 2014	Q8 Oct-Dec 2014	Total
Total Number women with no home visit by community health volunteer	**568**	**846**	**898**	**648**	**650**	**614**	**450**	**4674**
Women who had no home visit by a TBAs but who:								
Had at least 4 antenatal visits in a facility n	270	388	421	263	302	226	196	2066
% (95% CI)	48 (41-54)	46 (41-51)	47 (41-53)	41 (35-47)	46 (41-52)	37 (30-44)	44 (37-50)	44 (42-47)
Delivered in a health facility n	179	307	297	220	254	185	172	1614
% (95% CI)	32 (26-38)	36 (31-42)	33 (28-39)	34 (28-41)	39 (32-46)	30 (24-37)	38 (31-46)	35 (32-37)
Total Number women with at least								

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one volunteer home visit	**36**	**176**	**256**	**254**	**453**	**483**	**344**	**2002**
Women who had at least one home visit by a community health volunteer who also:								
Had at least 4 antenatal visits in a facility n % (95% CI)	24 67 (46-83)	112 64 (56-71)	168 66 (58-73)	155 61 (52-69)	276 61 (54-67)	284 59 (52-66)	237 69 (62-75)	1256 63 (60-66)
Delivered in a health facility n % (95% CI)	14 39(26-53)	77 44(35-53)	116 45(36-55)	115 45 (38-53)	269 59 (53-66)	252 52 (45-59)	218 63 (56-71)	1061 53 (50-56)
Total Number women with four or more volunteer home visits	**0**	**37**	**54**	**25**	**49**	**78**	**57**	**300**
Women who had four or more home visits by a community health volunteer who also:								
Had at least 4 antenatal visits in a facility n % (95% CI)	0	28 76 (55-89)	43 80 (66-89)	20 80 (59-92)	37 76 (58-87)	58 74 (62-84)	47 82 (71-90)	233 78 (72-82)
Delivered in a health facility n % (95% CI)	0	21 57 (36-76)	30 56 (38-72)	13 52 (32-72)	34 69 (57-80)	46 59 (46-71)	40 70 (57-81)	184 61 (55-68)

Source: Field Survey, 2014

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