BMJ Open

Emerging role of traditional birth attendants in mountainous terrain of Chitral District, Pakistan

Journal:	*BMJ Open*
Manuscript ID:	bmjopen-2014-006238
Article Type:	Research
Date Submitted by the Author:	27-Jul-2014
Complete List of Authors:	Shaikh, Babar; Aga Khan Foundation, Pakistan, Health & Built Environment Khan, Sharifullah; Aga Khan Foundation, Health & Built Environment Maab, Ayesha; Aga Khan Foundation, Health & Built Environment Amjad, Sohail; Aga Khan Foundation, Health & Built Environment
Primary Subject Heading:	Health services research
Secondary Subject Heading:	Health policy, Obstetrics and gynaecology, Public health, Qualitative research, Reproductive medicine
Keywords:	Health policy < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Organisation of health services < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Public health < INFECTIOUS DISEASES

Emerging role of traditional birth attendants in mountainous terrain of Chitral District, Pakistan

Babar Tasneem Shaikh, PhD, FRCP Edin - Aga Khan Foundation

Sharifullah Khan, MPH - Aga Khan Foundation

Ayesha Maab, MSc - Aga Khan Foundation

Sohail Amjad, MPH - Aga Khan Foundation

Running title: Role of traditional birth attendants

Corresponding author

Dr Babar Tasneem Shaikh

Aga Khan Foundation (Pakistan)

Level Nine, Serena Business Complex

Khayaban-e-Suharwardy, Islamabad

t: +92 51 111-253-254

f: +92 51 2072552

e: shaikh.babar@gmail.com

Abstract:

Introduction: Shortage of health workforce is the major impediment in the achievement of health related MDGs 4 & 5. It is important to review strategies to maximize strengths of traditional birth attendants (TBAs) and skilled birth attendants in resource limited settings. However, role of TBAs in the provision of maternal, newborn and child health (MNCH) care has been a subject of discussion. This research endeavors to identify the role of TBAs in supporting the MNCH care, mainstreaming with the formal health system and their livelihood prospects.

Methods: A qualitative exploratory study was conducted in predominantly rural district Chitral, Pakistan. About seven Key informant interviews (KIIs) with health managers, and four focus group discussions (FGDs) were conducted with community midwives (CMWs), TBAs and member of Village Health Committee (VHC).

Results: The study identified that community has trust and faith in TBAs and her services. TBAs have had a pivotal role in health promotion activities such as breast feeding promotion and vaccination. TBAs conduct deliveries, and refer high risk cases to formal health system. With regard to CMW introduction in system, TBAs are positive and welcome this addition. Yet, their livelihood has suffered after CMWs deployment. Monetary incentives to them in recognition of referrals to CMWs could be one solution. There ought to be a meaningful interaction between the two cadres at the village level. VHC is an active forum for strengthening coordination between them and to ensure an alternate and permanent livelihood support system for the TBAs.

Conclusion: TBAs assuredly support the need for continuum of care for pregnant women, lactating mothers and children under five. The district health authorities must figure out ways to foster a healthy interface vis-à-vis roles and responsibilities of TBAs and CMWs.

Keywords: Maternal Newborn & Child Health, Traditional birth attendant, Community midwife, Qualitative research, Pakistan.

Strengths & Limitations of the study

Use of qualitative methods provided rich insight into women's interpretations and decision-making regarding health care seeking during and after pregnancy in a relatively conservative setting of Pakistan.

The findings represent a specific sample size, study site and socio-cultural milieu and therefore may not be generalized for the entire province or country.

Introduction

Despite all advances toward MDGs 4 & 5, every year 6.6 million children die before five years of age (44% as newborns) and 289,000 maternal deaths occur, mostly from preventable causes (1). This state of affairs has raised serious global concern over the years in developing countries to ensure availability and accessibility of human resources for ensuring continuum of care for expecting mothers. Uniform availability and distribution of skilled birth attendants is critical to consider while looking at health service utilization trends (2). The Millennium Declaration in 2000 signed by 189 nations, recognized proportion of births assisted by trained birth as an important indicator to track maternal and child survival indicators (3,4). To increase the availability and accessibility of maternal and child health care services, training of TBAs and strengthening the partnership between community midwives (CMWs) and TBAs is widely acknowledged worldwide (5,6). Nonetheless, role of the TBAs cannot be effective in a weak primary health care system and in an unplanned referral mechanism (7).

In order to attain MDG-5, isolated interventions are not able to reduce maternal mortality sufficiently. It is important to review strategies to maximize strengths of TBAs as well and skilled birth attendants. Evidence suggests that skilled birth attendance has increased in regions where TBAs are integrated with the formal health system (8). However, integration of TBAs with the formal health system may require capacity development and supervision of TBAs, collaboration skills for health workers, involvement of TBAs at health facilities and, improved capacity on communication and referral systems. With this approach, TBAs may positively contribute to maternal and child health outcomes (9). Trainings of the TBAs not only enhance their knowledge and skills on obstetric care and referral mechanism, but also lead to greater community acceptance and a greater consumer satisfaction. They can play a vital role in birth preparedness and identification of danger signs (10). Training of TBAs has shown impact on perinatal and neonatal deaths which can be significantly reduced (11). Moreover, TBAs have been a critical contributor in providing skilled MNCH care in rural population of developing countries due to inadequate numbers of human resource for service delivery (12). Therefore, role of trained TBAs in healthcare provision cannot be undermined. Developing countries have used TBAs as a key strategy to improve maternal and child health care (13). They have been effective in improving referral mechanism and links

with the formal health care system (14). Literature review has suggested that a TBA is preferred over a midwife who is young, unmarried girl and without children. This trend is more common in countries where fresh CMWs are recently deployed such as Pakistan (15,16). Another reason for the community acceptance of TBAs is that they are affordable option than professional midwives and she often accepts payment in kind (17). Moreover, TBAs are always happy to make house visits, warranting mother's privacy.

Pakistan is among the few countries in South Asia that continues to have dismal maternal and child health indicators. In Pakistan, Maternal Mortality Ratios (MMR) is high, ranging from 240 to 700 per 100,000 live births. The top three causes of maternal death are postpartum hemorrhage, eclampsia and sepsis. Approximately two-thirds of all births (61%) take place at home due to limited access to health facilities. Home based deliveries are usually attended by the TBA and now newly deployed community midwives in some rural parts of the country (18). While some maternity care indicators appear to have improved over the last two decades, women's access to prenatal health care continues to be low in Pakistan18.

Realizing the need for community health work force, Government of Pakistan launched the national MNCH program in 2006 to help the rural women deliver safely (19). Although the program has been successful in countries such as Malaysia and Indonesia, challenges faced by the CMW program of Pakistan are multifaceted. These challenges are related to acceptance by community, competition with other service providers, weak referral system, inadequate skill set and lack of community involvement (20).

The intervention

To address health system constraints, Chitral Child Survival Program (CCSP) of Aga Khan Foundation Pakistan (AKF-P) deployed CMWs, supported community financing scheme, improved referral linkages and implemented a behavior change communication campaign from 2008-2014. CCSP was implemented in close partnership of Department of Health, Khyber Pakhtunkhwa, Aga Khan Health Services (AKHSP),

Pakistan and Aga Khan Rural Support Program (AKRSP). The CCSP interventions, especially the role of community based saving groups, village health committees (VHCs) and community based emergency maternal referral mechanism to achieve project results showed that CCSP had attempted to engage the TBAs proactively. The project empowered TBAs on Birth Preparedness and Complications Readiness (BPCR) plans and integrated referral mechanisms. Involvement of TBAs in the project was meaningful to generate the community acceptability for young CMWs, identification of high risk cases, and referrals of complications to CMW and transporting pregnant woman to health facility in time.

This research endeavored to identify the role of TBAs in supporting the MNCH care, partnership mechanism with the formal health system and also explored livelihood options for TBAs.

Methodology

a) Study site

The study was conducted in Chitral district, north western border of Pakistan, from March-April 2014. The population of the intervention area is 200,000, about 57% of the total population of the district and residing in 243 villages. The government department of health and Aga Khan Health Services Pakistan (AKHSP) are the two primary formal sector healthcare providers in Chitral. The public-sector healthcare infrastructure in the district includes 22 civil dispensaries, 21 basic health units; three tehsil headquarters and one district headquarter hospital (21). AKHSP operates its own 32 health facilities in Chitral which include 17 health centers, eight family health centers, four dispensaries and three secondary care facilities, covering 60% of Chitral district. The MMR in the province is 275/100,000 live births; whereas under five mortality is 75/1000 live births (18). Despite the presence of skilled birth attendants under MNCH program, large proportion of the deliveries is still attended by TBAs in Chitral district.

b) Study Design and data collection

The project documents and other relevant studies were thoroughly reviewed and the collated information guided to design the qualitative data collection instruments. A qualitative exploratory

study entailed seven KIIs and four FGDs conducted with different study participants. Field guides included open ended questions, covering topics such as role of TBAs in supporting MNCH care and CCSP project activities, community experience with TBAs, working relationships and linkages with the formal health system and sustainability/livelihood of TBAs. To ensure quality control, information collected through note-taking was cross-checked for completeness and consistency before and during data processing by the research team.

c) Study participants

Community based health workers i.e. CMWs and TBAs; members of VHC and Community Based Saving Group (CBSG) were included in the discussion. The participants were encouraged by the moderator (PI) to interact with each other and comment on experiences and perceptions regarding role of TBAs, partnership with formal health system, and livelihood of TBAs. KIIs were conducted with two government health managers, two AKF-P managers, and three AKHSP managers. All the FGDs were conducted in the community; whereas KIIs were conducted in the respective offices of health managers. Table-1 presents the detail of the methods employed for the study.

Table-1: Detail of methods employed in qualitative study

Cadre	Method	Total number of respondents	Area
CMWs	FGD	10	Mori Lshat, Barini, Awi, Miragarm, Sore Laspoor, Raman, Terich Payeen, Lot Owir Bala, Lot Owir Payeen, Gohkir, Parsan, Owir Lasht Arkari, Besti Arkari, Khuz, Phashk
TBAs	FGD	5	Lower Porth, Brock Kalaway, Porth Bala, Raman, Brock Baraman Deh
VHC	FGD	8	Morder
CBSG	FGD	10	Morder
Health managers (AKHSP, AKF-P & DHD)	7 KIIs	07	Chitral city

Purposive sampling technique was adopted, inviting the participation of those CMWs, and TBAs who had been serving actively in their local communities for the last two years. These health workers were identified with the help of health managers of AKHSP and government. Likewise, only those members of

VHC were invited for FGD, who had been active for the last two years. Each participant of the FGD and KII was given the verbal information about the study by the research team and was given a consent form prior to participation.

d) Data analysis

A qualitative content analysis was applied to analyze the information manually from all the FGDs and KIIs. A stepwise approach was adopted for the content analysis. The analysis aimed at finding manifest and latent meaning of data. The transcribed data was initially read several times by the principal researcher in order to find the sense of the whole. At first stage the segmentation of information was done i.e. segments and sub-segments of information were organized. Subsequently the significant information was extracted which was related to research questions. At second stage the common views of the respondents were put together at one place. At third stage, data was coded (different responses highlighted) and then these codes were grouped into categories and abstracted into sub-themes and a main theme. At final stage, the meanings of themes/descriptions were interpreted by keeping in view and considering the cultural context of the participants.

Results

The main theme which came out was the “emerging role of TBAs to improve Maternal, Newborn and Child Health”. After content analysis, following sub-themes were identified:

1. Community experience with CMWs and TBAs
2. View of participants on utilization of TBAs in formal health system
3. Role of TBAs in supporting obstetric care
4. Linkages and coordination among TBAs and CMWs
5. Livelihood of TBAs

Table-2: Matrix of qualitative research analysis

Nodes	Sub-nodes
Community experience with CMWs and TBAs	- Availability of CMWs have empowered women for health care seeking - Community has trust and faith in TBAs and their services
Linkage of TBAs with formal health system	-TBAs have pivotal role in health promotion activities such as health messages on breast feeding, mother and child immunization. -TBAs must assist CMW who is naïve to reproductive health matters. -TBAs can be involved in linking high risk cases to CMW and health facility.
Role of TBAs in supporting obstetric care	- TBAs promote health messages for expecting mothers, assist CMW in delivery, identify expectant mothers with high risks, refer such cases to formal health system, and support post-natal care
Linkages and coordination among TBAs and CMWs	- Mixed responses in terms of relationship between CMWs and TBAs - VHC is an active forum for coordination - Coordination is better at places where TBA gets some share of CMW income
Livelihood of TBAs	- CMWs could offer some incentives to TBAs to strengthen referrals and assistance in skilled delivery - VHCs decide TBA incentive share of CMW income - Community pay in kind contribution to recognize services of TBA

Community experience with CMWs and TBAs

Availability of CMWs and the supportive role of TBAs in obstetric care has benefited communities, by and large. Most of the respondents shared that availability of CMWs has empowered women in order to seek essential and emergency obstetric care in rural communities. Members of VHC appreciated the binding relation of CMWs with TBAs. Despite availability of CMWs, the community members still have greater trust and faith in TBAs who live and deals with the village women since ages. Some of the respondents told that they avail services of TBAs due to her rich experience as compared to CMWs who are young and yet naïve to various reproductive health matters.

"TBA still has the critical role as being more in proximity to the village women. She enjoys far more trust of the communities. She has a years' long rapport with the families. People tend to follow her advice." (Director Health & Built Environment, AKF-P)

"I consider the role of TBAs important for two reasons; firstly they have been trusted by the communities, so they need to be taken on board for enhancing referrals to CMWs. Secondly, if they are not engaged properly then they will do more harm by doing deliveries and might spread negative propaganda too about the CMWs". (KII-AKF-P Senior Program Officer)

"I take my wife and child to CMW to see for medical help or treatment for maternal and child health problems? In our village, Dai (TBA) enjoys good relationship with the CMW". (FGD-VHC, Morder)"

"My family often seeks services from a TBA…she has all the experience." (FGD-VHC, Morder)

"The TBAs are working since long time and they have developed trust in the communities". (KII, AKHSP Manager)

Linkage of TBAs with formal health system

TBAs have pivotal role in health promotion activities such as health messages on nutrition, breast feeding, and vaccination promotion. Viewpoints of participants revealed that TBAs can be mainstreamed in a formal health system by assigning health promotion activities and for referring high risk cases to CMW and health facility.

"The TBAs have role in referring of high risk cases and expectant mothers for delivery to CMWs. TBAs are also playing very good role in the community in identifying pregnant mothers during 1st trimester in the community, arranging TT vaccinations and providing education on nutrition during pregnancy." (GM, AKHSP)

"They (TBAs) must be linked with the formal health system especially for health promotion, referrals and assisting deliveries with CMWs, when needed" *(FGD-VHC, Morder)*

Role of TBAs in supporting obstetric care

TBAs have pivotal role in terms of identifying pregnancy related complications and assisting safe obstetric care services with CMWs. Traditionally, TBAs have been involved in the promotion of better nutrition practices for pregnant mothers, breastfeeding practices, TT vaccination of expectant mothers, prevention of neonatal hypothermia, and post-natal care including family planning. TBAs have a crucial role in strengthening referral and coordination mechanisms with CMWs and with the health facility. Findings of the KIIs and FGDs revealed that some TBAs were even involved in assisting deliveries with CMWs.

"Many TBAs, no doubt have a sound folk wisdom, which can be used for various health promotion messages, especially where there is no other community health worker. Moreover, TBAs can be trained in providing antenatal care, TT vaccine, Misoprostol administration, recognizing the danger signs of pregnancy etc. This will give her a feeling that she still has a role to play in saving women's lives." (Director Health & Built Environment, AKF-P)

"TBAs promote breastfeeding and healthy nutritional practices in our community for mother and children; and they can keep on doing that". (FGD-VHC, Morder)

"In my village, TBA assists delivery with me and refers cases to me. I have to say that she is of great help for me". (FGD-CMWs, Parsan)

"They (TBAs) said, they do refer cases to them and in many cases have joined CMWs for conducting deliveries." (KII-AKF-P Senior Program Officer)

Linkages and coordination mechanisms among TBAs and CMWs

Mixed responses were recorded with regards to linkages and coordination among TBAs and CMWs. There is no formal referral mechanism between TBAs and the CMWs. Lack of role clarity, physical inaccessibility, professional rivalry and few income opportunities are key factors for weak linkages between TBAs and CMWs. Some of the CMWs expressed that they encountered problems and

resistance from the TBAs and community during the initial phase of deployment. Village health committee shared that they invite both TBAs and CMWs in the VHC meetings. Performance of TBAs vis-à-vis skills related to maternal and newborn health is not satisfactory. Therefore, they now go to the CMWs who have adequate competency in knowledge and skills about the obstetric care. Some of the members shared that TBAs refer complicated expectant mothers to CMWs and health facility. In few instances, TBA was seen to be assisting the CMW in deliveries.

"Rivalry; both are birth attendants; one is practicing by virtue of folk knowledge and the other is trained according to modern guidelines and WHO standards. So that has created a competition. At places, there is coordination too, where both are from the same family or where both have realized each other's importance." (Director Health & Built Environment, AKF-P)

"In some areas of intervention, the TBA perceived CMW as competitor." (GM, AKHSP)

"Many TBAs are in favor of CMWs because they cannot handle the complicated cases properly; yet some are against her. VHC is trying to bring the TBA as member in VHC and told them about the importance of deliveries by skilled hand and hygienic way." (FGD-VHC, Morder)

"We feel good about CMWs and think positively about them, majority still contact us, because the fee for CMWs is high". (FGD-TBAs, Raman)
"I am satisfied with the services provided by CMW…I referred two cases to CMW". (FGD-TBAs, Brock Kalaway)

"Introduction of CMWs in the areas will limit the role of TBAs. To cope with this challenge the TBAs were included in the VHCs and the roles/responsibilities of the CMWs were communicated through this platform". (KII, AKRSP Manager)

"The TBA in my area helps me in assisting delivery and refers cases to me." (FGD-CMWs, Terich Payeen)

"I faced resistance from the community at start….TBA was also not happy with my presence". (FGD-CMWs, Khuz)

"I think role clarity, distance and community trust on TBAs, income opportunity etc. are the main barriers .These can be effectively dealt if AKHSP works with communities, CMWs and TBAs and set out a proper coordination plan and play catalytic role to nurturing that symbiotic relationship." (KII-AKF-P, Senior Program Officer)

Livelihood and sustainability of TBAs

Supporting role of TBAs is very important; especially in context of difficult geographical terrains in Chitral. Various options as well as mechanisms were identified by the respondents, when asked about livelihood prospects of TBAs. Most of the respondents were of opinion that CMWs must pay some incentives to TBAs to strengthen referrals and assistance in skilled delivery. Findings of the KII revealed that one of the available forums to decide TBAs incentives is village committee. VHCs and other available forums such as Local Support organizations (LSOs) can play pivotal role in taking up such decisive role for supporting livelihood options for TBAs. Regarding payment to TBAs, some of the CMWs did not recompense TBAs. Some of the TBAs also told that they get in kind contributions and support for her services from the village families and not from the CMWs.

"Let it be the VHC meeting to decide about some incentives to be given to TBAs from CMW fee, because she will be referring every case to CMW. CMW should provide some money to TBA". (KII, AKHSP Manager)

"One of the CMW referred two cases to CMWs, and in fact she did join her for conducting the deliveries, but in return did not get anything from the CMW and the family too." (KII-AKF-P, Senior Program Officer)

"TBAs were providing delivery services before CMWs' deployment; hence CMWs' services will certainly affect their regular income (in cash or in kind). CMW should give incentive from her service fee to TBAs on each referral; whereas TBA can continue providing care to mother after delivery". (KII, Manager, Programs AKHSP)

"It is an informal arrangement between the two of them. Officially there is no binding on the CMW to pay TBA for referrals." (Director Health & Built Environment, AKF-P)

"In our area, CMW is paying Rs200 to the TBA for each referral". (FGD-VHC, Morder)

"In two cases, I assisted CMW for delivery of a mother. CMW did not give me any money. I got some cash and chicken from the house of delivered mother". (FGD-TBA, Lower Porth)

Discussion

The continued utilization of TBAs' services in Chitral is attributed to several factors including the TBAs' proximity to several villages, TBAs' respectful attitude toward the community, and flexible modes of payment (22,23). CMWs have been recently deployed in Chitral and experienced challenges and constraints by community based health providers and community itself in delivery of maternal health services (24,25,26). Evidence suggests that health management committees at the village level have been effective in reducing maternal complications through promoting linkages of health care providers with the community (27). The findings of our study also revealed that community forum in the form of VHC has played pivotal role in linking TBAs and CMWs with the community members.

Results of our study found that TBAs play vital role in improving maternal health such as diagnosing labor, assisting clean delivery with CMWs, detecting and referring maternal complications, and promoting health messages. While trained TBAs are not considered skilled birth attendants, their potential contribution in supporting maternal care has been recognized in low income and middle countries facing issues of human response scarcity (12,**Error! Bookmark not defined.**). Role of TBAs in administration of misoprostol to prevent postpartum hemorrhage in home-births is oft-advocated (28,29). Nevertheless, the

role of TBAs in supporting MNCH care cannot be neglected in settings where skilled birth attendants are fewer and new to health system. In the wake of reforms and the novel MNCH program of Pakistan, role of TBAs in improving maternal care and transforming health seeking behaviours ought to be promoted (30). Defining her role and contribution in the continuum of care is linked to her livelihood and income generation.

Improved linkages and relationship among CMWs and TBAs is of essence to flourish referral system from community to health facility. Better coordination and collaboration of TBAs with CMWs was promoted under CCSP. TBA, who has a long standing link with local community, can act as a bridge to strengthen referral mechanism between community and the formal health system (15). Findings of the qualitative study follow other studies which demonstrated that a formal partnership program among TBAs and the skilled midwives has yet to be seen (5). While the importance of the TBAs role in referral is universally acknowledged, most health systems have not developed an effective referral mechanism. The CCSP project provided an enabling forum at the village level for CMWs and TBAs to interact and improve referral linkages. Such partnership is crucial to improve access to health care services, especially for communities living in the remote areas. Nevertheless, training and monitoring TBAs on MNCH care is imperative to minimize chances of malpractices (13).

Financial constraints are a major risk to the livelihood of TBAs as evident from the findings of our study. Mostly they are receiving in kind payments by the family of expectant mothers; and a nominal payment by CMWs for each referral. Where TBAs did not receive any share from the CMWs, we found weak coordination mechanisms with the formal health system. Evidence suggests that in kind contributions by clients are the most common mode of payment by the clients (8,10). With the increasing use of TBAs in MNCH care, the question of compensation has become more pressing because these workers usually rely on rewards and in kind contributions by the clients (31). Continuing efforts to define the role of TBAs may benefit from an emphasis on their potential as active promoters of essential newborn care (32). In the context of Pakistan, the role of TBAs ought to be revisited and redefined, not only for the sake of trust of communities on her services, but also for her own livelihood.

Conclusion

Prevailing poverty in the area calls for thinking solutions to ensure livelihood of TBAs, and to figure out an emerging role for her after the introduction of CMW in the health system. TBAs surely have solutions in the continuum of care for pregnant women, lactating mothers and children under five. They continue to take pride and see value in their role in the health system to support MNCH care. Health systems performance can be amplified by having a healthy interface between the TBAs and CMWs, and for the larger benefit of the communities served.

Acknowledgement:

The authors acknowledge the facilitation and assistance provided by AKF-P, AKHSP and AKRSP to carry out field data collection.

Ethical consideration:

Ethics approval for this study was granted by the Institutional Review Board of Aga Khan Health Services, Pakistan. Verbal informed consent was obtained from all the study participants, after explaining the objectives of the study. Confidentiality and anonymity was assured to all the participants. Data was kept under lock and key with the principal researcher.

Authors' contributions

BTS and SAK conceived the study design and instruments. AM supervised the data collection and helped in analyses. BTS and SAK drafted the successive drafts of paper. SA conducted the critical review and added the intellectual content to the paper. All authors read and approved the final draft.

Funding: The study was a part of larger project "Chitral Child Survival Program" funded by USAID.

Competing Interests

The authors declare that they have no competing interests.

References

1. World Health Organization & UNICEF. Countdown to 2015 and beyond: fulfilling the health agenda for women and children. Geneva: 2014.
2. Shaikh BT. Marching toward the Millennium Development Goals: What about health systems, health-seeking behaviours and health service utilization in Pakistan? *World Health & Popul* 2008; 10(2): 44-52.
3. United Nations. Road map towards the implementation of the United Nations Millennium Declaration: report of the Secretary-General. New York: 2001.
4. Sachs JD, McArthur JW. The Millennium Project: a plan for meeting the Millennium Development Goals. *Lancet* 2005; 365(9456):347-53.
5. Titaley CR, Hunter CL, Dibley MJ, Heywood P. Why do some women still prefer traditional birth attendants and home delivery? A qualitative study on delivery care services in West Java Province, Indonesia. *BMC Pregnancy Childbirth* 2010, 10:43.
6. Lassi ZS, Haider BA, Bhutta ZA. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. *Cochrane Database Syst Rev* 2010; 11: CD007754.
7. Garces A, McClure EM, Chomba E, Patel A, Pasha O, Tshefu A. Home birth attendants in low income countries: who are they and what do they do? *BMC Pregnancy Childbirth* 2012; 12:34.
8. Byrne A, Morgan A. How the integration of traditional birth attendants with formal health systems can increase skilled birth attendance. *Int J Gynaecol Obstet* 2011; 115(2):127-34.
9. Ray AM, Salihu HM. The impact of maternal mortality interventions using traditional birth attendants and village midwives. *J Obstet Gynaecol* 2004; 24(1):5-11.
10. Agarwal S, Sethi V, Srivastava K, Jha PK, Baqui AH. Birth preparedness and complication readiness among slum women in Indore City, India. *J Health Nutr Popul* 2010; 28(4): 383-391.
11. Wilson A, Gallos ID, Plana N, Lissauer D, Khan KS, Zamora J, et al. Effectiveness of strategies incorporating training and support of traditional birth attendants on perinatal and maternal mortality: meta-analysis. *BMJ* 2011; 343:d7102.

12. Sibley LM, Sipe TA. Transition to skilled birth attendance: Is there a future role for trained traditional birth attendants. *J Health Popul Nutr* 2006; 24(4):472-8.
13. Bisika T. The effectiveness of the TBA programme in reducing maternal mortality and morbidity in Malawi. *East Afr J Public Health* 2008; 5(2):103–10.
14. Chalo RN, Salihu HM, Nabukera S, Zirabamuzaale C. Referral of high-risk pregnant mothers by trained traditional birth attendants in Buikwe County, Mukono District, Uganda. *J Obstet Gynaecol* 2005; 25(6):554-7.
15. Temesgen TM, Umer JY, Buda DS, Haregu TN. Contribution of traditional birth attendants to the formal health system in Ethopia: the case of Afar region. *Pan Afr Med J* 2012; 13(Suppl 1):15.
16. Wajid A, Rashid Z, Mir AM. Initial assessment of Community Midwives in rural Pakistan. PAIMAN. JSI Research and Training Institute, Inc; Islamabad: 2010.
17. Concern Worldwide. Examining the role of traditional birth attendants in the continuum of care in Sierra Leone. Innovations for maternal, newborn and child health. Policy Brief. Concern Worldwide; New York: 2013.
18. National Institute of Population Studies and Macro International Inc. Pakistan Demographic and Health Survey (PDHS) 2006–07. Government of Pakistan; Islamabad: 2008.
19. Government of Pakistan. PC1 National Maternal Newborn & Child health Program 2006-2012. Ministry of Health, Government of Pakistan; Islamabad: 2009.
20. Research and Development Solutions. The community midwives program in Pakistan. Policy Brief Series No 20. Islamabad: 2012.
21. Department of Health. District health profile-Chitral. Government of Khyber Pakhtunkhwa; Peshawar: 2014.
22. Chesney M, Davies S. Women's birth experiences in Pakistan – the importance of the Dai. The Royal College of Midwives. *Evid Based Midwifery* 2005; 3(1):26-32.
23. Owolabi OO, Glenton C, Lewin S, Pakenham-Walsh N. Stakeholder views on the incorporation of traditional birth attendants into the formal health systems of low-and middle-income countries: a qualitative analysis of the HIFA2015 and CHILD2015 email discussion forums. *BMC Pregnancy Childbirth* 2014; 14:118.

24. Sarfraz M, Hamid S. Challenges in delivery of skilled maternal care-experiences of community midwives in Pakistan. *BMC Pregnancy Childbirth* 2014; 14:59.

25. Research and Development Solutions. The community midwives program in Pakistan. Policy Brief Series No 20. Islamabad: USAID; 2012.

26. Research and Advocacy Fund/Children First. How far can I go? Social mobility of CMWs in Azad Kashmir. Islamabad: 2012.

27. Morrison J, Tumbahangphe KM, Budhathoki B, Neupane R, Sen A, Dahal K, et al. Community mobilization and health management committee strengthening to increase birth attendance by trained health workers in rural Makwanpur, Nepal: study protocol for a cluster randomized controlled trial. *Trials* 2011; 12:128.

28. Walraven G, Blum J, Dampha Y, Sowe M, Morison L, Winikoff B, et al. Misoprostol in the management of the third stage of labour in the home delivery setting in rural Gambia: a randomized controlled trial. *Br J Obstet Gynaecol* 2005; 112: 1277-83.

29. Mobeen N, Durocher J, Zuberi N, Jahan N, Blum J, Wasim S, et al. Administration of misoprostol by trained traditional birth attendants to prevent postpartum hemorrhage in homebirths in Pakistan: a randomized placebo-controlled trial. *BJOG* 2011; 118(3):353-61.

30. Shaikh BT, Haran D, Hatcher J. Women's social position and health-seeking behaviors: Is the health care system accessible and responsive in Pakistan? *Health Care Women Int* 2008; 29:945-959.

31. Gill CJ, Phiri-Mazala G, Guerina NG, Kasimba J, Mulenga C, MacLeod WB. Effect of training traditional birth attendants on neonatal mortality (Lufwanyama Neonatal Survival Project): randomized controlled study. *BMJ* 2011; 342:d346.

32. Falle TY, Mulany LC, Thatte N, Khatry SK, LeClerg SC, Darmstadt GL, et al. Potential role of traditional birth attendants in neonatal healthcare in rural southern Nepal. *J Health Popul Nutr* 2009; 27(1): 53–61.

BMJ Open

Emerging role of traditional birth attendants in mountainous terrain of Chitral District, Pakistan

Journal:	*BMJ Open*
Manuscript ID:	bmjopen-2014-006238.R1
Article Type:	Research
Date Submitted by the Author:	10-Sep-2014
Complete List of Authors:	Shaikh, Babar; Aga Khan Foundation, Pakistan, Health & Built Environment Khan, Sharifullah; Aga Khan Foundation, Health & Built Environment Maab, Ayesha; Aga Khan Foundation, Health & Built Environment Amjad, Sohail; Aga Khan Foundation, Health & Built Environment
Primary Subject Heading:	Health services research
Secondary Subject Heading:	Health policy, Obstetrics and gynaecology, Public health, Qualitative research, Reproductive medicine
Keywords:	Health policy < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Organisation of health services < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Public health < INFECTIOUS DISEASES

Emerging role of traditional birth attendants in mountainous terrain of Chitral District, Pakistan

Babar Tasneem Shaikh, MPH, PhD, FRCP Edin

Sharifullah Khan, MPH

Ayesha Maab, MSc

Sohail Amjad, MA-HM, MA-HMPP

Running title: Role of traditional birth attendants

Corresponding author

Dr Babar Tasneem Shaikh

Aga Khan Foundation (Pakistan)

Level Nine, Serena Business Complex

Khayaban-e-Suharwardy, Islamabad

t: +92 51 111-253-254

f: +92 51 2072552

e: shaikh.babar@gmail.com

Abstract:

Objectives: This research endeavors to re-define the role of TBAs in supporting the MNCH care now provided mainly by the trained community midwives (CMWs), to mainstream TBAs with the formal health system and to delineate their livelihood prospects, after the deployment and introduction of CMWs in the health system of Pakistan.

Setting: The study was conducted in District Chitral, Khyber Pakhtunkhwa province, covering the areas where Chitral Child Survival programme was implemented.

Participants: A qualitative exploratory study was conducted, comprising seven Key informant interviews (KIIs) with health managers, and four focus group discussions (FGDs) with CMWs, TBAs and members of Village Health Committees (VHCs).

Results: The study identified that In the new scenario, after the introduction of CMW in the health system, TBAs still have a pivotal role in health promotion activities such as breast feeding promotion and vaccination. TBAs can assist CMWs in normal deliveries, and refer high risk cases to formal health system. Generally, TBAs are positive about CMWs' introduction and welcome this addition. Yet, their livelihood has suffered after CMWs deployment. Monetary incentives to them in recognition of referrals to CMWs could be one solution. VHC is an active forum for strengthening coordination between the two service providers and to ensure an alternate and permanent livelihood support system for the TBAs.

Conclusion: TBAs assured their continued support in provision of continuum of care for pregnant women, lactating mothers and children under five. The district health authorities must figure out ways to foster a healthy interface vis-à-vis roles and responsibilities of TBAs and CMWs. After some time, it would be worthwhile to do further research to look into the CMW's integration in the system, as well as TBA's continued role for provision of MNCH care.

Keywords: Maternal Newborn & Child Health, Traditional birth attendant, Community midwife, Qualitative research, Pakistan.

Strengths & Limitations of the study

A study, first of its kind, which has expounded on the subject of TBAs role and livelihood after the introduction of trained MNCH providers in Pakistan. Use of qualitative methods provided rich insight into women's interpretations and decision-making regarding health care seeking during and after pregnancy in a relatively conservative setting of Pakistan. Study presents views of all stakeholders involved in the intervention.

The findings represent a specific sample size, study site and socio-cultural milieu and therefore may not be generalized for the entire province or country. Health providers involved in the study were mainly from AKHSP and government who were already exposed to this intervention. Only few TBAs could be gathered for discussion, because most of them were remotely located, and weather and family constraints did not allow them to travel. Moreover, the prospective role of TBA is discussed in a special context, whereby a CMW was trained and deployed in the area for increasing skilled birth attendance.

Introduction

Despite all advances toward MDGs 4 & 5, every year 6.6 million children die before five years of age (44% as newborns) and 289,000 maternal deaths occur, mostly from preventable causes (1). This state of affairs has raised serious global concern over the years in developing countries to ensure availability and accessibility of human resources for ensuring continuum of care for expecting mothers. Uniform availability and distribution of skilled birth attendants is critical to consider while looking at health service utilization trends (2). The Millennium Declaration in 2000 signed by 189 nations, recognized proportion of births assisted by trained birth as an important indicator to track maternal and child survival indicators (3,4). To increase the availability and accessibility of maternal and child health care services, training of TBAs and strengthening the partnership between community midwives (CMWs) and TBAs is widely acknowledged worldwide (5,6). Nonetheless, role of the TBAs cannot be effective in a weak primary health care system and in an unplanned referral mechanism (7).

In order to attain MDG-5, isolated interventions are not able to reduce maternal mortality sufficiently. It is important to review strategies to maximize strengths of TBAs as well and skilled birth attendants. Evidence suggests that skilled birth attendance has increased in regions where TBAs are integrated with the formal health system (8). However, integration of TBAs with the formal health system may require capacity development and supervision of TBAs, collaboration skills for health workers, involvement of TBAs at health facilities and, improved capacity on communication and referral systems. With this approach, TBAs may positively contribute to maternal and child health outcomes (9). Trainings of the TBAs not only enhance their knowledge and skills on obstetric care and referral mechanism, but also lead to greater community acceptance and a greater consumer satisfaction. They can play a vital role in birth preparedness and identification of danger signs (10). Training of TBAs has shown impact on perinatal and neonatal deaths which can be significantly reduced (11). Moreover, TBAs have been a critical contributor in providing skilled maternal, newborn and child health (MNCH) care in rural population of developing countries due to inadequate numbers of human resource for service delivery (12). Therefore, role of trained TBAs in healthcare provision cannot be undermined. Developing countries have used TBAs as a key strategy to improve maternal and child health care (13). They have been effective in

improving referral mechanism and links with the formal health care system (14). Literature review has suggested that a TBA is preferred over a midwife who is young, unmarried girl and without children. This trend is more common in countries where fresh CMWs are recently deployed such as Pakistan (15,16). Another reason for the community acceptance of TBAs is that they are affordable option than professional midwives and she often accepts payment in kind (17). Moreover, TBAs are always happy to make house visits, warranting mother's privacy.

Pakistan is among the few countries in South Asia that continues to have dismal maternal and child health indicators. In Pakistan, Maternal Mortality Ratios (MMR) is high, ranging from 240 to 700 per 100,000 live births. The top three causes of maternal death are postpartum hemorrhage, eclampsia and sepsis. Approximately two-thirds of all births (61%) take place at home due to limited access to health facilities. Home based deliveries are usually attended by the TBA and now newly deployed community midwives in some rural parts of the country (18). While some maternity care indicators appear to have improved over the last two decades, women's access to prenatal health care continues to be low in Pakistan18.

Realizing the need for community health work force, Government of Pakistan launched the national MNCH program in 2006 to help the rural women deliver safely (19). Although the program has been successful in countries such as Malaysia and Indonesia, challenges faced by the CMW program of Pakistan are multifaceted. These challenges are related to acceptance by community, competition with other service providers, weak referral system, inadequate skill set and lack of community involvement (20).

The intervention

To address health system constraints, Chitral Child Survival Program (CCSP) of Aga Khan Foundation Pakistan (AKF-P) deployed CMWs, supported community financing scheme, improved referral linkages and implemented a behavior change communication campaign from 2008-2014. CCSP was implemented in close partnership of Department of Health, Khyber Pakhtunkhwa, Aga Khan Health Services Pakistan

(AKHSP), and Aga Khan Rural Support Program (AKRSP). The CCSP interventions, especially the role of community based saving groups, village health committees (VHCs) and community based emergency maternal referral mechanism to achieve project results showed that CCSP had attempted to engage the TBAs proactively. The project empowered TBAs on Birth Preparedness and Complications Readiness (BPCR) plans and integrated referral mechanisms. Involvement of TBAs in the project was meaningful to generate the community acceptability for young CMWs, identification of high risk cases, and referrals of complications to CMW and transporting pregnant woman to health facility in time.

This research endeavored to identify the role of TBAs in supporting the MNCH care, partnership mechanism with the formal health system and also explored livelihood options for TBAs.

Methodology

a) Study site

The study was conducted in Chitral district, north western border of Pakistan, from March-April 2014. The population of the intervention area is 200,000, about 57% of the total population of the district and residing in 243 villages. The government department of health and Aga Khan Health Services Pakistan (AKHSP) are the two primary formal sector healthcare providers in Chitral. The public-sector healthcare infrastructure in the district includes 22 civil dispensaries, 21 basic health units; three tehsil headquarters and one district headquarter hospital (21). AKHSP operates its own 32 health facilities in Chitral which include 17 health centers, eight family health centers, four dispensaries and three secondary care facilities, covering 60% of Chitral district. The MMR in the province is 275/100,000 live births; whereas under five mortality is 75/1000 live births (18~~19~~). Despite the presence of skilled birth attendants under MNCH program, large proportion of the deliveries is still attended by TBAs in Chitral district.

b) Study Design and data collection

The project documents and other relevant studies were thoroughly reviewed and the collated information guided to design the qualitative data collection instruments. A qualitative exploratory

study entailed seven KIIs and four FGDs conducted with different study participants. The questions for focus group discussion (FGD) and key informants interview (KIIs) explore the role of TBAs in supporting MNCH care and CCSP project activities, community experience with TBAs, TBAs' relationship and coordination with the CMWs, referral of cases; remuneration and livelihood sources of TBAs; ways to engage TBAs in continuum of care, working relationships and linkages with the formal health system, and sustainability/livelihood of TBAs. Using a participation diagram in FGDs, it was ensured that all the participants must speak on each question. To ensure quality control, information collected through note-taking was cross-checked for completeness and consistency before and during data processing by the research team.

c) Study participants

All the study participants were purposively sampled from the intervention areas in the district, with the help of the implementing agencies on ground. Community based health workers i.e. CMWs and TBAs; members of VHC and Community Based Saving Group (CBSG) were included in the discussion. The participants were encouraged by the moderator (PI) to interact with each other and comment on experiences and perceptions regarding role of TBAs, partnership with formal health system, and livelihood of TBAs. KIIs were conducted with two government health managers, two AKF-P managers, and three AKHSP managers. All the FGDs were conducted in the community; whereas KIIs were conducted in the respective offices of health managers. Table-1 presents the detail of the methods employed for the study.

Table-1: Detail of methods employed in qualitative study

Cadre	Method	Total number of respondents	Village
CMWs	FGD	10	Mori Lshat, Barini, Awi, Miragarm, Sore Laspoor, Raman, Terich Payeen, Lot Owir Bala, Lot Owir Payeen, Gohkir, Parsan, Owir Lasht Arkari, Besti Arkari, Khuz, Phashk
TBAs	FGD	5	Lower Porth, Brock Kalaway, Porth Bala, Raman, Brock Baraman Deh
VHC	FGD	8	Morder
CBSG	FGD	10	Morder

Health managers (AKHSP, AKF-P & Government)	7 KIIs	07	Chitral city

Purposive sampling technique was adopted, inviting the participation of those CMWs, and TBAs who had been serving actively in their local communities for the last two years. These health workers were identified with the help of health managers of AKHSP and government. Likewise, only those members of VHC were invited for FGD, who had been active for the last two years. Each participant of the FGD and KII was given the verbal information about the study by the research team and was given a consent form prior to participation.

d) Data analysis

A qualitative content analysis was applied to analyze the information manually from all the FGDs and KIIs. A stepwise approach was adopted for the content analysis. The analysis aimed at finding manifest and latent meaning of data. The transcribed data was initially read several times by the principal researcher in order to find the sense of the whole. At first stage the segmentation of information was done i.e. segments and sub-segments of information were organized. Subsequently the significant information was extracted which was related to research questions. At second stage the common views of the respondents were put together at one place. At third stage, data was coded (different responses highlighted) and then these codes were grouped into categories and abstracted into sub-themes and a main theme. At final stage, the meanings of themes/descriptions were interpreted by keeping in view and considering the cultural context of the participants.

Results

The main theme which came out was the “emerging role of TBAs to improve Maternal, Newborn and Child Health”. After content analysis, following sub-themes were identified as shown in Table 2:

1. Community experience with CMWs and TBAs
2. View of participants on utilization of TBAs in formal health system
3. Role of TBAs in supporting obstetric care
4. Linkages and coordination among TBAs and CMWs

5. Livelihood of TBAs

Table-2: Matrix of qualitative research analysis

Nodes	Sub-nodes
Community experience with CMWs and TBAs	- Availability of CMWs have empowered women for health care seeking - Community has trust and faith in TBAs and their services
Linkage of TBAs with formal health system	-TBAs have pivotal role in health promotion activities such as health messages on breast feeding, mother and child immunization. -TBAs must assist CMW who is naïve to reproductive health matters. -TBAs can be involved in linking high risk cases to CMW and health facility.
Role of TBAs in supporting obstetric care	- TBAs assist CMW in delivery, identify expectant mothers with high risks, refer such cases to formal health system, and support post-natal care
Linkages and coordination among TBAs and CMWs	- Mixed responses in terms of relationship between CMWs and TBAs - VHC is an active forum for coordination - Coordination is better at places where TBA gets some share of CMW income
Livelihood of TBAs	- CMWs could offer some incentives to TBAs to strengthen referrals and assistance in skilled delivery - VHCs decide TBA incentive share of CMW income - Community pay in kind contribution to recognize services of TBA

Community experience with CMWs and TBAs

Availability of CMWs and the supportive role of TBAs in obstetric care have benefited communities, by and large. Most of the respondents shared that availability of CMWs has empowered women in order to seek essential and emergency obstetric care in rural communities. Members of VHC appreciated the binding relation of CMWs with TBAs. Despite availability of CMWs, the community members still have greater trust and faith in TBAs who live and deals with the village women since ages. Some of the respondents told that they avail services of TBAs due to her rich experience as compared to CMWs who are young and yet naïve to various reproductive health matters.

"TBA still has the critical role as being more in proximity to the village women. She enjoys far more trust of the communities. She has a years' long rapport with the families. People tend to follow her advice." (Director Health, AKF-P)

"I consider the role of TBAs important for two reasons; firstly they have been trusted by the communities, so they need to be taken on board for enhancing referrals to CMWs. Secondly, if they are not engaged properly then they will do more harm by doing deliveries and might spread negative propaganda too about the CMWs". (KII-AKF-P Senior Program Officer)

"I take my wife and child to CMW to see for medical help or treatment for maternal and child health problems? In our village, Dai (TBA) enjoys good relationship with the CMW". (FGD-VHC, Morder)"

"My family often seeks services from a TBA…she has all the experience." (FGD-VHC, Morder)

"The TBAs are working since long time and they have developed trust in the communities". (KII, AKHSP Manager)

Linkage of TBAs with formal health system

TBAs have pivotal role in health promotion activities such as health messages on nutrition, breast feeding, and vaccination promotion. Viewpoints of participants revealed that TBAs can be mainstreamed in a formal health system by assigning health promotion activities and for referring high risk cases to CMW and health facility.

"The TBAs have role in referring of high risk cases and expectant mothers for delivery to CMWs. TBAs are also playing very good role in the community in identifying pregnant mothers during 1st trimester in the community, arranging TT vaccinations and providing education on nutrition during pregnancy." (GM, AKHSP)

"They (TBAs) must be linked with the formal health system especially for health promotion, referrals and assisting deliveries with CMWs, when needed" (FGD-VHC, Morder)

Role of TBAs in supporting obstetric care

TBAs have pivotal role in terms of identifying pregnancy related complications and assisting safe obstetric care services with CMWs. Traditionally, TBAs have been involved in the promotion of better nutrition practices for pregnant mothers, breastfeeding practices, TT vaccination of expectant mothers, prevention of neonatal hypothermia, and post-natal care including family planning. TBAs have a crucial role in strengthening referral and coordination mechanisms with CMWs and with the health facility. Findings of the KIIs and FGDs revealed that some TBAs were even involved in assisting deliveries with CMWs.

"Many TBAs, no doubt have a sound folk wisdom, which can be used for various health promotion messages, especially where there is no other community health worker. Moreover, TBAs can be trained in providing antenatal care, TT vaccine, Misoprostol administration, recognizing the danger signs of pregnancy etc. This will give her a feeling that she still has a role to play in saving women's lives." (Director Health, AKF-P)

"TBAs promote breastfeeding and healthy nutritional practices in our community for mother and children; and they can keep on doing that". (FGD-VHC, Morder)

"In my village, TBA assists delivery with me and refers cases to me. I have to say that she is of great help for me". (FGD-CMWs, Parsan)

"They (TBAs) said, they do refer cases to them and in many cases have joined CMWs for conducting deliveries." (KII-AKF-P Senior Program Officer)

Linkages and coordination mechanisms among TBAs and CMWs

Lack of role clarity, physical inaccessibility, professional rivalry and few income opportunities are key factors for weak linkages between TBAs and CMWs. Some of the CMWs expressed that they encountered problems and resistance from the TBAs and community during the initial phase of deployment. Village health committee shared that they invite both TBAs and CMWs in the VHC meetings. Performance of TBAs vis-à-vis skills related to maternal and newborn health is not satisfactory. Therefore, they now go to the CMWs who have adequate competency in knowledge and skills about the obstetric care. Some of the members shared that TBAs refer complicated expectant mothers to CMWs and health facility. In few instances, TBA was seen to be assisting the CMW in deliveries.

"Rivalry; both are birth attendants; one is practicing by virtue of folk knowledge and the other is trained according to modern guidelines and WHO standards. So that has created a competition. At places, there is coordination too, where both are from the same family or where both have realized each other's importance." (Director Health, AKF-P)

"The issues between TBA and CMW can be effectively dealt if AKHSP works with all stakeholders and set out a proper coordination plan, and play catalytic role to nurture a health relationship." (KII-AKF-P, Senior Program Officer)

"In some areas of intervention, the TBA perceived CMW as competitor." (GM, AKHSP)

"Introduction of CMWs in the areas will limit the role of TBAs. To cope with this challenge the TBAs were included in the VHCs and the roles/responsibilities of the CMWs were communicated through this platform". (KII, AKRSP Manager)

"Many TBAs are in favor of CMWs because they cannot handle the complicated cases properly; yet some are against her. VHC is trying to bring the TBA as member in VHC and told them about the importance of deliveries by skilled hand and hygienic way." (FGD-VHC, Morder)

According to CMWs, they have high regard for the TBA, her experience and wisdom. They feel that TBA can complement their work. On the other hand, most TBAs are satisfied with CMWs work, skills and services rendered to the community women. Very few seem to be unhappy indeed.

Livelihood and sustainability of TBAs

Supporting role of TBAs is very important; especially in context of difficult geographical terrains in Chitral. Various options as well as mechanisms were identified by the respondents, when asked about livelihood prospects of TBAs. Most of the respondents were of opinion that CMWs must pay some incentives to TBAs to strengthen referrals and assistance in skilled delivery. Findings of the KII revealed that one of the available forums to decide TBAs incentives is village committee. VHCs and other available forums such as Local Support organizations (LSOs) can play pivotal role in taking up such decisive role for supporting livelihood options for TBAs. Regarding payment to TBAs, some of the CMWs did not recompense TBAs. Some of the TBAs also told that they get in kind contributions and support for her services from the village families and not from the CMWs.

"It is an informal arrangement between the two of them. Officially there is no binding on the CMW to pay TBA for referrals." (Director Health, AKF-P)

"One of the CMW referred two cases to CMWs, and in fact she did join her for conducting the deliveries, but in return did not get anything from the CMW and the family too." (KII-AKF-P, Senior Program Officer)

"Let it be the VHC meeting to decide about some incentives to be given to TBAs from CMW fee, because she will be referring every case to CMW. CMW should provide some money to TBA". (KII, AKHSP Manager)

"TBAs were providing delivery services before CMWs' deployment; hence CMWs' services will certainly affect their regular income (in cash or in kind). CMW should give incentive from her service fee to TBAs on each referral; whereas TBA can continue providing care to mother after delivery". (KII, Manager Programs, AKHSP)

"In our area, CMW is paying Rs200 to the TBA for each referral". (FGD-VHC, Morder)

"In two cases, I assisted CMW for delivery of a mother. CMW did not give me any money. I got some cash and chicken from the house of delivered mother". (FGD-TBA, Lower Porth)

Discussion

Though communities where CMWs are deployed after training are happy, yet the continued utilization of TBAs' services in Chitral. Fact is attributed to several factors including the TBAs' proximity to several villages, TBAs' respectful attitude toward the community, and flexible modes of payment (22,23). CMWs have been recently deployed in Chitral and experienced challenges and constraints by community based health providers and community itself in delivery of maternal health services (24,25). Evidence suggests that health management committees at the village level have been effective in reducing maternal complications through promoting linkages of health care providers with the community (26). The findings of our study also revealed that community forum in the form of VHC has played pivotal role in convincing the communities to avail CMW services and motivate the TBA to continue in supportive role in MNCH care. Awareness sessions have to be conducted on regular basis and on different forums to better inform the elder women and expecting mothers about the benefits of making use of skilled birth attendant i.e. CMW.

Results of our study found that TBAs play vital role in improving maternal health such as diagnosing labor, assisting clean delivery with CMWs, detecting and referring maternal complications, and promoting health messages. While trained TBAs are not considered skilled birth attendants, their potential contribution in supporting maternal care has been recognized in low income and middle countries facing issues of human response scarcity (12,**Error! Bookmark not defined.**~~13~~). Role of TBAs in administration of misoprostol to prevent postpartum hemorrhage in home-births is oft-advocated (27,28). Nevertheless, the role of TBAs in supporting MNCH care cannot be neglected in settings where skilled birth attendants are fewer and new to health system. In the wake of reforms and the novel MNCH program of Pakistan, role of TBAs in improving maternal care and transforming health seeking behaviours ought to be

promoted (29). Defining her role and contribution in the continuum of care is linked to her livelihood and income generation.

Improved linkages and relationship among CMWs and TBAs is of essence to flourish referral system from community to health facility. Better coordination and collaboration of TBAs with CMWs was promoted under CCSP, by sensitizing the CMW on prospective role of TBA which will complement her services and will help in building her rapport with the community. TBA, who has a long standing link with local community, can act as a bridge to strengthen referral mechanism between community and the formal health system (15~~21~~). Findings of the qualitative study follow other studies which demonstrated that a formal partnership program among TBAs and the skilled midwives has yet to be seen (5~~6~~). While the importance of the TBAs role in referral is universally acknowledged, most health systems have not developed an effective referral mechanism. The CCSP project provided an enabling forum at the village level for CMWs and TBAs to interact and improve referral linkages. Such partnership is crucial to improve access to health care services, especially for communities living in the remote areas. Nevertheless, training and monitoring TBAs on MNCH care is imperative to minimize chances of malpractices (13). Therefore, joint monitoring by AKHSP and government, by involving the village health committees could be instrumental in this regard. Moreover, participatory monitoring is always less threatening; and hence TBAs should be meaningfully engaged in such type of monitoring.

Financial constraints are a major risk to the livelihood of TBAs as evident from the findings of our study. Mostly they are receiving in kind payments by the family of expectant mothers; and a nominal payment by CMWs for each referral. CMWs must keep a cushion of nominal payment to TBA, after verifying her services. That will surely help in building a healthy relationship amongst the two service providers. Where TBAs did not receive any share from the CMWs, we found weak coordination mechanisms with the formal health system. Evidence suggests that in kind contributions by clients are the most common mode of payment by the clients (8~~9~~,10~~11~~). With the increasing use of TBAs in MNCH care, the question of compensation has become more pressing because these workers usually rely on rewards and in kind contributions by the clients (30). Continuing efforts to define the role of TBAs may benefit from an

emphasis on their potential as active promoters of essential newborn care (31). In the context of Pakistan, the role of TBAs ought to be revisited and redefined, not only for the sake of trust of communities on her services, but also for her own livelihood.

Conclusion

Prevailing poverty in the area calls for thinking solutions to ensure livelihood of TBAs, and to figure out an emerging role for her after the introduction of CMW in the health system. TBAs surely have solutions in the continuum of care for pregnant women, lactating mothers and children under five. They continue to take pride and see value in their role in the health system to support MNCH care. Health systems performance can be amplified by having a healthy interface between the TBAs and CMWs, and for the larger benefit of the communities served.

Acknowledgement:

The authors acknowledge the facilitation and assistance provided by AKF-P, AKHSP and AKRSP to carry out field data collection.

Ethical consideration:

Ethics approval for this study was granted by the Institutional Review Board of Aga Khan Health Services, Pakistan. Verbal informed consent was obtained from all the study participants, after explaining the objectives of the study. Confidentiality and anonymity was assured to all the participants. Data was kept under lock and key with the principal researcher.

Authors' contributions

BTS and SAK conceived the study design and instruments. AM supervised the data collection and helped in analyses. BTS and SAK drafted the successive drafts of paper. SA conducted the critical review and added the intellectual content to the paper. All authors read and approved the final draft.

Funding: The study was a part of larger project "Chitral Child Survival Program" funded by USAID.

Competing Interests

The authors declare that they have no competing interests.

References

1. World Health Organization & UNICEF. Countdown to 2015 and beyond: fulfilling the health agenda for women and children. Geneva: 2014.
2. Shaikh BT. Marching toward the Millennium Development Goals: What about health systems, health-seeking behaviours and health service utilization in Pakistan? *World Health & Popul* 2008; 10(2): 44-52.
3. United Nations. Road map towards the implementation of the United Nations Millennium Declaration: report of the Secretary-General. New York: 2001.
4. Sachs JD, McArthur JW. The Millennium Project: a plan for meeting the Millennium Development Goals. *Lancet* 2005; 365(9456):347-53.
5. Titaley CR, Hunter CL, Dibley MJ, Heywood P. Why do some women still prefer traditional birth attendants and home delivery? A qualitative study on delivery care services in West Java Province, Indonesia. *BMC Pregnancy Childbirth* 2010; 10:43.
6. Lassi ZS, Haider BA, Bhutta ZA. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. *Cochrane Database Syst Rev* 2010; 11: CD007754.
7. Garces A, McClure EM, Chomba E, Patel A, Pasha O, Tshefu A. Home birth attendants in low income countries: who are they and what do they do? *BMC Pregnancy Childbirth* 2012; 12:34.
8. Byrne A, Morgan A. How the integration of traditional birth attendants with formal health systems can increase skilled birth attendance. *Int J Gynaecol Obstet* 2011; 115(2):127-34.
9. Ray AM, Salihu HM. The impact of maternal mortality interventions using traditional birth attendants and village midwives. *J Obstet Gynaecol* 2004; 24(1):5-11.
10. Agarwal S, Sethi V, Srivastava K, Jha PK, Baqui AH. Birth preparedness and complication readiness among slum women in Indore City, India. *J Health Nutr Popul* 2010; 28(4): 383-391.

11. Wilson A, Gallos ID, Plana N, Lissauer D, Khan KS, Zamora J, et al. Effectiveness of strategies incorporating training and support of traditional birth attendants on perinatal and maternal mortality: meta-analysis. *BMJ* 2011; 343:d7102.
12. Sibley LM, Sipe TA. Transition to skilled birth attendance: Is there a future role for trained traditional birth attendants. *J Health Popul Nutr* 2006; 24(4):472-8.
13. Bisika T. The effectiveness of the TBA programme in reducing maternal mortality and morbidity in Malawi. *East Afr J Public Health* 2008; 5(2):103–10.
14. Chalo RN, Salihu HM, Nabukera S, Zirabamuzaale C. Referral of high-risk pregnant mothers by trained traditional birth attendants in Buikwe County, Mukono District, Uganda. *J Obstet Gynaecol* 2005; 25(6):554-7.
15. Temesgen TM, Umer JY, Buda DS, Haregu TN. Contribution of traditional birth attendants to the formal health system in Ethopia: the case of Afar region. *Pan Afr Med J* 2012; 13(Suppl 1):15.
16. Wajid A, Rashid Z, Mir AM. Initial assessment of Community Midwives in rural Pakistan. PAIMAN. JSI Research and Training Institute, Inc; Islamabad: 2010.
17. Concern Worldwide. Examining the role of traditional birth attendants in the continuum of care in Sierra Leone. Innovations for maternal, newborn and child health. Policy Brief. Concern Worldwide; New York: 2013.
18. National Institute of Population Studies and Macro International Inc. Pakistan Demographic and Health Survey (PDHS) 2006–07. Government of Pakistan; Islamabad: 2008.
19. Government of Pakistan. PC1 National Maternal Newborn & Child health Program 2006-2012. Ministry of Health, Government of Pakistan; Islamabad: 2009.
20. Research and Development Solutions. The community midwives program in Pakistan. Policy Brief Series No 20. Islamabad: 2012.
21. Department of Health. District health profile-Chitral. Government of Khyber Pakhtunkhwa; Peshawar: 2014.
22. Chesney M, Davies S. Women's birth experiences in Pakistan – the importance of the Dai. The Royal College of Midwives. *Evid Based Midwifery* 2005; 3(1):26-32.

23. Owolabi OO, Glenton C, Lewin S, Pakenham-Walsh N. Stakeholder views on the incorporation of traditional birth attendants into the formal health systems of low-and middle-income countries: a qualitative analysis of the HIFA2015 and CHILD2015 email discussion forums. *BMC Pregnancy Childbirth* 2014; 14:118.

24. Sarfraz M, Hamid S. Challenges in delivery of skilled maternal care-Experiences of community midwives in Pakistan. *BMC Pregnancy Childbirth* 2014; 14:59.

25. Research and Advocacy Fund/Children First. How far can I go? Social mobility of CMWs in Azad Kashmir. Islamabad: 2012.

26. Morrison J, Tumbahangphe KM, Budhathoki B, Neupane R, Sen A, Dahal K, et al. Community mobilization and health management committee strengthening to increase birth attendance by trained health workers in rural Makwanpur, Nepal: study protocol for a cluster randomized controlled trial. *Trials* 2011; 12:128.

27. Walraven G, Blum J, Dampha Y, Sowe M, Morison L, Winikoff B, et al. Misoprostol in the management of the third stage of labour in the home delivery setting in rural Gambia: a randomized controlled trial. *Br J Obstet Gynaecol* 2005; 112: 1277-83.

28. Mobeen N, Durocher J, Zuberi N, Jahan N, Blum J, Wasim S, et al. Administration of misoprostol by trained traditional birth attendants to prevent postpartum hemorrhage in homebirths in Pakistan: a randomized placebo-controlled trial. *BJOG* 2011; 118(3):353-61.

29. Shaikh BT, Haran D, Hatcher J. Women's social position and health-seeking behaviors: Is the health care system accessible and responsive in Pakistan? *Health Care Women Int* 2008; 29:945-959.

30. Gill CJ, Phiri-Mazala G, Guerina NG, Kasimba J, Mulenga C, MacLeod WB. Effect of training traditional birth attendants on neonatal mortality (Lufwanyama Neonatal Survival Project): randomized controlled study. *BMJ* 2011; 342:d346.

31. Falle TY, Mulany LC, Thatte N, Khatry SK, LeClerg SC, Darmstadt GL, et al. Potential role of traditional birth attendants in neonatal healthcare in rural southern Nepal. *J Health Popul Nutr* 2009; 27(1): 53–61.

Emerging role of traditional birth attendants in mountainous terrain of Chitral District, Pakistan

Babar Tasneem Shaikh, MPH, PhD, FRCP Edin

Sharifullah Khan, MPH

Ayesha Maab, MSc

Sohail Amjad, MA-HM, MA-HMPP

Running title: Role of traditional birth attendants

Corresponding author

Dr Babar Tasneem Shaikh

Aga Khan Foundation (Pakistan)

Level Nine, Serena Business Complex

Khayaban-e-Suharwardy, Islamabad

t: +92 51 111-253-254

f: +92 51 2072552

e: shaikh.babar@gmail.com

Abstract:

~~Introduction~~Objectives: ~~Shortage of health workforce is the major impediment in the achievement of health related MDGs 4 & 5. It is important to review strategies to maximize strengths of traditional birth attendants (TBAs) and skilled birth attendants in resource limited settings. However, role of TBAs in the provision of maternal, newborn and child health (MNCH) care has been a subject of discussion.~~ This research endeavors to ~~identify~~re-define the role of TBAs in supporting the MNCH care now provided mainly by the trained community midwives (CMWs), to mainstream~~ing~~ TBAs with the formal health system and to delineate their livelihood prospects, after the deployment and introduction of CMWs in the health system of Pakistan.

Setting: The study was conducted in District Chitral, Khyber Pakhtunkhwa province, covering the areas where Chitral Child Survival programme was implemented.

~~Methods~~Participants: A qualitative exploratory study was conducted, comprising ~~in predominantly rural district Chitral, Pakistan. About~~ seven Key informant interviews (KIIs) with health managers, and four focus group discussions (FGDs) ~~were conducted~~ with ~~community midwives (~~CMWs~~)~~, TBAs and members of Village Health Committees (VHCs).

Results: The study identified that ~~community has trust and faith in TBAs and her services.~~ In the new scenario, after the introduction of CMW in the health system, TBAs still have ~~had~~ a pivotal role in health promotion activities such as breast feeding promotion and vaccination. TBAs can assist~~onduct~~ CMWs in normal deliveries, and refer high risk cases to formal health system. ~~With regard to CMW introduction in system,~~ Generally, TBAs are positive about CMWs' introduction and welcome this addition. Yet, their livelihood has suffered after CMWs deployment. Monetary incentives to them in recognition of referrals to CMWs could be one solution. ~~There ought to be a meaningful interaction between the two cadres at the village level.~~ VHC is an active forum for strengthening coordination between the~~m~~ two service providers and to ensure an alternate and permanent livelihood support system for the TBAs.

Conclusion: TBAs assured their continued~~ly~~ support in provision of~~the need for~~ continuum of care for pregnant women, lactating mothers and children under five. The district health authorities must figure out ways to foster a healthy interface vis-à-vis roles and responsibilities of TBAs and CMWs. After some time,

Formatted: Font: Not Bold

Formatted: Font: Not Bold

it would be worthwhile to do further research to look into the CMW's integration in the system, as well as TBA's continued role for provision of MNCH care.

Keywords: Maternal Newborn & Child Health, Traditional birth attendant, Community midwife, Qualitative research, Pakistan.

Strengths & Limitations of the study

A study, first of its kind, which has expounded on the subject of TBAs role and livelihood after the introduction of trained MNCH providers in Pakistan. Use of qualitative methods provided rich insight into women's interpretations and decision-making regarding health care seeking during and after pregnancy in a relatively conservative setting of Pakistan. Study presents views of all stakeholders involved in the intervention.

The findings represent a specific sample size, study site and socio-cultural milieu and therefore may not be generalized for the entire province or country. Health providers involved in the study were mainly from AKHSP and government who were already exposed to this intervention. Only few TBAs could be gathered for discussion, because most of them were remotely located, and weather and family constraints did not allow them to travel. Moreover, the prospective role of TBA is discussed in a special context, whereby a CMW was trained and deployed in the area for increasing skilled birth attendance.

Introduction

Despite all advances toward MDGs 4 & 5, every year 6.6 million children die before five years of age (44% as newborns) and 289,000 maternal deaths occur, mostly from preventable causes (1). This state of affairs has raised serious global concern over the years in developing countries to ensure availability and accessibility of human resources for ensuring continuum of care for expecting mothers. Uniform availability and distribution of skilled birth attendants is critical to consider while looking at health service utilization trends (2). The Millennium Declaration in 2000 signed by 189 nations, recognized proportion of births assisted by trained birth as an important indicator to track maternal and child survival indicators (3,4). To increase the availability and accessibility of maternal and child health care services, training of TBAs and strengthening the partnership between community midwives (CMWs) and TBAs is widely acknowledged worldwide (5,6). Nonetheless, role of the TBAs cannot be effective in a weak primary health care system and in an unplanned referral mechanism (7).

In order to attain MDG-5, isolated interventions are not able to reduce maternal mortality sufficiently. It is important to review strategies to maximize strengths of TBAs as well and skilled birth attendants. Evidence suggests that skilled birth attendance has increased in regions where TBAs are integrated with the formal health system (8). However, integration of TBAs with the formal health system may require capacity development and supervision of TBAs, collaboration skills for health workers, involvement of TBAs at health facilities and, improved capacity on communication and referral systems. With this approach, TBAs may positively contribute to maternal and child health outcomes (9). Trainings of the TBAs not only enhance their knowledge and skills on obstetric care and referral mechanism, but also lead to greater community acceptance and a greater consumer satisfaction. They can play a vital role in birth preparedness and identification of danger signs (10). Training of TBAs has shown impact on perinatal and neonatal deaths which can be significantly reduced (11). Moreover, TBAs have been a critical contributor in providing skilled maternal, newborn and child health (MNCH) care in rural population of developing countries due to inadequate numbers of human resource for service delivery (12). Therefore, role of trained TBAs in healthcare provision cannot be undermined. Developing countries have used TBAs as a key strategy to improve maternal and child health care (13). They have been effective in

improving referral mechanism and links with the formal health care system (14). Literature review has suggested that a TBA is preferred over a midwife who is young, unmarried girl and without children. This trend is more common in countries where fresh CMWs are recently deployed such as Pakistan (15,16). Another reason for the community acceptance of TBAs is that they are affordable option than professional midwives and she often accepts payment in kind (17). Moreover, TBAs are always happy to make house visits, warranting mother's privacy.

Pakistan is among the few countries in South Asia that continues to have dismal maternal and child health indicators. In Pakistan, Maternal Mortality Ratios (MMR) is high, ranging from 240 to 700 per 100,000 live births. The top three causes of maternal death are postpartum hemorrhage, eclampsia and sepsis. Approximately two-thirds of all births (61%) take place at home due to limited access to health facilities. Home based deliveries are usually attended by the TBA and now newly deployed community midwives in some rural parts of the country (18). While some maternity care indicators appear to have improved over the last two decades, women's access to prenatal health care continues to be low in Pakistan18.

Realizing the need for community health work force, Government of Pakistan launched the national MNCH program in 2006 to help the rural women deliver safely (19). Although the program has been successful in countries such as Malaysia and Indonesia, challenges faced by the CMW program of Pakistan are multifaceted. These challenges are related to acceptance by community, competition with other service providers, weak referral system, inadequate skill set and lack of community involvement (20).

The intervention

To address health system constraints, Chitral Child Survival Program (CCSP) of Aga Khan Foundation Pakistan (AKF-P) deployed CMWs, supported community financing scheme, improved referral linkages and implemented a behavior change communication campaign from 2008-2014. CCSP was implemented in close partnership of Department of Health, Khyber Pakhtunkhwa, Aga Khan Health Services ~~(AKHSP),~~

Pakistan (AKHSP), and Aga Khan Rural Support Program (AKRSP). The CCSP interventions, especially the role of community based saving groups, village health committees (VHCs) and community based emergency maternal referral mechanism to achieve project results showed that CCSP had attempted to engage the TBAs proactively. The project empowered TBAs on Birth Preparedness and Complications Readiness (BPCR) plans and integrated referral mechanisms. Involvement of TBAs in the project was meaningful to generate the community acceptability for young CMWs, identification of high risk cases, and referrals of complications to CMW and transporting pregnant woman to health facility in time.

This research endeavored to identify the role of TBAs in supporting the MNCH care, partnership mechanism with the formal health system and also explored livelihood options for TBAs.

Methodology

a) Study site

The study was conducted in Chitral district, north western border of Pakistan, from March-April 2014. The population of the intervention area is 200,000, about 57% of the total population of the district and residing in 243 villages. The government department of health and Aga Khan Health Services Pakistan (AKHSP) are the two primary formal sector healthcare providers in Chitral. The public-sector healthcare infrastructure in the district includes 22 civil dispensaries, 21 basic health units; three tehsil headquarters and one district headquarter hospital (21). AKHSP operates its own 32 health facilities in Chitral which include 17 health centers, eight family health centers, four dispensaries and three secondary care facilities, covering 60% of Chitral district. The MMR in the province is 275/100,000 live births; whereas under five mortality is 75/1000 live births (18~~19~~). Despite the presence of skilled birth attendants under MNCH program, large proportion of the deliveries is still attended by TBAs in Chitral district.

b) Study Design and data collection

The project documents and other relevant studies were thoroughly reviewed and the collated information guided to design the qualitative data collection instruments. A qualitative exploratory

study entailed seven KIIs and four FGDs conducted with different study participants. The questions for focus group discussion (FGD) and key informants interview (KIIs) explore the ~~Field guides included open ended questions, covering topics such as~~ role of TBAs in supporting MNCH care and CCSP project activities, community experience with TBAs, TBAs' relationship and coordination with the CMWs, referral of cases; remuneration and livelihood sources of TBAs; ways to engage TBAs in continuum of care, working relationships and linkages with the formal health system, and sustainability/livelihood of TBAs. Using a participation diagram in FGDs, it was ensured that all the participants must speak on each question. To ensure quality control, information collected through note-taking was cross-checked for completeness and consistency before and during data processing by the research team.

c) Study participants

All the study participants were purposively sampled from the intervention areas in the district, with the help of the implementing agencies on ground. Community based health workers i.e. CMWs and TBAs; members of VHC and Community Based Saving Group (CBSG) were included in the discussion. The participants were encouraged by the moderator (PI) to interact with each other and comment on experiences and perceptions regarding role of TBAs, partnership with formal health system, and livelihood of TBAs. KIIs were conducted with two government health managers, two AKF-P managers, and three AKHSP managers. All the FGDs were conducted in the community; whereas KIIs were conducted in the respective offices of health managers. Table-1 presents the detail of the methods employed for the study.

Table-1: Detail of methods employed in qualitative study

Cadre	Method	Total number of respondents	~~Area~~Village
CMWs	FGD	10	Mori Lshat, Barini, Awi, Miragarm, Sore Laspoor, Raman, Terich Payeen, Lot Owir Bala, Lot Owir Payeen, Gohkir, Parsan, Owir Lasht Arkari, Besti Arkari, Khuz, Phashk
TBAs	FGD	5	Lower Porth, Brock Kalaway, Porth Bala, Raman, Brock Baraman Deh
VHC	FGD	8	Morder

CBSG	FGD	10	Morder
Health managers (AKHSP, AKF-P & ~~DHD~~Government)	7 KIIs	07	Chitral city

Purposive sampling technique was adopted, inviting the participation of those CMWs, and TBAs who had been serving actively in their local communities for the last two years. These health workers were identified with the help of health managers of AKHSP and government. Likewise, only those members of VHC were invited for FGD, who had been active for the last two years. Each participant of the FGD and KII was given the verbal information about the study by the research team and was given a consent form prior to participation.

d) Data analysis

A qualitative content analysis was applied to analyze the information manually from all the FGDs and KIIs. A stepwise approach was adopted for the content analysis. The analysis aimed at finding manifest and latent meaning of data. The transcribed data was initially read several times by the principal researcher in order to find the sense of the whole. At first stage the segmentation of information was done i.e. segments and sub-segments of information were organized. Subsequently the significant information was extracted which was related to research questions. At second stage the common views of the respondents were put together at one place. At third stage, data was coded (different responses highlighted) and then these codes were grouped into categories and abstracted into sub-themes and a main theme. At final stage, the meanings of themes/descriptions were interpreted by keeping in view and considering the cultural context of the participants.

Results

The main theme which came out was the "emerging role of TBAs to improve Maternal, Newborn and Child Health". After content analysis, following sub-themes were identified as shown in Table 2:

1. Community experience with CMWs and TBAs
2. View of participants on utilization of TBAs in formal health system

3. Role of TBAs in supporting obstetric care
4. Linkages and coordination among TBAs and CMWs
5. Livelihood of TBAs

Table-2: Matrix of qualitative research analysis

Nodes	Sub-nodes
Community experience with CMWs and TBAs	- Availability of CMWs have empowered women for health care seeking - Community has trust and faith in TBAs and their services
Linkage of TBAs with formal health system	-TBAs have pivotal role in health promotion activities such as health messages on breast feeding, mother and child immunization. -TBAs must assist CMW who is naïve to reproductive health matters. -TBAs can be involved in linking high risk cases to CMW and health facility.
Role of TBAs in supporting obstetric care	- TBAs ~~promote health messages for expecting mothers,~~ assist CMW in delivery, identify expectant mothers with high risks, refer such cases to formal health system, and support post-natal care
Linkages and coordination among TBAs and CMWs	- Mixed responses in terms of relationship between CMWs and TBAs - VHC is an active forum for coordination - Coordination is better at places where TBA gets some share of CMW income
Livelihood of TBAs	- CMWs could offer some incentives to TBAs to strengthen referrals and assistance in skilled delivery - VHCs decide TBA incentive share of CMW income - Community pay in kind contribution to recognize services of TBA

Formatted: Left, Space After: 10 pt, Line spacing: Multiple 1.15 li, Adjust space between Latin and Asian text, Adjust space between Asian text and numbers

Community experience with CMWs and TBAs

Availability of CMWs and the supportive role of TBAs in obstetric care ~~has~~have benefited communities, by and large. Most of the respondents shared that availability of CMWs has empowered women in order to seek essential and emergency obstetric care in rural communities. Members of VHC appreciated the binding relation of CMWs with TBAs. Despite availability of CMWs, the community members still have greater trust and faith in TBAs who live and deals with the village women since ages. Some of the respondents told that they avail services of TBAs due to her rich experience as compared to CMWs who are young and yet naïve to various reproductive health matters.

"TBA still has the critical role as being more in proximity to the village women. She enjoys far more trust of the communities. She has a years' long rapport with the families. People tend to follow her advice." (Director Health, AKF-P)

"I consider the role of TBAs important for two reasons; firstly they have been trusted by the communities, so they need to be taken on board for enhancing referrals to CMWs. Secondly, if they are not engaged properly then they will do more harm by doing deliveries and might spread negative propaganda too about the CMWs". (KII-AKF-P Senior Program Officer)

"I take my wife and child to CMW to see for medical help or treatment for maternal and child health problems? In our village, Dai (TBA) enjoys good relationship with the CMW". (FGD-VHC, Morder)"

"My family often seeks services from a TBA…she has all the experience." (FGD-VHC, Morder)

"The TBAs are working since long time and they have developed trust in the communities". (KII, AKHSP Manager)

Linkage of TBAs with formal health system

TBAs have pivotal role in health promotion activities such as health messages on nutrition, breast feeding, and vaccination promotion. Viewpoints of participants revealed that TBAs can be mainstreamed in a formal health system by assigning health promotion activities and for referring high risk cases to CMW and health facility.

"The TBAs have role in referring of high risk cases and expectant mothers for delivery to CMWs. TBAs are also playing very good role in the community in identifying pregnant mothers during 1st trimester in the community, arranging TT vaccinations and providing education on nutrition during pregnancy." (GM, AKHSP)

"They (TBAs) must be linked with the formal health system especially for health promotion, referrals and assisting deliveries with CMWs, when needed" (FGD-VHC, Morder)

Role of TBAs in supporting obstetric care

TBAs have pivotal role in terms of identifying pregnancy related complications and assisting safe obstetric care services with CMWs. Traditionally, TBAs have been involved in the promotion of better nutrition practices for pregnant mothers, breastfeeding practices, TT vaccination of expectant mothers, prevention of neonatal hypothermia, and post-natal care including family planning. TBAs have a crucial role in strengthening referral and coordination mechanisms with CMWs and with the health facility. Findings of the KIIs and FGDs revealed that some TBAs were even involved in assisting deliveries with CMWs.

"Many TBAs, no doubt have a sound folk wisdom, which can be used for various health promotion messages, especially where there is no other community health worker. Moreover, TBAs can be trained in providing antenatal care, TT vaccine, Misoprostol administration, recognizing the danger signs of pregnancy etc. This will give her a feeling that she still has a role to play in saving women's lives." (Director Health, AKF-P)

"TBAs promote breastfeeding and healthy nutritional practices in our community for mother and children; and they can keep on doing that". (FGD-VHC, Morder)

"In my village, TBA assists delivery with me and refers cases to me. I have to say that she is of great help for me". (FGD-CMWs, Parsan)

"They (TBAs) said, they do refer cases to them and in many cases have joined CMWs for conducting deliveries." (KII-AKF-P Senior Program Officer)

Linkages and coordination mechanisms among TBAs and CMWs

~~Mixed responses were recorded with regards to linkages and coordination among TBAs and CMWs. There is no formal referral mechanism between TBAs and the CMWs.~~ Lack of role clarity, physical inaccessibility, professional rivalry and few income opportunities are key factors for weak linkages between TBAs and CMWs. Some of the CMWs expressed that they encountered problems and resistance from the TBAs and community during the initial phase of deployment. Village health committee shared that they invite both TBAs and CMWs in the VHC meetings. Performance of TBAs vis-à-vis skills related to maternal and newborn health is not satisfactory. Therefore, they now go to the CMWs who have adequate competency in knowledge and skills about the obstetric care. Some of the members shared that TBAs refer complicated expectant mothers to CMWs and health facility. In few instances, TBA was seen to be assisting the CMW in deliveries.

"Rivalry; both are birth attendants; one is practicing by virtue of folk knowledge and the other is trained according to modern guidelines and WHO standards. So that has created a competition. At places, there is coordination too, where both are from the same family or where both have realized each other's importance." (Director Health, AKF-P)

"The issues between TBA and CMW can be effectively dealt if AKHSP works with all stakeholders and set out a proper coordination plan, and play catalytic role to nurture a health relationship." (KII-AKF-P, Senior Program Officer)

"In some areas of intervention, the TBA perceived CMW as competitor." (GM, AKHSP)

"Introduction of CMWs in the areas will limit the role of TBAs. To cope with this challenge the TBAs were included in the VHCs and the roles/responsibilities of the CMWs were communicated through this platform". (KII, AKRSP Manager)

"Many TBAs are in favor of CMWs because they cannot handle the complicated cases properly; yet some are against her. VHC is trying to bring the TBA as member in VHC and told them about the importance of deliveries by skilled hand and hygienic way." (FGD-VHC, Morder)

According to CMWs, they have high regard for the TBA, her experience and wisdom. They feel that TBA can complement their work. On the other hand, most TBAs are satisfied with CMWs work, skills and services rendered to the community women. Very few seem to be unhappy indeed.

Livelihood and sustainability of TBAs

Supporting role of TBAs is very important; especially in context of difficult geographical terrains in Chitral. Various options as well as mechanisms were identified by the respondents, when asked about livelihood prospects of TBAs. Most of the respondents were of opinion that CMWs must pay some incentives to TBAs to strengthen referrals and assistance in skilled delivery. Findings of the KII revealed that one of the available forums to decide TBAs incentives is village committee. VHCs and other available forums such as Local Support organizations (LSOs) can play pivotal role in taking up such decisive role for supporting livelihood options for TBAs. Regarding payment to TBAs, some of the CMWs did not recompense TBAs. Some of the TBAs also told that they get in kind contributions and support for her services from the village families and not from the CMWs.

"It is an informal arrangement between the two of them. Officially there is no binding on the CMW to pay TBA for referrals." (Director Health, AKF-P)

"One of the CMW referred two cases to CMWs, and in fact she did join her for conducting the deliveries, but in return did not get anything from the CMW and the family too." (KII-AKF-P, Senior Program Officer)

"Let it be the VHC meeting to decide about some incentives to be given to TBAs from CMW fee, because she will be referring every case to CMW. CMW should provide some money to TBA". (KII, AKHSP Manager)

"TBAs were providing delivery services before CMWs' deployment; hence CMWs' services will certainly affect their regular income (in cash or in kind). CMW should give incentive from her service fee to TBAs on each referral; whereas TBA can continue providing care to mother after delivery". (KII, Manager Programs, AKHSP)

"In our area, CMW is paying Rs200 to the TBA for each referral". (FGD-VHC, Morder)

"In two cases, I assisted CMW for delivery of a mother. CMW did not give me any money. I got some cash and chicken from the house of delivered mother". (FGD-TBA, Lower Porth)

Discussion

Though communities where CMWs are deployed after training are happy, yet t~~T~~he continued utilization of TBAs' services in Chitral. Fact ~~-~~is attributed to several factors including the TBAs' proximity to several villages, TBAs' respectful attitude toward the community, and flexible modes of payment (22,23). CMWs have been recently deployed in Chitral and experienced challenges and constraints by community based health providers and community itself in delivery of maternal health services (24,25). Evidence suggests that health management committees at the village level have been effective in reducing maternal complications through promoting linkages of health care providers with the community (26). The findings of our study also revealed that community forum in the form of VHC has played pivotal role in convincing the communities to avail CMW services and motivate the TBA to continue in supportive role in MNCH care. ~~linking TBAs and CMWs with the community members.~~ Awareness sessions have to be conducted on regular basis and on different forums to better inform the elder women and expecting mothers about the benefits of making use of skilled birth attendant i.e. CMW.

Results of our study found that TBAs play vital role in improving maternal health such as diagnosing labor, assisting clean delivery with CMWs, detecting and referring maternal complications, and promoting health messages. While trained TBAs are not considered skilled birth attendants, their potential contribution in supporting maternal care has been recognized in low income and middle countries facing issues of human response scarcity (12,**Error! Bookmark not defined.**~~13~~). Role of TBAs in administration

of misoprostol to prevent postpartum hemorrhage in home-births is oft-advocated (27,28). Nevertheless, the role of TBAs in supporting MNCH care cannot be neglected in settings where skilled birth attendants are fewer and new to health system. In the wake of reforms and the novel MNCH program of Pakistan, role of TBAs in improving maternal care and transforming health seeking behaviours ought to be promoted (29). Defining her role and contribution in the continuum of care is linked to her livelihood and income generation.

Improved linkages and relationship among CMWs and TBAs is of essence to flourish referral system from community to health facility. Better coordination and collaboration of TBAs with CMWs was promoted under CCSP, by sensitizing the CMW on prospective role of TBA which will complement her services and will help in building her rapport with the community. TBA, who has a long standing link with local community, can act as a bridge to strengthen referral mechanism between community and the formal health system (15~~21~~). Findings of the qualitative study follow other studies which demonstrated that a formal partnership program among TBAs and the skilled midwives has yet to be seen (5~~6~~). While the importance of the TBAs role in referral is universally acknowledged, most health systems have not developed an effective referral mechanism. The CCSP project provided an enabling forum at the village level for CMWs and TBAs to interact and improve referral linkages. Such partnership is crucial to improve access to health care services, especially for communities living in the remote areas. Nevertheless, training and monitoring TBAs on MNCH care is imperative to minimize chances of malpractices (13). Therefore, joint monitoring by AKHSP and government, by involving the village health committees could be instrumental in this regard. Moreover, participatory monitoring is always less threatening; and hence TBAs should be meaningfully engaged in such type of monitoring.

Financial constraints are a major risk to the livelihood of TBAs as evident from the findings of our study. Mostly they are receiving in kind payments by the family of expectant mothers; and a nominal payment by CMWs for each referral. CMWs must keep a cushion of nominal payment to TBA, after verifying her services. That will surely help in building a healthy relationship amongst the two service providers. Where TBAs did not receive any share from the CMWs, we found weak coordination mechanisms with the formal

health system. Evidence suggests that in kind contributions by clients are the most common mode of payment by the clients (8,9,10,11). With the increasing use of TBAs in MNCH care, the question of compensation has become more pressing because these workers usually rely on rewards and in kind contributions by the clients (30). Continuing efforts to define the role of TBAs may benefit from an emphasis on their potential as active promoters of essential newborn care (31). In the context of Pakistan, the role of TBAs ought to be revisited and redefined, not only for the sake of trust of communities on her services, but also for her own livelihood.

Conclusion

Prevailing poverty in the area calls for thinking solutions to ensure livelihood of TBAs, and to figure out an emerging role for her after the introduction of CMW in the health system. TBAs surely have solutions in the continuum of care for pregnant women, lactating mothers and children under five. They continue to take pride and see value in their role in the health system to support MNCH care. Health systems performance can be amplified by having a healthy interface between the TBAs and CMWs, and for the larger benefit of the communities served.

Acknowledgement:

The authors acknowledge the facilitation and assistance provided by AKF-P, AKHSP and AKRSP to carry out field data collection.

Ethical consideration:

Ethics approval for this study was granted by the Institutional Review Board of Aga Khan Health Services, Pakistan. Verbal informed consent was obtained from all the study participants, after explaining the objectives of the study. Confidentiality and anonymity was assured to all the participants. Data was kept under lock and key with the principal researcher.

Authors' contributions

BTS and SAK conceived the study design and instruments. AM supervised the data collection and helped in analyses. BTS and SAK drafted the successive drafts of paper. SA conducted the critical review and added the intellectual content to the paper. All authors read and approved the final draft.

Funding: The study was a part of larger project "Chitral Child Survival Program" funded by USAID.

Competing Interests

The authors declare that they have no competing interests.

References

1. World Health Organization & UNICEF. Countdown to 2015 and beyond: fulfilling the health agenda for women and children. Geneva: 2014.
2. Shaikh BT. Marching toward the Millennium Development Goals: What about health systems, health-seeking behaviours and health service utilization in Pakistan? *World Health & Popul* 2008; 10(2): 44-52.
3. United Nations. Road map towards the implementation of the United Nations Millennium Declaration: report of the Secretary-General. New York: 2001.
4. Sachs JD, McArthur JW. The Millennium Project: a plan for meeting the Millennium Development Goals. *Lancet* 2005; 365(9456):347-53.
5. Titaley CR, Hunter CL, Dibley MJ, Heywood P. Why do some women still prefer traditional birth attendants and home delivery? A qualitative study on delivery care services in West Java Province, Indonesia. *BMC Pregnancy Childbirth* 2010; 10:43.
6. Lassi ZS, Haider BA, Bhutta ZA. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. *Cochrane Database Syst Rev* 2010; 11: CD007754.
7. Garces A, McClure EM, Chomba E, Patel A, Pasha O, Tshefu A. Home birth attendants in low income countries: who are they and what do they do? *BMC Pregnancy Childbirth* 2012; 12:34.

8. Byrne A, Morgan A. How the integration of traditional birth attendants with formal health systems can increase skilled birth attendance. *Int J Gynaecol Obstet* 2011; 115(2):127-34.
9. Ray AM, Salihu HM. The impact of maternal mortality interventions using traditional birth attendants and village midwives. *J Obstet Gynaecol* 2004; 24(1):5-11.
10. Agarwal S, Sethi V, Srivastava K, Jha PK, Baqui AH. Birth preparedness and complication readiness among slum women in Indore City, India. *J Health Nutr Popul* 2010; 28(4): 383-391.
11. Wilson A, Gallos ID, Plana N, Lissauer D, Khan KS, Zamora J, et al. Effectiveness of strategies incorporating training and support of traditional birth attendants on perinatal and maternal mortality: meta-analysis. *BMJ* 2011; 343:d7102.
12. Sibley LM, Sipe TA. Transition to skilled birth attendance: Is there a future role for trained traditional birth attendants. *J Health Popul Nutr* 2006; 24(4):472-8.
13. Bisika T. The effectiveness of the TBA programme in reducing maternal mortality and morbidity in Malawi. *East Afr J Public Health* 2008; 5(2):103–10.
14. Chalo RN, Salihu HM, Nabukera S, Zirabamuzaale C. Referral of high-risk pregnant mothers by trained traditional birth attendants in Buikwe County, Mukono District, Uganda. *J Obstet Gynaecol* 2005; 25(6):554-7.
15. Temesgen TM, Umer JY, Buda DS, Haregu TN. Contribution of traditional birth attendants to the formal health system in Ethopia: the case of Afar region. *Pan Afr Med J* 2012; 13(Suppl 1):15.
16. Wajid A, Rashid Z, Mir AM. Initial assessment of Community Midwives in rural Pakistan. PAIMAN. JSI Research and Training Institute, Inc; Islamabad: 2010.
17. Concern Worldwide. Examining the role of traditional birth attendants in the continuum of care in Sierra Leone. Innovations for maternal, newborn and child health. Policy Brief. Concern Worldwide; New York: 2013.
18. National Institute of Population Studies and Macro International Inc. Pakistan Demographic and Health Survey (PDHS) 2006–07. Government of Pakistan; Islamabad: 2008.
19. Government of Pakistan. PC1 National Maternal Newborn & Child health Program 2006-2012. Ministry of Health, Government of Pakistan; Islamabad: 2009.

20. Research and Development Solutions. The community midwives program in Pakistan. Policy Brief Series No 20. Islamabad: 2012.
21. Department of Health. District health profile-Chitral. Government of Khyber Pakhtunkhwa; Peshawar: 2014.
22. Chesney M, Davies S. Women's birth experiences in Pakistan – the importance of the Dai. The Royal College of Midwives. *Evid Based Midwifery* 2005; 3(1):26-32.
23. Owolabi OO, Glenton C, Lewin S, Pakenham-Walsh N. Stakeholder views on the incorporation of traditional birth attendants into the formal health systems of low-and middle-income countries: a qualitative analysis of the HIFA2015 and CHILD2015 email discussion forums. *BMC Pregnancy Childbirth* 2014; 14:118.
24. Sarfraz M, Hamid S. Challenges in delivery of skilled maternal care-Experiences of community midwives in Pakistan. *BMC Pregnancy Childbirth* 2014; 14:59.
25. Research and Advocacy Fund/Children First. How far can I go? Social mobility of CMWs in Azad Kashmir. Islamabad: 2012.
26. Morrison J, Tumbahangphe KM, Budhathoki B, Neupane R, Sen A, Dahal K, et al. Community mobilization and health management committee strengthening to increase birth attendance by trained health workers in rural Makwanpur, Nepal: study protocol for a cluster randomized controlled trial. *Trials* 2011; 12:128.
27. Walraven G, Blum J, Dampha Y, Sowe M, Morison L, Winikoff B, et al. Misoprostol in the management of the third stage of labour in the home delivery setting in rural Gambia: a randomized controlled trial. *Br J Obstet Gynaecol* 2005; 112: 1277-83.
28. Mobeen N, Durocher J, Zuberi N, Jahan N, Blum J, Wasim S, et al. Administration of misoprostol by trained traditional birth attendants to prevent postpartum hemorrhage in homebirths in Pakistan: a randomized placebo-controlled trial. *BJOG* 2011; 118(3):353-61.
29. Shaikh BT, Haran D, Hatcher J. Women's social position and health-seeking behaviors: Is the health care system accessible and responsive in Pakistan? *Health Care Women Int* 2008; 29:945-959.

30. Gill CJ, Phiri-Mazala G, Guerina NG, Kasimba J, Mulenga C, MacLeod WB. Effect of training traditional birth attendants on neonatal mortality (Lufwanyama Neonatal Survival Project): randomized controlled study. *BMJ* 2011; 342:d346.

31. Falle TY, Mulany LC, Thatte N, Khatry SK, LeClerg SC, Darmstadt GL, et al. Potential role of traditional birth attendants in neonatal healthcare in rural southern Nepal. *J Health Popul Nutr* 2009; 27(1): 53–61.

BMJ Open

Emerging role of traditional birth attendants in mountainous terrain: A qualitative exploratory study from Chitral District, Pakistan

Journal:	*BMJ Open*
Manuscript ID:	bmjopen-2014-006238.R2
Article Type:	Research
Date Submitted by the Author:	20-Oct-2014
Complete List of Authors:	Shaikh, Babar; Aga Khan Foundation, Pakistan, Health & Built Environment Khan, Sharifullah; Aga Khan Foundation, Health & Built Environment Maab, Ayesha; Aga Khan Foundation, Health & Built Environment Amjad, Sohail; Aga Khan Foundation, Health & Built Environment
Primary Subject Heading:	Health services research
Secondary Subject Heading:	Health policy, Obstetrics and gynaecology, Public health, Qualitative research, Reproductive medicine
Keywords:	Health policy < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Organisation of health services < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, Public health < INFECTIOUS DISEASES

Emerging role of traditional birth attendants in mountainous terrain: A qualitative exploratory study from Chitral District, Pakistan

Babar Tasneem Shaikh, MPH, PhD, FRCP Edin

Sharifullah Khan, MPH

Ayesha Maab, MSc

Sohail Amjad, MA-HM, MA-HMPP

Running title: Role of traditional birth attendants

Corresponding author

Dr Babar Tasneem Shaikh

Aga Khan Foundation (Pakistan)

Level Nine, Serena Business Complex

Khayaban-e-Suharwardy, Islamabad

t: +92 51 111-253-254

f: +92 51 2072552

e: shaikh.babar@gmail.com

Abstract:

Objectives: This research endeavors to to identify the role of TBAs in supporting the MNCH care, partnership mechanism with the formal health system and also explored livelihood options for TBAs in the health system of Pakistan.

Setting: The study was conducted in District Chitral, Khyber Pakhtunkhwa province, covering the areas where Chitral Child Survival programme was implemented.

Participants: A qualitative exploratory study was conducted, comprising seven Key informant interviews (KIIs) with health managers, and four focus group discussions (FGDs) with CMWs, TBAs, members of CBSG and members of Village Health Committees (VHCs).

Results: The study identified that In the new scenario, after the introduction of CMW in the health system, TBAs still have a pivotal role in health promotion activities such as breast feeding promotion and vaccination. TBAs can assist CMWs in normal deliveries, and refer high risk cases to formal health system. Generally, TBAs are positive about CMWs' introduction and welcome this addition. Yet, their livelihood has suffered after CMWs deployment. Monetary incentives to them in recognition of referrals to CMWs could be one solution. VHC is an active forum for strengthening coordination between the two service providers and to ensure an alternate and permanent livelihood support system for the TBAs.

Conclusion: TBAs assured their continued support in provision of continuum of care for pregnant women, lactating mothers and children under five. The district health authorities must figure out ways to foster a healthy interface vis-à-vis roles and responsibilities of TBAs and CMWs. After some time, it would be worthwhile to do further research to look into the CMW's integration in the system, as well as TBA's continued role for provision of MNCH care.

Keywords: Maternal Newborn & Child Health, Traditional birth attendant, Community midwife, Qualitative research, Pakistan.

Strengths & Limitations of the study

A study, first of its kind, which has expounded on the subject of TBAs role and livelihood after the introduction of trained MNCH providers in Pakistan. Use of qualitative methods provided rich insight into women's interpretations and decision-making regarding health care seeking during and after pregnancy in a relatively conservative setting of Pakistan. Study presents views of all stakeholders involved in the intervention.

The findings represent a specific sample size, study site and socio-cultural milieu and therefore may not be generalized for the entire province or country. Health providers involved in the study were mainly from AKHSP and government who were already exposed to this intervention. Only few TBAs could be gathered for discussion, because most of them were remotely located, and weather and family constraints did not allow them to travel. Moreover, the prospective role of TBA is discussed in a special context, whereby a CMW was trained and deployed in the area for increasing skilled birth attendance.

Introduction

Despite all advances toward MDGs 4 & 5, every year 6.6 million children die before five years of age (44% as newborns) and 289,000 maternal deaths occur, mostly from preventable causes (1). This state of affairs has raised serious global concern over the years in developing countries to ensure availability and accessibility of human resources for ensuring continuum of care for expecting mothers. Uniform availability and distribution of skilled birth attendants is critical to consider while looking at health service utilization trends (2). The Millennium Declaration in 2000 signed by 189 nations, recognized proportion of births assisted by trained birth as an important indicator to track maternal and child survival indicators (3,4). To increase the availability and accessibility of maternal and child health care services, training of TBAs and strengthening the partnership between community midwives (CMWs) and TBAs is widely acknowledged worldwide (5,6). Nonetheless, role of the TBAs cannot be effective in a weak primary health care system and in an unplanned referral mechanism (7).

In order to attain MDG-5, isolated interventions are not able to reduce maternal mortality sufficiently. It is important to review strategies to maximize strengths of TBAs as well and skilled birth attendants. Evidence suggests that skilled birth attendance has increased in regions where TBAs are integrated with the formal health system (8). However, integration of TBAs with the formal health system may require capacity development and supervision of TBAs, collaboration skills for health workers, involvement of TBAs at health facilities and, improved capacity on communication and referral systems. With this approach, TBAs may positively contribute to maternal and child health outcomes (9). Trainings of the TBAs not only enhance their knowledge and skills on obstetric care and referral mechanism, but also lead to greater community acceptance and a greater consumer satisfaction. They can play a vital role in birth preparedness and identification of danger signs (10). Training of TBAs has shown impact on perinatal and neonatal deaths which can be significantly reduced (11). Moreover, TBAs have been a critical contributor in providing skilled maternal, newborn and child health (MNCH) care in rural population of developing countries due to inadequate numbers of human resource for service delivery (12). Therefore, role of trained TBAs in healthcare provision cannot be undermined. Developing countries have used TBAs as a key strategy to improve maternal and child health care (13). They have been effective in

improving referral mechanism and links with the formal health care system (14). Literature review has suggested that a TBA is preferred over a midwife who is young, unmarried girl and without children. This trend is more common in countries where fresh CMWs are recently deployed such as Pakistan (15,16). Another reason for the community acceptance of TBAs is that they are affordable option than professional midwives and she often accepts payment in kind (17). Moreover, TBAs are always happy to make house visits, warranting mother's privacy.

Pakistan is among the few countries in South Asia that continues to have dismal maternal and child health indicators. In Pakistan, Maternal Mortality Ratios (MMR) is high, ranging from 240 to 700 per 100,000 live births. The top three causes of maternal death are postpartum hemorrhage, eclampsia and sepsis. Approximately two-thirds of all births (61%) take place at home due to limited access to health facilities. Home based deliveries are usually attended by the TBA and now newly deployed community midwives in some rural parts of the country (18). While some maternity care indicators appear to have improved over the last two decades, women's access to prenatal health care continues to be low in Pakistan18.

Realizing the need for community health work force, Government of Pakistan launched the national MNCH program in 2006 to help the rural women deliver safely (19). Although the program has been successful in countries such as Malaysia and Indonesia, challenges faced by the CMW program of Pakistan are multifaceted. These challenges are related to acceptance by community, competition with other service providers, weak referral system, inadequate skill set and lack of community involvement (20).

The intervention

To address health system constraints, Chitral Child Survival Program (CCSP) of Aga Khan Foundation Pakistan (AKF-P) deployed CMWs, supported community financing scheme, improved referral linkages and implemented a behavior change communication campaign from 2008-2014. CCSP was implemented in close partnership of Department of Health, Khyber Pakhtunkhwa, Aga Khan Health Services Pakistan

(AKHSP), and Aga Khan Rural Support Program (AKRSP). The CCSP interventions, especially the role of community based saving groups, village health committees (VHCs) and community based emergency maternal referral mechanism to achieve project results showed that CCSP had attempted to engage the TBAs proactively. The project empowered TBAs on Birth Preparedness and Complications Readiness (BPCR) plans and integrated referral mechanisms. Involvement of TBAs in the project was meaningful to generate the community acceptability for young CMWs, identification of high risk cases, and referrals of complications to CMW and transporting pregnant woman to health facility in time.

This research endeavored to identify the role of TBAs in supporting the MNCH care, partnership mechanism with the formal health system and also explored livelihood options for TBAs.

Methodology

a) Study site

The study was conducted in Chitral district, north western border of Pakistan, from March-April 2014. The population of the intervention area is 200,000, about 57% of the total population of the district and residing in 243 villages. The government department of health and Aga Khan Health Services Pakistan (AKHSP) are the two primary formal sector healthcare providers in Chitral. The public-sector healthcare infrastructure in the district includes 22 civil dispensaries, 21 basic health units; three tehsil headquarters and one district headquarter hospital (21). AKHSP operates its own 32 health facilities in Chitral which include 17 health centers, eight family health centers, four dispensaries and three secondary care facilities, covering 60% of Chitral district. The MMR in the province is 275/100,000 live births; whereas under five mortality is 75/1000 live births (18). Despite the presence of skilled birth attendants under MNCH program, large proportion of the deliveries is still attended by TBAs in Chitral district.

b) Study Design and data collection

The project documents and other relevant studies were thoroughly reviewed and the collated information guided to design the qualitative data collection instruments. A qualitative exploratory

study entailed seven KIIs and four FGDs conducted with different study participants. The questions for focus group discussion (FGD) and key informants interview (KIIs) explore the role of TBAs in supporting MNCH care and CCSP project activities, community experience with TBAs, TBAs' relationship and coordination with the CMWs, referral of cases; remuneration and livelihood sources of TBAs; ways to engage TBAs in continuum of care, working relationships and linkages with the formal health system, and sustainability/livelihood of TBAs. Using a participation diagram in FGDs, it was ensured that nobody is missed out and that all the participants must speak on each question. To ensure quality control, information collected through note-taking was cross-checked for completeness and consistency before and during data processing by the research team.

c) Study participants

All the study participants were purposively sampled from the intervention areas in the district, with the help of the implementing agencies on ground. Community based health workers i.e. CMWs and TBAs; members of VHC and Community Based Saving Group (CBSG) were included in the discussion. The participants were encouraged by the moderator (PI) to interact with each other and comment on experiences and perceptions regarding role of TBAs, partnership with formal health system, and livelihood of TBAs. KIIs were conducted with two government health managers, two AKF-P managers, and three AKHSP managers. All the FGDs were conducted in the community; whereas KIIs were conducted in the respective offices of health managers. Table-1 presents the detail of the methods employed for the study.

Table-1: Detail of methods employed in qualitative study

Cadre	Method	Total number of respondents	Village
CMWs	FGD	10	Mori Lshat, Barini, Awi, Miragarm, Sore Laspoor, Raman, Terich Payeen, Lot Owir Bala, Lot Owir Payeen, Gohkir, Parsan, Owir Lasht Arkari, Besti Arkari, Khuz, Phashk
TBAs	FGD	5	Lower Porth, Brock Kalaway, Porth Bala, Raman, Brock Baraman Deh
VHC	FGD	8	Morder
CBSG	FGD	10	Morder

Health managers (AKHSP, AKF-P & Government)	7 KIIs	07	Chitral city

Purposive sampling technique was adopted, inviting the participation of those CMWs, and TBAs who had been serving actively in their local communities for the last two years. These health workers were identified with the help of health managers of AKHSP and government. Likewise, only those members of VHC were invited for FGD, who had been active for the last two years. Each participant of the FGD and KII was given the verbal information about the study by the research team and was given a consent form prior to participation.

d) Data analysis

A qualitative content analysis was applied to analyze the information manually from all the FGDs and KIIs. A stepwise approach was adopted for the content analysis. The analysis aimed at finding manifest and latent meaning of data. The transcribed data was initially read several times by the principal researcher in order to find the sense of the whole. At first stage the segmentation of information was done i.e. segments and sub-segments of information were organized. Subsequently the significant information was extracted which was related to research questions. At second stage the common views of the respondents were put together at one place. At third stage, data was coded (different responses highlighted) and then these codes were grouped into categories and abstracted into sub-themes and a main theme. At final stage, the meanings of themes/descriptions were interpreted by keeping in view and considering the cultural context of the participants.

Results

The main theme which came out was the “emerging role of TBAs to improve Maternal, Newborn and Child Health”. After content analysis, following sub-themes were identified as shown in Table 2:

1. Community experience with CMWs and TBAs
2. View of participants on utilization of TBAs in formal health system
3. Role of TBAs in supporting obstetric care
4. Linkages and coordination among TBAs and CMWs

5. Livelihood of TBAs

Table-2: Matrix of qualitative research analysis

Nodes	Sub-nodes
Community experience with CMWs and TBAs	- Availability of CMWs have empowered women for health care seeking - Community has trust and faith in TBAs and their services
Linkage of TBAs with formal health system	-TBAs have pivotal role in health promotion activities such as health messages on breast feeding, mother and child immunization. -TBAs must assist CMW who is naïve to reproductive health matters. -TBAs can be involved in linking high risk cases to CMW and health facility.
Role of TBAs in supporting obstetric care	- TBAs assist CMW in delivery, identify expectant mothers with high risks, refer such cases to formal health system, and support post-natal care
Linkages and coordination among TBAs and CMWs	- Mixed responses in terms of relationship between CMWs and TBAs - VHC is an active forum for coordination - Coordination is better at places where TBA gets some share of CMW income
Livelihood of TBAs	- CMWs could offer some incentives to TBAs to strengthen referrals and assistance in skilled delivery - VHCs decide TBA incentive share of CMW income - Community pay in kind contribution to recognize services of TBA

Community experience with CMWs and TBAs

Availability of CMWs and the supportive role of TBAs in obstetric care have benefited communities, by and large. Most of the respondents shared that availability of CMWs has empowered women in order to seek essential and emergency obstetric care in rural communities. Members of VHC appreciated the binding relation of CMWs with TBAs. Despite availability of CMWs, the community members still have greater trust and faith in TBAs who live and deals with the village women since ages. Some of the respondents told that they avail services of TBAs due to her rich experience as compared to CMWs who are young and yet naïve to various reproductive health matters.

"TBA still has the critical role as being more in proximity to the village women. She enjoys far more trust of the communities. She has a years' long rapport with the families. People tend to follow her advice." (Director Health, AKF-P)

"I consider the role of TBAs important for two reasons; firstly they have been trusted by the communities, so they need to be taken on board for enhancing referrals to CMWs. Secondly, if they are not engaged properly then they will do more harm by doing deliveries and might spread negative propaganda too about the CMWs". (KII-AKF-P Senior Program Officer)

"I take my wife and child to CMW to see for medical help or treatment for maternal and child health problems? In our village, Dai (TBA) enjoys good relationship with the CMW". (FGD-VHC, Morder)"

"My family often seeks services from a TBA…she has all the experience." (FGD-VHC, Morder)

"The TBAs are working since long time and they have developed trust in the communities". (KII, AKHSP Manager)

Linkage of TBAs with formal health system

Viewpoints of participants revealed that TBAs can be mainstreamed in a formal health system by assigning health promotion activities and for referring high risk cases to CMW and health facility.

"The TBAs have role in referring of high risk cases and expectant mothers for delivery to CMWs. TBAs are also playing very good role in the community in identifying pregnant mothers during 1st trimester in the community, arranging TT vaccinations and providing education on nutrition during pregnancy." (GM, AKHSP)

"They (TBAs) must be linked with the formal health system especially for health promotion, referrals and assisting deliveries with CMWs, when needed" (FGD-VHC, Morder)

Role of TBAs in supporting obstetric care

TBAs have pivotal role in terms of identifying pregnancy related complications and assisting safe obstetric care services with CMWs. Traditionally, TBAs have been involved in the promotion of better nutrition practices for pregnant mothers, breastfeeding practices, TT vaccination of expectant mothers, prevention of neonatal hypothermia, and post-natal care including family planning. TBAs have a crucial role in strengthening referral and coordination mechanisms with CMWs and with the health facility. Findings of the KIIs and FGDs revealed that some TBAs were even involved in assisting deliveries with CMWs.

"Many TBAs, no doubt have a sound folk wisdom, which can be used for various health promotion messages, especially where there is no other community health worker. Moreover, TBAs can be trained in providing antenatal care, TT vaccine, Misoprostol administration, recognizing the danger signs of pregnancy etc. This will give her a feeling that she still has a role to play in saving women's lives." (Director Health, AKF-P)

"TBAs promote breastfeeding and healthy nutritional practices in our community for mother and children; and they can keep on doing that". (FGD-VHC, Morder)

"In my village, TBA assists delivery with me and refers cases to me. I have to say that she is of great help for me". (FGD-CMWs, Parsan)

"They (TBAs) said, they do refer cases to them and in many cases have joined CMWs for conducting deliveries." (KII-AKF-P Senior Program Officer)

Linkages and coordination mechanisms among TBAs and CMWs

Lack of role clarity, physical inaccessibility, professional rivalry and few income opportunities are key factors for weak linkages between TBAs and CMWs. Some of the CMWs expressed that they

encountered problems and resistance from the TBAs and community during the initial phase of deployment. Village health committee shared that they invite both TBAs and CMWs in the VHC meetings.

"Rivalry; both are birth attendants; one is practicing by virtue of folk knowledge and the other is trained according to modern guidelines and WHO standards. So that has created a competition. At places, there is coordination too, where both are from the same family or where both have realized each other's importance." (Director Health, AKF-P)

"The issues between TBA and CMW can be effectively dealt if AKHSP works with all stakeholders and set out a proper coordination plan, and play catalytic role to nurture a health relationship." (KII-AKF-P, Senior Program Officer)

"In some areas of intervention, the TBA perceived CMW as competitor." (GM, AKHSP)

"Introduction of CMWs in the areas will limit the role of TBAs. To cope with this challenge the TBAs were included in the VHCs and the roles/responsibilities of the CMWs were communicated through this platform". (KII, AKRSP Manager)

Performance of TBAs vis-à-vis skills related to maternal and newborn health is not satisfactory. Therefore, they now go to the CMWs who have adequate competency in knowledge and skills about the obstetric care. Some of the members shared that TBAs refer complicated expectant mothers to CMWs and health facility. In few instances, TBA was seen to be assisting the CMW in deliveries. Nonetheless, where TBAs did not receive any share from the CMWs, we found weak coordination mechanisms with the formal health system.

"Many TBAs are in favor of CMWs because they cannot handle the complicated cases properly; yet some are against her. VHC is trying to bring the TBA as member in VHC and told them about the importance of deliveries by skilled hand and hygienic way." (FGD-VHC, Morder)

According to CMWs, they have high regard for the TBA, her experience and wisdom. They feel that TBA can complement their work. On the other hand, most TBAs are satisfied with CMWs work, skills and services rendered to the community women. Very few seem to be unhappy indeed.

Livelihood and sustainability of TBAs

Supporting role of TBAs is very important; especially in context of difficult geographical terrains in Chitral. Various options as well as mechanisms were identified by the respondents, when asked about livelihood prospects of TBAs. Most of the respondents were of opinion that CMWs must pay some incentives to TBAs to strengthen referrals and assistance in skilled delivery. Findings of the KII revealed that one of the available forums to decide TBAs incentives is village committee. VHCs and other available forums such as Local Support organizations (LSOs) can play pivotal role in taking up such decisive role for supporting livelihood options for TBAs. Regarding payment to TBAs, some of the CMWs did not recompense TBAs. Some of the TBAs also told that they get in kind contributions and support for her services from the village families and not from the CMWs.

"It is an informal arrangement between the two of them. Officially there is no binding on the CMW to pay TBA for referrals." (Director Health, AKF-P)

"One of the CMW referred two cases to CMWs, and in fact she did join her for conducting the deliveries, but in return did not get anything from the CMW and the family too." (KII-AKF-P, Senior Program Officer)

"Let it be the VHC meeting to decide about some incentives to be given to TBAs from CMW fee, because she will be referring every case to CMW. CMW should provide some money to TBA". (KII, AKHSP Manager)

"TBAs were providing delivery services before CMWs' deployment; hence CMWs' services will certainly affect their regular income (in cash or in kind). CMW should give incentive from her service fee to TBAs on each referral; whereas TBA can continue providing care to mother after delivery". (KII, Manager Programs, AKHSP)

"In our area, CMW is paying Rs200 to the TBA for each referral". (FGD-VHC, Morder)

"In two cases, I assisted CMW for delivery of a mother. CMW did not give me any money. I got some cash and chicken from the house of delivered mother". (FGD-TBA, Lower Porth)

Discussion

Though communities where CMWs are deployed after training are happy, yet the continued utilization of TBAs' services in Chitral. Fact is attributed to several factors including the TBAs' proximity to several villages, TBAs' respectful attitude toward the community, and flexible modes of payment (22,23). CMWs have been recently deployed in Chitral and experienced challenges and constraints by community based health providers and community itself in delivery of maternal health services (24,25). Evidence suggests that health management committees at the village level have been effective in reducing maternal complications through promoting linkages of health care providers with the community (26). The findings of our study also revealed that community forum in the form of VHC has played pivotal role in convincing the communities to avail CMW services and motivate the TBA to continue in supportive role in MNCH care. Awareness sessions have to be conducted on regular basis and on different forums to better inform the elder women and expecting mothers about the benefits of making use of skilled birth attendant i.e. CMW.

Results of our study found that TBAs play vital role in improving maternal health such as diagnosing labor, assisting clean delivery with CMWs, detecting and referring maternal complications, and promoting health messages. While trained TBAs are not considered skilled birth attendants, their potential contribution in supporting maternal care has been recognized in low income and middle countries facing issues of human response scarcity (12,**Error! Bookmark not defined.**). Role of TBAs in administration of misoprostol to prevent postpartum hemorrhage in home-births is oft-advocated (27,28). Nevertheless, the role of TBAs in supporting MNCH care cannot be neglected in settings where skilled birth attendants are fewer and new to health system. In the wake of reforms and the novel MNCH program of Pakistan, role of TBAs in improving maternal care and transforming health seeking behaviours ought to be promoted (29).

Defining her role and contribution in the continuum of care is linked to her livelihood and income generation.

Improved linkages and relationship among CMWs and TBAs is of essence to flourish referral system from community to health facility. Better coordination and collaboration of TBAs with CMWs was promoted under CCSP, by sensitizing the CMW on prospective role of TBA which will complement her services and will help in building her rapport with the community. TBA, who has a long standing link with local community, can act as a bridge to strengthen referral mechanism between community and the formal health system (15). Findings of the qualitative study follow other studies which demonstrated that a formal partnership program among TBAs and the skilled midwives has yet to be seen (5). While the importance of the TBAs role in referral is universally acknowledged, most health systems have not developed an effective referral mechanism. The CCSP project provided an enabling forum at the village level for CMWs and TBAs to interact and improve referral linkages. Such partnership is crucial to improve access to health care services, especially for communities living in the remote areas. Nevertheless, training and monitoring TBAs on MNCH care is imperative to minimize chances of malpractices (13). Nevertheless, this training should be imparted by the government in its public sector nursing and midwifery schools. However, joint monitoring by AKHSP and government, by involving the village health committees could be instrumental in this regard. Moreover, participatory monitoring is always less threatening; and hence TBAs should be meaningfully engaged in such type of monitoring. A systematic recording and periodic analysis of information could be conducted by the TBAs themselves, with the help of public health experts. The aim is to measure progress and to make any corrections en route.

Financial constraints are a major risk to the livelihood of TBAs as evident from the findings of our study. Mostly they are receiving in kind payments by the family of expectant mothers; and a nominal payment by CMWs for each referral. CMWs must keep a cushion of nominal payment to TBA, after verifying her services. That will surely help in building a healthy relationship amongst the two service providers. Where TBAs did not receive any share from the CMWs, we found weak coordination mechanisms with the formal health system. Evidence suggests that in kind contributions by clients are the most common mode of

payment by the clients (8,10). With the increasing use of TBAs in MNCH care, the question of compensation has become more pressing because these workers usually rely on rewards and in kind contributions by the clients (30). Continuing efforts to define the role of TBAs may benefit from an emphasis on their potential as active promoters of essential newborn care (31). In the context of Pakistan, the role of TBAs ought to be revisited and redefined, not only for the sake of trust of communities on her services, but also for her own livelihood.

Conclusion

Prevailing poverty in the area calls for thinking solutions to ensure livelihood of TBAs, and to figure out an emerging role for her after the introduction of CMW in the health system. TBAs surely have solutions in the continuum of care for pregnant women, lactating mothers and children under five. They continue to take pride and see value in their role in the health system to support MNCH care. Health systems performance can be amplified by having a healthy interface between the TBAs and CMWs, and for the larger benefit of the communities served.

Acknowledgement:

The authors acknowledge the facilitation and assistance provided by AKF-P, AKHSP and AKRSP to carry out field data collection.

Ethical consideration:

Ethics approval for this study was granted by the Institutional Review Board of Aga Khan Health Services, Pakistan. Verbal informed consent was obtained from all the study participants, after explaining the objectives of the study. Confidentiality and anonymity was assured to all the participants. Data was kept under lock and key with the principal researcher.

Authors' contributions

BTS and SAK conceived the study design and instruments. AM supervised the data collection and helped in analyses. BTS and SAK drafted the successive drafts of paper. SA conducted the critical review and added the intellectual content to the paper. All authors read and approved the final draft.

Funding: The study was a part of larger project "Chitral Child Survival Program" funded by USAID.

Competing Interests

The authors declare that they have no competing interests.

References

1. World Health Organization & UNICEF. Countdown to 2015 and beyond: fulfilling the health agenda for women and children. Geneva: 2014.
2. Shaikh BT. Marching toward the Millennium Development Goals: What about health systems, health-seeking behaviours and health service utilization in Pakistan? *World Health & Popul* 2008; 10(2): 44-52.
3. United Nations. Road map towards the implementation of the United Nations Millennium Declaration: report of the Secretary-General. New York: 2001.
4. Sachs JD, McArthur JW. The Millennium Project: a plan for meeting the Millennium Development Goals. *Lancet* 2005; 365(9456):347-53.
5. Titaley CR, Hunter CL, Dibley MJ, Heywood P. Why do some women still prefer traditional birth attendants and home delivery? A qualitative study on delivery care services in West Java Province, Indonesia. *BMC Pregnancy Childbirth* 2010; 10:43.
6. Lassi ZS, Haider BA, Bhutta ZA. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. *Cochrane Database Syst Rev* 2010; 11: CD007754.
7. Garces A, McClure EM, Chomba E, Patel A, Pasha O, Tshefu A. Home birth attendants in low income countries: who are they and what do they do? *BMC Pregnancy Childbirth* 2012; 12:34.

8. Byrne A, Morgan A. How the integration of traditional birth attendants with formal health systems can increase skilled birth attendance. *Int J Gynaecol Obstet* 2011; 115(2):127-34.
9. Ray AM, Salihu HM. The impact of maternal mortality interventions using traditional birth attendants and village midwives. *J Obstet Gynaecol* 2004; 24(1):5-11.
10. Agarwal S, Sethi V, Srivastava K, Jha PK, Baqui AH. Birth preparedness and complication readiness among slum women in Indore City, India. *J Health Nutr Popul* 2010; 28(4): 383-391.
11. Wilson A, Gallos ID, Plana N, Lissauer D, Khan KS, Zamora J, et al. Effectiveness of strategies incorporating training and support of traditional birth attendants on perinatal and maternal mortality: meta-analysis. *BMJ* 2011; 343:d7102.
12. Sibley LM, Sipe TA. Transition to skilled birth attendance: Is there a future role for trained traditional birth attendants. *J Health Popul Nutr* 2006; 24(4):472-8.
13. Bisika T. The effectiveness of the TBA programme in reducing maternal mortality and morbidity in Malawi. *East Afr J Public Health* 2008; 5(2):103–10.
14. Chalo RN, Salihu HM, Nabukera S, Zirabamuzaale C. Referral of high-risk pregnant mothers by trained traditional birth attendants in Buikwe County, Mukono District, Uganda. *J Obstet Gynaecol* 2005; 25(6):554-7.
15. Temesgen TM, Umer JY, Buda DS, Haregu TN. Contribution of traditional birth attendants to the formal health system in Ethopia: the case of Afar region. *Pan Afr Med J* 2012; 13(Suppl 1):15.
16. Wajid A, Rashid Z, Mir AM. Initial assessment of Community Midwives in rural Pakistan. PAIMAN. JSI Research and Training Institute, Inc; Islamabad: 2010.
17. Concern Worldwide. Examining the role of traditional birth attendants in the continuum of care in Sierra Leone. Innovations for maternal, newborn and child health. Policy Brief. Concern Worldwide; New York: 2013.
18. National Institute of Population Studies and Macro International Inc. Pakistan Demographic and Health Survey (PDHS) 2006–07. Government of Pakistan; Islamabad: 2008.
19. Government of Pakistan. PC1 National Maternal Newborn & Child health Program 2006-2012. Ministry of Health, Government of Pakistan; Islamabad: 2009.

20. Research and Development Solutions. The community midwives program in Pakistan. Policy Brief Series No 20. Islamabad: 2012.
21. Department of Health. District health profile-Chitral. Government of Khyber Pakhtunkhwa; Peshawar: 2014.
22. Chesney M, Davies S. Women's birth experiences in Pakistan – the importance of the Dai. The Royal College of Midwives. *Evid Based Midwifery* 2005; 3(1):26-32.
23. Owolabi OO, Glenton C, Lewin S, Pakenham-Walsh N. Stakeholder views on the incorporation of traditional birth attendants into the formal health systems of low-and middle-income countries: a qualitative analysis of the HIFA2015 and CHILD2015 email discussion forums. *BMC Pregnancy Childbirth* 2014; 14:118.
24. Sarfraz M, Hamid S. Challenges in delivery of skilled maternal care-Experiences of community midwives in Pakistan. *BMC Pregnancy Childbirth* 2014; 14:59.
25. Research and Advocacy Fund/Children First. How far can I go? Social mobility of CMWs in Azad Kashmir. Islamabad: 2012.
26. Morrison J, Tumbahangphe KM, Budhathoki B, Neupane R, Sen A, Dahal K, et al. Community mobilization and health management committee strengthening to increase birth attendance by trained health workers in rural Makwanpur, Nepal: study protocol for a cluster randomized controlled trial. *Trials* 2011; 12:128.
27. Walraven G, Blum J, Dampha Y, Sowe M, Morison L, Winikoff B, et al. Misoprostol in the management of the third stage of labour in the home delivery setting in rural Gambia: a randomized controlled trial. *Br J Obstet Gynaecol* 2005; 112: 1277-83.
28. Mobeen N, Durocher J, Zuberi N, Jahan N, Blum J, Wasim S, et al. Administration of misoprostol by trained traditional birth attendants to prevent postpartum hemorrhage in homebirths in Pakistan: a randomized placebo-controlled trial. *BJOG* 2011; 118(3):353-61.
29. Shaikh BT, Haran D, Hatcher J. Women's social position and health-seeking behaviors: Is the health care system accessible and responsive in Pakistan? *Health Care Women Int* 2008; 29:945-959.

30. Gill CJ, Phiri-Mazala G, Guerina NG, Kasimba J, Mulenga C, MacLeod WB. Effect of training traditional birth attendants on neonatal mortality (Lufwanyama Neonatal Survival Project): randomized controlled study. *BMJ* 2011; 342:d346.

31. Falle TY, Mulany LC, Thatte N, Khatry SK, LeClerg SC, Darmstadt GL, et al. Potential role of traditional birth attendants in neonatal healthcare in rural southern Nepal. *J Health Popul Nutr* 2009; 27(1): 53–61.

Emerging role of traditional birth attendants in mountainous terrain: A qualitative exploratory study ~~o~~from Chitral District, Pakistan

Babar Tasneem Shaikh, MPH, PhD, FRCP Edin

Sharifullah Khan, MPH

Ayesha Maab, MSc

Sohail Amjad, MA-HM, MA-HMPP

Running title: Role of traditional birth attendants

Corresponding author

Dr Babar Tasneem Shaikh

Aga Khan Foundation (Pakistan)

Level Nine, Serena Business Complex

Khayaban-e-Suharwardy, Islamabad

t: +92 51 111-253-254

f: +92 51 2072552

e: shaikh.babar@gmail.com

Abstract:

Objectives: This research endeavors to to identify the role of TBAs in supporting the MNCH care, partnership mechanism with the formal health system and also explored livelihood options for TBAs~~re-define the role of Traditional Birth Attendants (TBAs) in supporting the Maternal Newborn & Child Health (MNCH) care now provided mainly by the trained community midwives (CMWs), to mainstream TBAs with the formal health system and to delineate their livelihood prospects, after the deployment and introduction of CMWs~~ in the health system of Pakistan.

Setting: The study was conducted in District Chitral, Khyber Pakhtunkhwa province, covering the areas where Chitral Child Survival programme was implemented.

Participants: A qualitative exploratory study was conducted, comprising seven Key informant interviews (KIIs) with health managers, and four focus group discussions (FGDs) ~~-~~with CMWs, TBAs, members of CBSG and members of Village Health Committees (VHCs).

Results: The study identified that In the new scenario, after the introduction of CMW in the health system, TBAs still have a pivotal role in health promotion activities such as breast feeding promotion and vaccination. TBAs can assist CMWs in normal deliveries, and refer high risk cases to formal health system. Generally, TBAs are positive about CMWs' introduction and welcome this addition. Yet, their livelihood has suffered after CMWs deployment. Monetary incentives to them in recognition of referrals to CMWs could be one solution. VHC is an active forum for strengthening coordination between the two service providers and to ensure an alternate and permanent livelihood support system for the TBAs.

Conclusion: TBAs assured their continued support in provision of continuum of care for pregnant women, lactating mothers and children under five. The district health authorities must figure out ways to foster a healthy interface vis-à-vis roles and responsibilities of TBAs and CMWs. After some time, it would be worthwhile to do further research to look into the CMW's integration in the system, as well as TBA's continued role for provision of MNCH care.

Keywords: Maternal Newborn & Child Health, Traditional birth attendant, Community midwife, Qualitative research, Pakistan.

Strengths & Limitations of the study

A study, first of its kind, which has expounded on the subject of TBAs role and livelihood after the introduction of trained MNCH providers in Pakistan. Use of qualitative methods provided rich insight into women's interpretations and decision-making regarding health care seeking during and after pregnancy in a relatively conservative setting of Pakistan. Study presents views of all stakeholders involved in the intervention.

The findings represent a specific sample size, study site and socio-cultural milieu and therefore may not be generalized for the entire province or country. Health providers involved in the study were mainly from AKHSP and government who were already exposed to this intervention. Only few TBAs could be gathered for discussion, because most of them were remotely located, and weather and family constraints did not allow them to travel. Moreover, the prospective role of TBA is discussed in a special context, whereby a CMW was trained and deployed in the area for increasing skilled birth attendance.

Introduction

Despite all advances toward MDGs 4 & 5, every year 6.6 million children die before five years of age (44% as newborns) and 289,000 maternal deaths occur, mostly from preventable causes (1). This state of affairs has raised serious global concern over the years in developing countries to ensure availability and accessibility of human resources for ensuring continuum of care for expecting mothers. Uniform availability and distribution of skilled birth attendants is critical to consider while looking at health service utilization trends (2). The Millennium Declaration in 2000 signed by 189 nations, recognized proportion of births assisted by trained birth as an important indicator to track maternal and child survival indicators (3,4). To increase the availability and accessibility of maternal and child health care services, training of TBAs and strengthening the partnership between community midwives (CMWs) and TBAs is widely acknowledged worldwide (5,6). Nonetheless, role of the TBAs cannot be effective in a weak primary health care system and in an unplanned referral mechanism (7).

In order to attain MDG-5, isolated interventions are not able to reduce maternal mortality sufficiently. It is important to review strategies to maximize strengths of TBAs as well and skilled birth attendants. Evidence suggests that skilled birth attendance has increased in regions where TBAs are integrated with the formal health system (8). However, integration of TBAs with the formal health system may require capacity development and supervision of TBAs, collaboration skills for health workers, involvement of TBAs at health facilities and, improved capacity on communication and referral systems. With this approach, TBAs may positively contribute to maternal and child health outcomes (9). Trainings of the TBAs not only enhance their knowledge and skills on obstetric care and referral mechanism, but also lead to greater community acceptance and a greater consumer satisfaction. They can play a vital role in birth preparedness and identification of danger signs (10). Training of TBAs has shown impact on perinatal and neonatal deaths which can be significantly reduced (11). Moreover, TBAs have been a critical contributor in providing skilled maternal, newborn and child health (MNCH) care in rural population of developing countries due to inadequate numbers of human resource for service delivery (12). Therefore, role of trained TBAs in healthcare provision cannot be undermined. Developing countries have used TBAs as a key strategy to improve maternal and child health care (13). They have been effective in

improving referral mechanism and links with the formal health care system (14). Literature review has suggested that a TBA is preferred over a midwife who is young, unmarried girl and without children. This trend is more common in countries where fresh CMWs are recently deployed such as Pakistan (15,16). Another reason for the community acceptance of TBAs is that they are affordable option than professional midwives and she often accepts payment in kind (17). Moreover, TBAs are always happy to make house visits, warranting mother's privacy.

Pakistan is among the few countries in South Asia that continues to have dismal maternal and child health indicators. In Pakistan, Maternal Mortality Ratios (MMR) is high, ranging from 240 to 700 per 100,000 live births. The top three causes of maternal death are postpartum hemorrhage, eclampsia and sepsis. Approximately two-thirds of all births (61%) take place at home due to limited access to health facilities. Home based deliveries are usually attended by the TBA and now newly deployed community midwives in some rural parts of the country (18). While some maternity care indicators appear to have improved over the last two decades, women's access to prenatal health care continues to be low in Pakistan18.

Realizing the need for community health work force, Government of Pakistan launched the national MNCH program in 2006 to help the rural women deliver safely (19). Although the program has been successful in countries such as Malaysia and Indonesia, challenges faced by the CMW program of Pakistan are multifaceted. These challenges are related to acceptance by community, competition with other service providers, weak referral system, inadequate skill set and lack of community involvement (20).

The intervention

To address health system constraints, Chitral Child Survival Program (CCSP) of Aga Khan Foundation Pakistan (AKF-P) deployed CMWs, supported community financing scheme, improved referral linkages and implemented a behavior change communication campaign from 2008-2014. CCSP was implemented in close partnership of Department of Health, Khyber Pakhtunkhwa, Aga Khan Health Services Pakistan

(AKHSP), and Aga Khan Rural Support Program (AKRSP). The CCSP interventions, especially the role of community based saving groups, village health committees (VHCs) and community based emergency maternal referral mechanism to achieve project results showed that CCSP had attempted to engage the TBAs proactively. The project empowered TBAs on Birth Preparedness and Complications Readiness (BPCR) plans and integrated referral mechanisms. Involvement of TBAs in the project was meaningful to generate the community acceptability for young CMWs, identification of high risk cases, and referrals of complications to CMW and transporting pregnant woman to health facility in time.

This research endeavored to identify the role of TBAs in supporting the MNCH care, partnership mechanism with the formal health system and also explored livelihood options for TBAs.

Methodology

a) Study site

The study was conducted in Chitral district, north western border of Pakistan, from March-April 2014. The population of the intervention area is 200,000, about 57% of the total population of the district and residing in 243 villages. The government department of health and Aga Khan Health Services Pakistan (AKHSP) are the two primary formal sector healthcare providers in Chitral. The public-sector healthcare infrastructure in the district includes 22 civil dispensaries, 21 basic health units; three tehsil headquarters and one district headquarter hospital (21). AKHSP operates its own 32 health facilities in Chitral which include 17 health centers, eight family health centers, four dispensaries and three secondary care facilities, covering 60% of Chitral district. The MMR in the province is 275/100,000 live births; whereas under five mortality is 75/1000 live births (18~~19~~). Despite the presence of skilled birth attendants under MNCH program, large proportion of the deliveries is still attended by TBAs in Chitral district.

b) Study Design and data collection

The project documents and other relevant studies were thoroughly reviewed and the collated information guided to design the qualitative data collection instruments. A qualitative exploratory

study entailed seven KIIs and four FGDs conducted with different study participants. The questions for focus group discussion (FGD) and key informants interview (KIIs) explore the role of TBAs in supporting MNCH care and CCSP project activities, community experience with TBAs, TBAs' relationship and coordination with the CMWs, referral of cases; remuneration and livelihood sources of TBAs; ways to engage TBAs in continuum of care, working relationships and linkages with the formal health system, and sustainability/livelihood of TBAs. Using a participation diagram in FGDs, it was ensured that nobody is missed out and that all the participants must speak on each question. To ensure quality control, information collected through note-taking was cross-checked for completeness and consistency before and during data processing by the research team.

c) Study participants

All the study participants were purposively sampled from the intervention areas in the district, with the help of the implementing agencies on ground. Community based health workers i.e. CMWs and TBAs; members of VHC and Community Based Saving Group (CBSG) were included in the discussion. The participants were encouraged by the moderator (PI) to interact with each other and comment on experiences and perceptions regarding role of TBAs, partnership with formal health system, and livelihood of TBAs. KIIs were conducted with two government health managers, two AKF-P managers, and three AKHSP managers. All the FGDs were conducted in the community; whereas KIIs were conducted in the respective offices of health managers. Table-1 presents the detail of the methods employed for the study.

Table-1: Detail of methods employed in qualitative study

Cadre	Method	Total number of respondents	Village
CMWs	FGD	10	Mori Lshat, Barini, Awi, Miragarm, Sore Laspoor, Raman, Terich Payeen, Lot Owir Bala, Lot Owir Payeen, Gohkir, Parsan, Owir Lasht Arkari, Besti Arkari, Khuz, Phashk
TBAs	FGD	5	Lower Porth, Brock Kalaway, Porth Bala, Raman, Brock Baraman Deh
VHC	FGD	8	Morder
CBSG	FGD	10	Morder

Health managers (AKHSP, AKF-P & Government)	7 KIIs	07	Chitral city

Purposive sampling technique was adopted, inviting the participation of those CMWs, and TBAs who had been serving actively in their local communities for the last two years. These health workers were identified with the help of health managers of AKHSP and government. Likewise, only those members of VHC were invited for FGD, who had been active for the last two years. Each participant of the FGD and KII was given the verbal information about the study by the research team and was given a consent form prior to participation.

d) Data analysis

A qualitative content analysis was applied to analyze the information manually from all the FGDs and KIIs. A stepwise approach was adopted for the content analysis. The analysis aimed at finding manifest and latent meaning of data. The transcribed data was initially read several times by the principal researcher in order to find the sense of the whole. At first stage the segmentation of information was done i.e. segments and sub-segments of information were organized. Subsequently the significant information was extracted which was related to research questions. At second stage the common views of the respondents were put together at one place. At third stage, data was coded (different responses highlighted) and then these codes were grouped into categories and abstracted into sub-themes and a main theme. At final stage, the meanings of themes/descriptions were interpreted by keeping in view and considering the cultural context of the participants.

Results

The main theme which came out was the "emerging role of TBAs to improve Maternal, Newborn and Child Health". After content analysis, following sub-themes were identified as shown in Table 2:

1. Community experience with CMWs and TBAs
2. View of participants on utilization of TBAs in formal health system
3. Role of TBAs in supporting obstetric care
4. Linkages and coordination among TBAs and CMWs

5. Livelihood of TBAs

Table-2: Matrix of qualitative research analysis

Nodes	Sub-nodes
Community experience with CMWs and TBAs	- Availability of CMWs have empowered women for health care seeking - Community has trust and faith in TBAs and their services
Linkage of TBAs with formal health system	-TBAs have pivotal role in health promotion activities such as health messages on breast feeding, mother and child immunization. -TBAs must assist CMW who is naïve to reproductive health matters. -TBAs can be involved in linking high risk cases to CMW and health facility.
Role of TBAs in supporting obstetric care	- TBAs assist CMW in delivery, identify expectant mothers with high risks, refer such cases to formal health system, and support post-natal care
Linkages and coordination among TBAs and CMWs	- Mixed responses in terms of relationship between CMWs and TBAs - VHC is an active forum for coordination - Coordination is better at places where TBA gets some share of CMW income
Livelihood of TBAs	- CMWs could offer some incentives to TBAs to strengthen referrals and assistance in skilled delivery - VHCs decide TBA incentive share of CMW income - Community pay in kind contribution to recognize services of TBA

Community experience with CMWs and TBAs

Availability of CMWs and the supportive role of TBAs in obstetric care have benefited communities, by and large. Most of the respondents shared that availability of CMWs has empowered women in order to seek essential and emergency obstetric care in rural communities. Members of VHC appreciated the binding relation of CMWs with TBAs. Despite availability of CMWs, the community members still have greater trust and faith in TBAs who live and deals with the village women since ages. Some of the respondents told that they avail services of TBAs due to her rich experience as compared to CMWs who are young and yet naïve to various reproductive health matters.

"TBA still has the critical role as being more in proximity to the village women. She enjoys far more trust of the communities. She has a years' long rapport with the families. People tend to follow her advice." (Director Health, AKF-P)

"I consider the role of TBAs important for two reasons; firstly they have been trusted by the communities, so they need to be taken on board for enhancing referrals to CMWs. Secondly, if they are not engaged properly then they will do more harm by doing deliveries and might spread negative propaganda too about the CMWs". (KII-AKF-P Senior Program Officer)

"I take my wife and child to CMW to see for medical help or treatment for maternal and child health problems? In our village, Dai (TBA) enjoys good relationship with the CMW". (FGD-VHC, Morder)"

"My family often seeks services from a TBA…she has all the experience." (FGD-VHC, Morder)

"The TBAs are working since long time and they have developed trust in the communities". (KII, AKHSP Manager)

Linkage of TBAs with formal health system

~~TBAs have pivotal role in health promotion activities such as health messages on nutrition, breast feeding, and vaccination promotion.~~ Viewpoints of participants revealed that TBAs can be mainstreamed in a formal health system by assigning health promotion activities and for referring high risk cases to CMW and health facility.

"The TBAs have role in referring of high risk cases and expectant mothers for delivery to CMWs. TBAs are also playing very good role in the community in identifying pregnant mothers during 1st trimester in the community, arranging TT vaccinations and providing education on nutrition during pregnancy." (GM, AKHSP)

"They (TBAs) must be linked with the formal health system especially for health promotion, referrals and assisting deliveries with CMWs, when needed" (FGD-VHC, Morder)

Role of TBAs in supporting obstetric care

TBAs have pivotal role in terms of identifying pregnancy related complications and assisting safe obstetric care services with CMWs. Traditionally, TBAs have been involved in the promotion of better nutrition practices for pregnant mothers, breastfeeding practices, TT vaccination of expectant mothers, prevention of neonatal hypothermia, and post-natal care including family planning. TBAs have a crucial role in strengthening referral and coordination mechanisms with CMWs and with the health facility. Findings of the KIIs and FGDs revealed that some TBAs were even involved in assisting deliveries with CMWs.

"Many TBAs, no doubt have a sound folk wisdom, which can be used for various health promotion messages, especially where there is no other community health worker. Moreover, TBAs can be trained in providing antenatal care, TT vaccine, Misoprostol administration, recognizing the danger signs of pregnancy etc. This will give her a feeling that she still has a role to play in saving women's lives." (Director Health, AKF-P)

"TBAs promote breastfeeding and healthy nutritional practices in our community for mother and children; and they can keep on doing that". (FGD-VHC, Morder)

"In my village, TBA assists delivery with me and refers cases to me. I have to say that she is of great help for me". (FGD-CMWs, Parsan)

"They (TBAs) said, they do refer cases to them and in many cases have joined CMWs for conducting deliveries." (KII-AKF-P Senior Program Officer)

Linkages and coordination mechanisms among TBAs and CMWs

Lack of role clarity, physical inaccessibility, professional rivalry and few income opportunities are key factors for weak linkages between TBAs and CMWs. Some of the CMWs expressed that they encountered problems and resistance from the TBAs and community during the initial phase of deployment. Village health committee shared that they invite both TBAs and CMWs in the VHC meetings. ~~Performance of TBAs vis-à-vis skills related to maternal and newborn health is not satisfactory. Therefore, they now go to the CMWs who have adequate competency in knowledge and skills about the obstetric care. Some of the members shared that TBAs refer complicated expectant mothers to CMWs and health facility. In few instances, TBA was seen to be assisting the CMW in deliveries.~~

"Rivalry; both are birth attendants; one is practicing by virtue of folk knowledge and the other is trained according to modern guidelines and WHO standards. So that has created a competition. At places, there is coordination too, where both are from the same family or where both have realized each other's importance." (Director Health, AKF-P)

"The issues between TBA and CMW can be effectively dealt if AKHSP works with all stakeholders and set out a proper coordination plan, and play catalytic role to nurture a health relationship." (KII-AKF-P, Senior Program Officer)

"In some areas of intervention, the TBA perceived CMW as competitor." (GM, AKHSP)

"Introduction of CMWs in the areas will limit the role of TBAs. To cope with this challenge the TBAs were included in the VHCs and the roles/responsibilities of the CMWs were communicated through this platform". (KII, AKRSP Manager)

Performance of TBAs vis-à-vis skills related to maternal and newborn health is not satisfactory. Therefore, they now go to the CMWs who have adequate competency in knowledge and skills about the obstetric care. Some of the members shared that TBAs refer complicated expectant mothers to CMWs and health facility. In few instances, TBA was seen to be assisting the CMW in deliveries. Nonetheless, where TBAs

did not receive any share from the CMWs, we found weak coordination mechanisms with the formal health system.

"Many TBAs are in favor of CMWs because they cannot handle the complicated cases properly; yet some are against her. VHC is trying to bring the TBA as member in VHC and told them about the importance of deliveries by skilled hand and hygienic way." (FGD-VHC, Morder)

According to CMWs, they have high regard for the TBA, her experience and wisdom. They feel that TBA can complement their work. On the other hand, most TBAs are satisfied with CMWs work, skills and services rendered to the community women. Very few seem to be unhappy indeed.

Livelihood and sustainability of TBAs

Supporting role of TBAs is very important; especially in context of difficult geographical terrains in Chitral. Various options as well as mechanisms were identified by the respondents, when asked about livelihood prospects of TBAs. Most of the respondents were of opinion that CMWs must pay some incentives to TBAs to strengthen referrals and assistance in skilled delivery. Findings of the KII revealed that one of the available forums to decide TBAs incentives is village committee. VHCs and other available forums such as Local Support organizations (LSOs) can play pivotal role in taking up such decisive role for supporting livelihood options for TBAs. Regarding payment to TBAs, some of the CMWs did not recompense TBAs. Some of the TBAs also told that they get in kind contributions and support for her services from the village families and not from the CMWs.

"It is an informal arrangement between the two of them. Officially there is no binding on the CMW to pay TBA for referrals." (Director Health, AKF-P)

"One of the CMW referred two cases to CMWs, and in fact she did join her for conducting the deliveries, but in return did not get anything from the CMW and the family too." (KII-AKF-P, Senior Program Officer)

"Let it be the VHC meeting to decide about some incentives to be given to TBAs from CMW fee, because she will be referring every case to CMW. CMW should provide some money to TBA". (KII, AKHSP Manager)

"TBAs were providing delivery services before CMWs' deployment; hence CMWs' services will certainly affect their regular income (in cash or in kind). CMW should give incentive from her service fee to TBAs on each referral; whereas TBA can continue providing care to mother after delivery". (KII, Manager Programs, AKHSP)

"In our area, CMW is paying Rs200 to the TBA for each referral". (FGD-VHC, Morder)

"In two cases, I assisted CMW for delivery of a mother. CMW did not give me any money. I got some cash and chicken from the house of delivered mother". (FGD-TBA, Lower Porth)

Discussion

Though communities where CMWs are deployed after training are happy, yet the continued utilization of TBAs' services in Chitral. Fact is attributed to several factors including the TBAs' proximity to several villages, TBAs' respectful attitude toward the community, and flexible modes of payment (22,23). CMWs have been recently deployed in Chitral and experienced challenges and constraints by community based health providers and community itself in delivery of maternal health services (24,25). Evidence suggests that health management committees at the village level have been effective in reducing maternal complications through promoting linkages of health care providers with the community (26). The findings of our study also revealed that community forum in the form of VHC has played pivotal role in convincing the communities to avail CMW services and motivate the TBA to continue in supportive role in MNCH care. Awareness sessions have to be conducted on regular basis and on different forums to better inform the elder women and expecting mothers about the benefits of making use of skilled birth attendant i.e. CMW.

Results of our study found that TBAs play vital role in improving maternal health such as diagnosing labor, assisting clean delivery with CMWs, detecting and referring maternal complications, and promoting

health messages. While trained TBAs are not considered skilled birth attendants, their potential contribution in supporting maternal care has been recognized in low income and middle countries facing issues of human response scarcity (12,**Error! Bookmark not defined.**~~13~~). Role of TBAs in administration of misoprostol to prevent postpartum hemorrhage in home-births is oft-advocated (27,28). Nevertheless, the role of TBAs in supporting MNCH care cannot be neglected in settings where skilled birth attendants are fewer and new to health system. In the wake of reforms and the novel MNCH program of Pakistan, role of TBAs in improving maternal care and transforming health seeking behaviours ought to be promoted (29). Defining her role and contribution in the continuum of care is linked to her livelihood and income generation.

Improved linkages and relationship among CMWs and TBAs is of essence to flourish referral system from community to health facility. Better coordination and collaboration of TBAs with CMWs was promoted under CCSP, by sensitizing the CMW on prospective role of TBA which will complement her services and will help in building her rapport with the community. TBA, who has a long standing link with local community, can act as a bridge to strengthen referral mechanism between community and the formal health system (15~~21~~). Findings of the qualitative study follow other studies which demonstrated that a formal partnership program among TBAs and the skilled midwives has yet to be seen (5~~6~~). While the importance of the TBAs role in referral is universally acknowledged, most health systems have not developed an effective referral mechanism. The CCSP project provided an enabling forum at the village level for CMWs and TBAs to interact and improve referral linkages. Such partnership is crucial to improve access to health care services, especially for communities living in the remote areas. Nevertheless, training and monitoring TBAs on MNCH care is imperative to minimize chances of malpractices (13). Nevertheless, this training should be imparted by the government in its public sector nursing and midwifery schools. ~~Therefore~~However, joint monitoring by AKHSP and government, by involving the village health committees could be instrumental in this regard. Moreover, participatory monitoring is always less threatening; and hence TBAs should be meaningfully engaged in such type of monitoring. A systematic recording and periodic analysis of information could be conducted by the TBAs themselves.

Formatted: Font: (Default) Arial, 10 pt

Formatted: Font: (Default) Arial, 10 pt

Formatted: Font: (Default) Arial, 10 pt

with the help of public health experts. The aim is to measure progress and to make any corrections en route.

Financial constraints are a major risk to the livelihood of TBAs as evident from the findings of our study. Mostly they are receiving in kind payments by the family of expectant mothers; and a nominal payment by CMWs for each referral. CMWs must keep a cushion of nominal payment to TBA, after verifying her services. That will surely help in building a healthy relationship amongst the two service providers. Where TBAs did not receive any share from the CMWs, we found weak coordination mechanisms with the formal health system. Evidence suggests that in kind contributions by clients are the most common mode of payment by the clients (8,9,10,11). With the increasing use of TBAs in MNCH care, the question of compensation has become more pressing because these workers usually rely on rewards and in kind contributions by the clients (30). Continuing efforts to define the role of TBAs may benefit from an emphasis on their potential as active promoters of essential newborn care (31). In the context of Pakistan, the role of TBAs ought to be revisited and redefined, not only for the sake of trust of communities on her services, but also for her own livelihood.

Conclusion

Prevailing poverty in the area calls for thinking solutions to ensure livelihood of TBAs, and to figure out an emerging role for her after the introduction of CMW in the health system. TBAs surely have solutions in the continuum of care for pregnant women, lactating mothers and children under five. They continue to take pride and see value in their role in the health system to support MNCH care. Health systems performance can be amplified by having a healthy interface between the TBAs and CMWs, and for the larger benefit of the communities served.

Acknowledgement:

The authors acknowledge the facilitation and assistance provided by AKF-P, AKHSP and AKRSP to carry out field data collection.

Ethical consideration:

Ethics approval for this study was granted by the Institutional Review Board of Aga Khan Health Services, Pakistan. Verbal informed consent was obtained from all the study participants, after explaining the objectives of the study. Confidentiality and anonymity was assured to all the participants. Data was kept under lock and key with the principal researcher.

Authors' contributions

BTS and SAK conceived the study design and instruments. AM supervised the data collection and helped in analyses. BTS and SAK drafted the successive drafts of paper. SA conducted the critical review and added the intellectual content to the paper. All authors read and approved the final draft.

Funding: The study was a part of larger project "Chitral Child Survival Program" funded by USAID.

Competing Interests

The authors declare that they have no competing interests.

References

1. World Health Organization & UNICEF. Countdown to 2015 and beyond: fulfilling the health agenda for women and children. Geneva: 2014.
2. Shaikh BT. Marching toward the Millennium Development Goals: What about health systems, health-seeking behaviours and health service utilization in Pakistan? *World Health & Popul* 2008; 10(2): 44-52.
3. United Nations. Road map towards the implementation of the United Nations Millennium Declaration: report of the Secretary-General. New York: 2001.
4. Sachs JD, McArthur JW. The Millennium Project: a plan for meeting the Millennium Development Goals. *Lancet* 2005; 365(9456):347-53.

5. Titaley CR, Hunter CL, Dibley MJ, Heywood P. Why do some women still prefer traditional birth attendants and home delivery? A qualitative study on delivery care services in West Java Province, Indonesia. *BMC Pregnancy Childbirth* 2010; 10:43.
6. Lassi ZS, Haider BA, Bhutta ZA. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. *Cochrane Database Syst Rev* 2010; 11: CD007754.
7. Garces A, McClure EM, Chomba E, Patel A, Pasha O, Tshefu A. Home birth attendants in low income countries: who are they and what do they do? *BMC Pregnancy Childbirth* 2012; 12:34.
8. Byrne A, Morgan A. How the integration of traditional birth attendants with formal health systems can increase skilled birth attendance. *Int J Gynaecol Obstet* 2011; 115(2):127-34.
9. Ray AM, Salihu HM. The impact of maternal mortality interventions using traditional birth attendants and village midwives. *J Obstet Gynaecol* 2004; 24(1):5-11.
10. Agarwal S, Sethi V, Srivastava K, Jha PK, Baqui AH. Birth preparedness and complication readiness among slum women in Indore City, India. *J Health Nutr Popul* 2010; 28(4): 383-391.
11. Wilson A, Gallos ID, Plana N, Lissauer D, Khan KS, Zamora J, et al. Effectiveness of strategies incorporating training and support of traditional birth attendants on perinatal and maternal mortality: meta-analysis. *BMJ* 2011; 343:d7102.
12. Sibley LM, Sipe TA. Transition to skilled birth attendance: Is there a future role for trained traditional birth attendants. *J Health Popul Nutr* 2006; 24(4):472-8.
13. Bisika T. The effectiveness of the TBA programme in reducing maternal mortality and morbidity in Malawi. *East Afr J Public Health* 2008; 5(2):103–10.
14. Chalo RN, Salihu HM, Nabukera S, Zirabamuzaale C. Referral of high-risk pregnant mothers by trained traditional birth attendants in Buikwe County, Mukono District, Uganda. *J Obstet Gynaecol* 2005; 25(6):554-7.
15. Temesgen TM, Umer JY, Buda DS, Haregu TN. Contribution of traditional birth attendants to the formal health system in Ethopia: the case of Afar region. *Pan Afr Med J* 2012; 13(Suppl 1):15.
16. Wajid A, Rashid Z, Mir AM. Initial assessment of Community Midwives in rural Pakistan. PAIMAN. JSI Research and Training Institute, Inc; Islamabad: 2010.

17. Concern Worldwide. Examining the role of traditional birth attendants in the continuum of care in Sierra Leone. Innovations for maternal, newborn and child health. Policy Brief. Concern Worldwide; New York: 2013.
18. National Institute of Population Studies and Macro International Inc. Pakistan Demographic and Health Survey (PDHS) 2006–07. Government of Pakistan; Islamabad: 2008.
19. Government of Pakistan. PC1 National Maternal Newborn & Child health Program 2006-2012. Ministry of Health, Government of Pakistan; Islamabad: 2009.
20. Research and Development Solutions. The community midwives program in Pakistan. Policy Brief Series No 20. Islamabad: 2012.
21. Department of Health. District health profile-Chitral. Government of Khyber Pakhtunkhwa; Peshawar: 2014.
22. Chesney M, Davies S. Women's birth experiences in Pakistan – the importance of the Dai. The Royal College of Midwives. *Evid Based Midwifery* 2005; 3(1):26-32.
23. Owolabi OO, Glenton C, Lewin S, Pakenham-Walsh N. Stakeholder views on the incorporation of traditional birth attendants into the formal health systems of low-and middle-income countries: a qualitative analysis of the HIFA2015 and CHILD2015 email discussion forums. *BMC Pregnancy Childbirth* 2014; 14:118.
24. Sarfraz M, Hamid S. Challenges in delivery of skilled maternal care-Experiences of community midwives in Pakistan. *BMC Pregnancy Childbirth* 2014; 14:59.
25. Research and Advocacy Fund/Children First. How far can I go? Social mobility of CMWs in Azad Kashmir. Islamabad: 2012.
26. Morrison J, Tumbahangphe KM, Budhathoki B, Neupane R, Sen A, Dahal K, et al. Community mobilization and health management committee strengthening to increase birth attendance by trained health workers in rural Makwanpur, Nepal: study protocol for a cluster randomized controlled trial. *Trials* 2011; 12:128.
27. Walraven G, Blum J, Dampha Y, Sowe M, Morison L, Winikoff B, et al. Misoprostol in the management of the third stage of labour in the home delivery setting in rural Gambia: a randomized controlled trial. *Br J Obstet Gynaecol* 2005; 112: 1277-83.

28. Mobeen N, Durocher J, Zuberi N, Jahan N, Blum J, Wasim S, et al. Administration of misoprostol by trained traditional birth attendants to prevent postpartum hemorrhage in homebirths in Pakistan: a randomized placebo-controlled trial. *BJOG* 2011; 118(3):353-61.

29. Shaikh BT, Haran D, Hatcher J. Women's social position and health-seeking behaviors: Is the health care system accessible and responsive in Pakistan? *Health Care Women Int* 2008; 29:945-959.

30. Gill CJ, Phiri-Mazala G, Guerina NG, Kasimba J, Mulenga C, MacLeod WB. Effect of training traditional birth attendants on neonatal mortality (Lufwanyama Neonatal Survival Project): randomized controlled study. *BMJ* 2011; 342:d346.

31. Falle TY, Mulany LC, Thatte N, Khatry SK, LeClerg SC, Darmstadt GL, et al. Potential role of traditional birth attendants in neonatal healthcare in rural southern Nepal. *J Health Popul Nutr* 2009; 27(1): 53–61.