International Journal of TROPICAL DISEASE & Health
9(2): 1-8, 2015, Article no.IJTDH.18474
ISSN: 2278–1005

SCIENCEDOMAIN *international*
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Expanding Access to Maternal Health Services by the Use of Traditional Birth Attendants: Experiences of the Sunni Hospital Group, Maiduguri, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author AGM did the study design and wrote the protocol. Authors AGM and SAU did the statistical analysis and literature searches while analyses of study was by authors BI and SAU. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/IJTDH/2015/18474
Editor(s):
(1) Giuseppe Murdaca, Clinical Immunology Unit, Department of Internal Medicine, University of Genoa, Italy.
Reviewers:
(1) Anonymous, Asia Pacific University of Technology and Innovation, Malaysia.
(2) Anonymous, Taipei Medical University, Taiwan.
Complete Peer review History: http://www.sciencedomain.org/review-history.php?iid=1203&id=19&aid=9478

Original Research Article

Received 24th April 2015
Accepted 15th May 2015
Published 28th May 2015

ABSTRACT

Aim: We intend to ascertain the experience of Sunni Hospital Maiduguri on the use of TBAs in enhancing Maternal Health Care Services.
Study Design: It was a retrospective observational survey of a community health project.
Place and Duration of Study: Maiduguri, Borno State Northeastern Nigeria between January 2001 and December 2007.
Methodology: Post-intervention survey of a community health intervention that targeted Muslim underserved semi-urban women.
Results: One thousand seven hundred and seventy eight (1,778) women were referred for life-

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saving interventions. More than 80% of the referrals were due to maternal and fetal complications identified by the TBAs in their respective communities. Six hundred and ninety one (691) deliveries were conducted using clean delivery kits. Their counseling and services consistently enhanced contraceptive uptake seen by generation of over 2,000 CYPs.

Conclusion: TBAs play a significant role in expanding maternal and child health services in our communities. And TBAs are likely to continue to be key resource for improving maternal and child health. Therefore it is necessary to integrate these community workers in the health system.

Keywords: Maternal health; traditional birth attendants; experiences; Maiduguri Nigeria.

1. INTRODUCTION

According to World Health Organization (WHO), approximately 800 women die daily from preventable causes related to pregnancy and childbirth. Almost all these deaths occur in developing nations [1]. The latest estimates from the WHO indicate that each year about 3.7 million children die within the first 28days and close to 9.7 million children die before their fifth birthday [2].

Nigeria constitute only 2% of the world population but contribute to 10% of the world's maternal mortality [3]. The Nigeria Demographic and Health Survey (NDHS) 2013 indicated that maternal mortality has increase from 2008 to 2013 figures [4]. The high maternal mortality in Nigeria has a wide variation from region to region. The northeastern region is one of those with highest maternal mortality. The Nigerian census of 2006 indicated that the region had a population of 18, 971,965 spread over 272,395 km^2 of land area [5]. In this region, early marriage is the norm and polygamy is widespread. According to the NDHS 2013, the fertility rate in the region is 6.3 children per woman; current use of any modern family planning method is only 2.7 percent. That is to say the northeastern Nigeria has very high maternal mortality and high fertility rates. The high mortality is not unexpected as more than 50% of pregnant mothers do not attend antenatal care services during their pregnancy and nearly 80% of deliveries were at home [4].

To address such an ugly health indicators, some people are with the opinion that all hands must be on deck to ensure sanity in our communities. They believe that use of Traditional Birth Attendants (TBAs) is one of the many options proposed to achieve the desired goal of better maternal and child health. And it was also estimated that 26% of deliveries in this region are conducted by the Traditional Birth Attendants [4].

"A traditional Birth Attendant (TBA) is a person who assists the mother during childbirth and initially acquired her skills by delivering babies herself or through apprenticeship to other traditional birth attendants. A family TBA is a TBA who has been designated by an extended family to attend births in the family. A trained TBA is a TBA or a family member who has received a short course of training through the modern health care sector to upgrade her skills" [6].

The conception of teaching TBAs to advance maternal and perinatal health in developing nations originated over 100 years ago and was promoted by donor agencies including WHO and the United Nations. By 1997, leading policy makers decided to change priorities on the provision of "Skilled Birth Attendants" (SBA). SBA are defined as accredited health professional – such as a midwife, doctor or nurse –who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification management and referral of complications in women and newborns" [7]. Thus the TBAs do not meet up the criteria of a skilled birth attendant. It has been argued that unlike deliveries attended by TBAs, indications from several studies have revealed reduced maternal and perinatal morbidity and mortality when pregnant women have a Skilled Birth Attendant present at birth [8].

In recent years there has been increasing debate on the usefulness of TBAs [9]. But TBAs continued attendance at home deliveries suggest their influence on maternal and child health outcomes [10] Also, it is known facts that estimated 60 to 80% of all deliveries in the developing countries occur outside modern health care facilities, with a significant proportion of this attended to by TBAs[3]. Data from the World Health Organization [11] show, that worldwide 34% of births, i.e. 45 million births,

occur at home assisted by a TBA or family member or nobody at all. A recent secondary analysis of Demographic and Health Survey data on maternal deliveries in 48 developing countries indicated that 33 to 44% of home deliveries were conducted by TBAs [12]. The important roles played by TBAs are showed in many studies. It was discovered that they reduced perinatal and neonatal mortality [13], reduced postpartum complications and increase referral to health facilities [14].

Importantly, Pagel and colleagues argued that the dispute on facility based versus community based care for improving maternal and child health bring about a bogus dichotomy, and that the ‘‘correct balance of approaches crucially depends on the local context’’ [15]. A superior comprehension of the local perspective would greatly assist national policy makers to make appropriate health planning for maternal and child health.

In order to facilitate this knowledge gap, couple with the overwhelming presence of the untrained Traditional Birth Attendants, we set out to examine this ‘‘local context’’ by seeking fund from Pathfinder International to execute a project in our locality. Therefore, this study is a post intervention survey of the role of TBAs in enhancing maternal and child health in northeastern Nigeria.

2. MATERIALS AND METHODS

2.1 Study Site

Sunni Hospital Maiduguri is an Islamic faith-based non-governmental, not-for-profit making health facility based in Maiduguri, Borno state Nigeria. The twenty four (24) bed-capacity hospital was established in 1994 by the Islamic Medical Association of Nigeria. The Hospital has the mission of providing accessible, affordable and acceptable standard health care services to the community especially to the less privileged. The vision of the Hospital is a society with minimal mortality and morbidity from preventable diseases especially reproductive health problems and a community capable of affording the cost of management of common illnesses and ill-health conditions. Even though Sunni Hospital is a secondary health facility, no family planning service was offered in the hospital prior to 2001, this is because of the religious nature of the hospital and the wrong believe that Islam is against family planning.

Borno State is one of the six states in north-eastern Nigeria. Maiduguri is the capital city. The state covers a land mass area of about 69,436 sq km. The state occupies a large part of the Chad Basin and the population of the state stands at 5, 195, 581 [5]. The vegetation is a mixture of Sudan Savannah and Sahel savanna The state is dominated by the Kanuris (mostly Muslims) who have dominated the area for over a millennium, but also has the Buras (Christian/Muslim), Baburs, Marghis among many other Nigerian ethnicities, Borno inhabitants engage mainly in agriculture and trading, The NDHS 2013 indicated that the total fertility rate in Borno is 6.3children per woman as against 5.5 the national average. Percent of currently married women age 15-49 who were using any method of contraception was 3% compare to 15% the national average. Percent of children age 12-23 months fully vaccinated was 14% as against 25% the national average [4].

2.2 The Project

First grant received from Pathfinder International in the year 2001 was the starting point. The grant was preordained to enhance reproductive health uptake among Muslim communities in four local government areas of Borno state. These Local Government Areas were Maiduguri metropolitan, Jere, Mafa and Konduga. Ten (10) electoral ward communities from each of the Local Government Areas were selected based on their population densities, non-availability of closed-by public health facility and their low wealth quintiles.

A baseline assessment was conducted and the summary of the findings were poor knowledge and practice of family planning among the communities, poor patronage to health facilities for antenatal, natal and postnatal care services, high maternal and childhood mortalities. The findings were reflection of the findings in NDHS 2008 and 2013 [4].

Therefore, a meeting of Sunni Hospital staffs and Muslim scholars/leaders was convened with the aim of carrying the Muslim communities along in planning and executing the project. Over 60 participants attended the meeting which lasted for six hours; and included Muslim scholars drawn from nine (9) most popular Islamiyya Schools and Mosques from the participating communities. Consensuses were reached and project implementation work plan developed.

The Islamiyya schools were given criteria to choose the traditional birth attendants from their localities. And the project management staff ensured strict compliance to the criteria for the selection. The TBAs were given training for two weeks and another additional two weeks in Sunni Hospital for practical sessions. At the end of the training, a TBA kit and a certificate were issued to each of the TBAs.

One hundred (100) TBAs were trained but sixty (60) were active in attending monthly meetings and submitted data regularly. The active 60 were supervised by trained and well-experienced midwives; who were also trainers of TBAs.

The TBAs visit their respective neighborhood houses and performed the following functions:

1. Counsel women on importance of hygiene and environmental sanitation.
2. Counsel women on child spacing and provide non-prescriptive contraceptive commodities especially foaming tablets. Also refer those needing other methods to either Sunni or other public health centers.
3. Counsel pregnant women on the need for ANC and delivery in the hospital; also identified those with risk factors for referral to a health institution.
4. Conduct “simple” deliveries; especially those in advanced stage of labour.
5. Provide prophylactic drugs such as Iron, folic acid, multivite and fansidar to pregnant women.
6. Counsel women on exclusive breast feeding and immunization for babies.

An illustrative Mother Card was developed and distributed to the trainees for identification and referral of high risk pregnancies. The illustrative nature of this card helped overcome the lack of formal education among the vast majority of the TBAs. The TBAs were given non-prescriptive family planning commodities to sell and the proceeds went to them. Pregnancy/labour cases with danger signs were referred to Sunni Hospital or any public health center by the TBAs. To encourage the TBAs, any referral accompanied by the TBAs to Sunni Hospital were paid N200 ($1.5) transportation fee. We organized meetings of the TBAs in Sunni hospital monthly to collect data, analyze their performances and provide solutions to their problems/challenges. Both the TBA coordinator and the TBAs were paid transport allowances for every meeting/refresher up-date. A qualified pharmacist among the project staff was assigned to take stalk of all the drugs given by the TBAs, kept the records and solve issues of all complains arising from the drug used.

2.3 Data Collection and Analysis

Pre-formed data collection forms were developed by Pathfinder International. All data generated within Sunni Hospital and those from the TBAs were entered into the forms. The TBA records were collected each month during the TBAs monthly meetings. The TBA coordinator entered the data into the project computer after each meeting. Every three months the Project Director and the supervising Pharmacist calculated the couple-year protection (CYP) for each method and also computes the total CYP. Couple-Year Protection (CYP) is the estimated protection provided by family planning (FP) services during a one-year period, based upon the volume of all contraceptives sold or distributed free of charge to clients during that period. CYP is calculated by multiplying the quantity of each method distributed to clients by a conversion factor, to yield an estimate of the duration of contraceptive protection provided per unit of that method [16]. The CYPs for each method were then summed up over all methods to obtain a total CYP figure.

Consents for the intervention and the study were obtained from Borno State Ministry of Health and for confidentiality all records were exclusively stored in Sunni Hospital. The records were accessible to the Project Director, the Hospital Secretary and the Matron –in- charge only. Information on the project was given to Pathfinder International as quarterly reports and clients or patients identity were not given to the Pathfinder International.

3. RESULTS

About 1,446 (81.3%) referrals were due to maternal or fetal complications**.** And 979 (55.1%) of the referrals were made due to risk factors identified by the TBAs during the antenatal period (Table 2).

Family planning counseling and services were offered seven days a week; with most of the commodities available. In the year 2001, CYP generated was less than 300; however in 2007 CYP rose to over 2,000.

This has been reflected by the increase in contraceptive uptake by clients in the communities (Fig. 1).

4. DISCUSSION

The study pointed out that the TBAs play a significant role in the maternal and child health care delivery system. Within the period under review, 1,778 women were referred for life-saving intervention (an average of 254 annually from the four Local Government Areas). More than 80% of the referrals were due to maternal and fetal complications identified by the TBAs in their respective communities. Their counseling and services consistently enhanced contraceptive uptake in Sunni Hospital. But we must emphasize that if not for the attrition of the TBAs during the project, much success could have been recorded. The attrition is manifested by the drop in the TBA activities over time as seen on Table 1. It is apparent that given the reality in much of Northern Nigeria (and of course many developing nations), TBAs are likely to continue to be key resource for improving maternal and child health.

Table 1. Performances of the TBAs at Sunni Hospital 2001 - 2007

Year	Home visits	Deliveries	Referrals
2001	587	127	382
2002	508	113	408
2003	355	67	217
2004	352	102	194
2005	374	98	176
2006	315	95	206
2007	342	89	195
Total	2,833	691	1,778

Table 2. Reasons for referrals

Year	Pregnancy	Labour	Puerperium	Baby	Contraception	Total
	Complications					
2001	202	40	76	11	53	382
2002	245	39	60	24	40	408
2003	118	20	38	10	31	217
2004	103	10	27	09	45	194
2005	94	10	09	10	53	176
2006	110	23	08	12	53	206
2007	107	11	13	07	57	195
Total	979	153	231	83	332	1,778

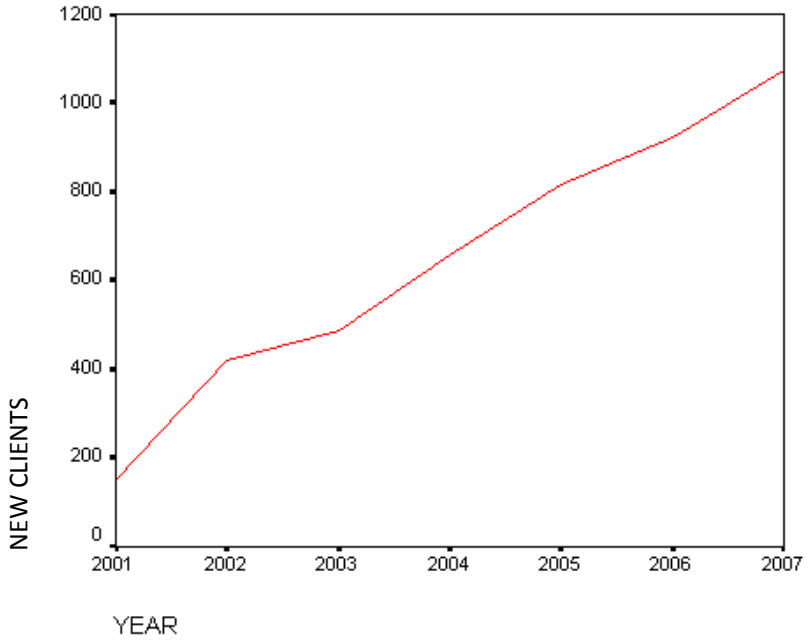

Fig. 1. Trend of family planning uptake at Sunni Hospital 2001 – 2007

The Nigerian Demographic and Health Survey of 2013 indicated that, in Borno state more than 58% of pregnant women do not attend Antenatal Care Services, 82.6% deliver at home and 77% of women delivered by TBAs, other relations or even no one around [3]. This indicated the relevance of the TBAs in our communities. In this study, 55.1% of the referrals were made due to risk factors identified by the TBAs during the antenatal period. Many women could have died if not because of the TBAs' early recognition of their signs and symptoms of complications and timely referring them or even accompanying them to the hospital.

This TBAs impact on referral system corroborated with a cluster randomized controlled trials conducted in Pakistan [17,18] However, Harrison in earlier studies believe that TBAs have little or no place in modern obstetric practice. According to him "they are too old and they are mainly responsible for the unbooked emergencies that have a high death rate" in Zaria, Nigeria [19].

But a recent study by Thidar Pyone et al. [20] indicated that TBAs escort or referred mothers to a near health facility for delivery, prenatal care, or postnatal care. And interestingly, they found both TBAs and mothers accepting this responsibility, resulting in improved patronage for deliveries at health facilities [20]. Shiekh at al 2014 opined that to increase the availability and accessibility of maternal and child healthcare services, training of TBAs and strengthening the partnership between community midwives (CMWs) and TBAs are accepted globally. However, they pointed out that the role of the TBAs cannot be effective in a weak primary healthcare system and in an unplanned referral mechanism [21]. Likewise, studies in Brazil, Guatemala and Indonesia have revealed that TBAs can recognize early signs of complications during antenatal period, labor and pueperium, and effectively refer mothers for intervention in health facilities by skilled health workers [22].

Provision of TBA kits and the training cannot be overemphasized in our communities as the Nigerian Demographic and Health Survey of 2013 indicated that among the non-institutional deliveries in Borno State, only 12% are conducted with clean instruments [3]. The role of clean delivery kits in preventing infection is demonstrated by the work of Vyagusa et al. [23]. In our experience, 691 deliveries were at least conducted with cleaned delivery kits; thus reducing the risks of maternal and neonatal infections.

Three hundred and thirty two (18.7%) of the TBA referrals were for contraceptives other than non-prescriptive. TBAs are also known to improve contraceptive uptake in other studies [20-22]. The TBAs home visits provided an avenue for favorable atmosphere, client-centered and highly confidential discussions between the more-friendly and less busy TBAs and the less enduring, illiterate and poverty-stricken clients. We also notice that the TBAs are excellent means of counseling the womenfolk, dispensing non-prescriptive contraceptive commodities (and haematinics) and referral for prescriptive contraceptive commodities. Even though our TBAs use non-prescriptive contraceptives and our clinic used, in addition to the non-prescriptive methods, injectables combined oral contraceptive pills, the generation of over 2,000 CYP in 2007 was remarkable, especially when we consider that our communities have phobia on the use of contraceptives.

CYP is the estimated protection provided by contraceptive methods during a one-year period and reflected distribution of the commodities. The CYP calculation provides an immediate indication of the volume of program activity and CYP can also allow programs to compare the contraceptive coverage provided by different family planning methods. In the 2009 Adding It Up report [24], estimated the ratio of unintended pregnancies averted per modern contraceptive user in developing countries using CYP. A ratio 0.288 was used for estimating unintended pregnancies averted per CYP. Using the ratio, we can see that in 2007 an estimated 576 (2,000 x 0.288) unintended pregnancies were averted in the communities.

Two issues are the main factors responsible for Muslims rejection of family planning; the issue of population control by the "west" and the obedience to the Islamic injunction of "do no harm to your body". To address these issues we had to be innovative and use religious and cultural realities to advocate for the contraceptives use. In our advocacy and community sensitization activities, we explained to the people that what is required is ***"child spacing"*** of at least three years; two for breastfeeding (which is accepted in Islam) and another one year to carry the next pregnancy to delivery. We also emphasized that because of the health of the mother and her baby, it may be

necessary to space the childbirth and sometimes even to stop having children completely. ***'Kunikanchi'*** is a term denoting yearly pregnancy by a woman, and this practice is detested by our people. We recommended the use of modern contraceptive methods to prevent ***'kunikanchi'***. Fortunately many confessed the failures of traditional/natural methods.

For breastfeeding mothers, modern contraceptive methods are good options to prevent pregnancy and the babies to get "good breast milk" until their babies reach two years. We emphasized that modern contraceptive methods are much safer than the termination of pregnancy, which is resorted to by women who have unwanted pregnancy. Withdrawal method of contraception is acceptable to Muslims based on the acceptance of the Prophet (PBUH) to his companions to practice it provided there is the consent of the husband and the wife. Since the method has been accepted by the Prophet (PBUH), then other methods can be applied for the same purpose(s) we argued.

The issue of condom is still a major problem in our community as many believe it to be an agent of increasing promiscuity or means of spreading HIV infection. However, people are beginning to use it among HIV positive couples.

In view of the enormous roles the TBAs play in our communities, the confidence given to the TBAs and the dire scarcity of skilled health care providers, we have little option than to integrate the TBAs in our health system. In fact the National Reproductive Health Policy and Strategy to achieve quality reproductive and sexual health for all Nigerians (NRHPS) 2001, assigned the responsibility of training, organizing and maintaining linkages between Traditional Birth Attendants and midwives to the Local Government Councils [25]. Unfortunately, our Primary Health Care System is very murky. However, training/retraining, close monitoring and evaluation, favorable working environment and incentives to the TBAs are key factors in getting better outcome. If donor agencies are getting impressive results working with TBAs, Local Government Councils must leave up to their expectations.

5. CONCLUSION

This post-intervention survey indicated that TBAs are key resource for improving maternal and child health in developing nations like ours. With training, re-training and supervision, the TBAs can reduce the risk of maternal and child mortalities and morbidities, increase contraceptive uptake and most importantly, increase health facility patronage; especially in communities that have poor maternal and child health indicators. Therefore, their integration into the health system of developing nations is not only needed but imperative.

ETHICAL APPROVAL

Consents for the intervention and the study were obtained from Borno state ministry of health and for confidentiality all records were exclusively stored in Sunni hospital. The records were accessible to the project director, the hospital secretary and the matron –in- charge only.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sciencedomain.org/review-history.php?iid=1203&id=19&aid=9478