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

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

For peer review only

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

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

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17 Pakistan is among the few countries in South Asia that continues to have dismal maternal and child
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19 health indicators. In Pakistan, Maternal Mortality Ratios (MMR) is high, ranging from 240 to 700 per
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21 100,000 live births. The top three causes of maternal death are postpartum hemorrhage, eclampsia and
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23 sepsis. Approximately two-thirds of all births (61%) take place at home due to limited access to health
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25 facilities. Home based deliveries are usually attended by the TBA and now newly deployed community
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27 midwives in some rural parts of the country (18). While some maternity care indicators appear to have
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29 improved over the last two decades, women's access to prenatal health care continues to be low in
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31 Pakistan¹⁸.

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35 Realizing the need for community health work force, Government of Pakistan launched the national
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37 MNCH program in 2006 to help the rural women deliver safely (19). Although the program has been
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39 successful in countries such as Malaysia and Indonesia, challenges faced by the CMW program of
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41 Pakistan are multifaceted. These challenges are related to acceptance by community, competition with
42
43 other service providers, weak referral system, inadequate skill set and lack of community involvement
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45 (20).

46 47 48 **The intervention**

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50 To address health system constraints, Chitral Child Survival Program (CCSP) of Aga Khan Foundation
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52 Pakistan (AKF-P) deployed CMWs, supported community financing scheme, improved referral linkages
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54 and implemented a behavior change communication campaign from 2008-2014. CCSP was implemented
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56 in close partnership of Department of Health, Khyber Pakhtunkhwa, Aga Khan Health Services (AKHSP),
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3 Pakistan and Aga Khan Rural Support Program (AKRSP). The CCSP interventions, especially the role of
4 community based saving groups, village health committees (VHCs) and community based emergency
5 maternal referral mechanism to achieve project results showed that CCSP had attempted to engage the
6 TBAs proactively. The project empowered TBAs on Birth Preparedness and Complications Readiness
7 (BPCR) plans and integrated referral mechanisms. Involvement of TBAs in the project was meaningful to
8 generate the community acceptability for young CMWs, identification of high risk cases, and referrals of
9 complications to CMW and transporting pregnant woman to health facility in time.
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19 This research endeavored to identify the role of TBAs in supporting the MNCH care, partnership
20 mechanism with the formal health system and also explored livelihood options for TBAs.
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25 **Methodology**

26 **a) Study site**

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

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

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2
3 VHC were invited for FGD, who had been active for the last two years. Each participant of the FGD and
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5 KII was given the verbal information about the study by the research team and was given a consent form
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7 prior to participation.
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10 11 **d) Data analysis**

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

36
37 The main theme which came out was the “emerging role of TBAs to improve Maternal, Newborn and
38
39 Child Health”. After content analysis, following sub-themes were identified:

- 40
41 1. Community experience with CMWs and TBAs
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43 2. View of participants on utilization of TBAs in formal health system
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45 3. Role of TBAs in supporting obstetric care
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47 4. Linkages and coordination among TBAs and CMWs
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49 5. Livelihood of TBAs
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Table-2: Matrix of qualitative research analysis

Nodes	Sub-nodes
Community experience with CMWs and TBAs	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> -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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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)

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

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

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

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

27 28 29 30 31 **Linkage of TBAs with formal health system**

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

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

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52 *"They (TBAs) must be linked with the formal health system especially for health promotion, referrals and*
53 *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

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3 resistance from the TBAs and community during the initial phase of deployment. Village health committee
4 shared that they invite both TBAs and CMWs in the VHC meetings. Performance of TBAs vis-à-vis skills
5 related to maternal and newborn health is not satisfactory. Therefore, they now go to the CMWs who
6 have adequate competency in knowledge and skills about the obstetric care. Some of the members
7 shared that TBAs refer complicated expectant mothers to CMWs and health facility. In few instances, TBA
8 was seen to be assisting the CMW in deliveries.
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17 *“Rivalry; both are birth attendants; one is practicing by virtue of folk knowledge and the other is trained*
18 *according to modern guidelines and WHO standards. So that has created a competition. At places, there*
19 *is coordination too, where both are from the same family or where both have realized each other’s*
20 *importance.” (Director Health & Built Environment, AKF-P)*
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27 *“In some areas of intervention, the TBA perceived CMW as competitor.” (GM, AKHSP)*
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31 *“Many TBAs are in favor of CMWs because they cannot handle the complicated cases properly; yet some*
32 *are against her. VHC is trying to bring the TBA as member in VHC and told them about the importance of*
33 *deliveries by skilled hand and hygienic way.” (FGD-VHC, Morder)*
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39 *“We feel good about CMWs and think positively about them, majority still contact us, because the fee for*
40 *CMWs is high”. (FGD-TBAs, Raman)*
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43 *“I am satisfied with the services provided by CMW...I referred two cases to CMW”. (FGD-TBAs, Brock*
44 *Kalaway)*
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48 *“Introduction of CMWs in the areas will limit the role of TBAs. To cope with this challenge the TBAs were*
49 *included in the VHCs and the roles/responsibilities of the CMWs were communicated through this*
50 *platform”. (KII, AKRSP Manager)*
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3 *"The TBA in my area helps me in assisting delivery and refers cases to me." (FGD-CMWs, Terich*
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5 *Payeen)*

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

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15 *"I think role clarity, distance and community trust on TBAs, income opportunity etc. are the main barriers*
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17 *.These can be effectively dealt if AKHSP works with communities, CMWs and TBAs and set out a proper*
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19 *coordination plan and play catalytic role to nurturing that symbiotic relationship." (KII-AKF-P, Senior*
20
21 *Program Officer)*

22 23 24 25 **Livelihood and sustainability of TBAs**

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

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

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

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3 “TBAs were providing delivery services before CMWs’ deployment; hence CMWs’ services will certainly affect
4 their regular income (in cash or in kind). CMW should give incentive from her service fee to TBAs on each
5 referral; whereas TBA can continue providing care to mother after delivery”. (KII, Manager, Programs AKHSP)
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11 “It is an informal arrangement between the two of them. Officially there is no binding on the CMW to pay TBA for
12 referrals.” (Director Health & Built Environment, AKF-P)
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17 “In our area, CMW is paying Rs200 to the TBA for each referral”. (FGD-VHC, Morder)
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21 “In two cases, I assisted CMW for delivery of a mother. CMW did not give me any money. I got some
22 cash and chicken from the house of delivered mother”. (FGD-TBA, Lower Porth)
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26 27 Discussion

28
29 The continued utilization of TBAs’ services in Chitral is attributed to several factors including the TBAs’
30 proximity to several villages, TBAs’ respectful attitude toward the community, and flexible modes of
31 payment (22,23). CMWs have been recently deployed in Chitral and experienced challenges and
32 constraints by community based health providers and community itself in delivery of maternal health
33 services (24,25,26). Evidence suggests that health management committees at the village level have
34 been effective in reducing maternal complications through promoting linkages of health care providers
35 with the community (27). The findings of our study also revealed that community forum in the form of VHC
36 has played pivotal role in linking TBAs and CMWs with the community members.
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47 Results of our study found that TBAs play vital role in improving maternal health such as diagnosing
48 labor, assisting clean delivery with CMWs, detecting and referring maternal complications, and promoting
49 health messages. While trained TBAs are not considered skilled birth attendants, their potential
50 contribution in supporting maternal care has been recognized in low income and middle countries facing
51 issues of human response scarcity (12, **Error! Bookmark not defined.**). Role of TBAs in administration of
52 misoprostol to prevent postpartum hemorrhage in home-births is oft-advocated (28,29). Nevertheless, the
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3 role of TBAs in supporting MNCH care cannot be neglected in settings where skilled birth attendants are
4 fewer and new to health system. In the wake of reforms and the novel MNCH program of Pakistan, role of
5 TBAs in improving maternal care and transforming health seeking behaviours ought to be promoted (30).
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7 Defining her role and contribution in the continuum of care is linked to her livelihood and income
8 generation.
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15 Improved linkages and relationship among CMWs and TBAs is of essence to flourish referral system from
16 community to health facility. Better coordination and collaboration of TBAs with CMWs was promoted
17 under CCSP. TBA, who has a long standing link with local community, can act as a bridge to strengthen
18 referral mechanism between community and the formal health system (15). Findings of the qualitative
19 study follow other studies which demonstrated that a formal partnership program among TBAs and the
20 skilled midwives has yet to be seen (5). While the importance of the TBAs role in referral is universally
21 acknowledged, most health systems have not developed an effective referral mechanism. The CCSP
22 project provided an enabling forum at the village level for CMWs and TBAs to interact and improve
23 referral linkages. Such partnership is crucial to improve access to health care services, especially for
24 communities living in the remote areas. Nevertheless, training and monitoring TBAs on MNCH care is
25 imperative to minimize chances of malpractices (13).
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39 Financial constraints are a major risk to the livelihood of TBAs as evident from the findings of our study.
40 Mostly they are receiving in kind payments by the family of expectant mothers; and a nominal payment by
41 CMWs for each referral. Where TBAs did not receive any share from the CMWs, we found weak
42 coordination mechanisms with the formal health system. Evidence suggests that in kind contributions by
43 clients are the most common mode of payment by the clients (8,10). With the increasing use of TBAs in
44 MNCH care, the question of compensation has become more pressing because these workers usually
45 rely on rewards and in kind contributions by the clients (31). Continuing efforts to define the role of TBAs
46 may benefit from an emphasis on their potential as active promoters of essential newborn care (32). In
47 the context of Pakistan, the role of TBAs ought to be revisited and redefined, not only for the sake of trust
48 of communities on her services, but also for her own livelihood.
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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.

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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.

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Competing Interests

The authors declare that they have no competing interests.

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

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3 **Emerging role of traditional birth attendants in mountainous terrain of Chitral District, Pakistan**
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3 **Abstract:**
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5 **Objectives:** This research endeavors to re-define the role of TBAs in supporting the MNCH care now
6 provided mainly by the trained community midwives (CMWs), to mainstream TBAs with the formal health
7 system and to delineate their livelihood prospects, after the deployment and introduction of CMWs in the
8 health system of Pakistan.
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14 **Setting:** The study was conducted in District Chitral, Khyber Pakhtunkhwa province, covering the areas
15 where Chitral Child Survival programme was implemented.
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20 **Participants:** A qualitative exploratory study was conducted, comprising seven Key informant interviews
21 (KIIs) with health managers, and four focus group discussions (FGDs) with CMWs, TBAs and members
22 of Village Health Committees (VHCs).
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29 **Results:** The study identified that In the new scenario, after the introduction of CMW in the health
30 system, TBAs still have a pivotal role in health promotion activities such as breast feeding promotion and
31 vaccination. TBAs can assist CMWs in normal deliveries, and refer high risk cases to formal health
32 system. Generally, TBAs are positive about CMWs' introduction and welcome this addition. Yet, their
33 livelihood has suffered after CMWs deployment. Monetary incentives to them in recognition of referrals to
34 CMWs could be one solution. VHC is an active forum for strengthening coordination between the two
35 service providers and to ensure an alternate and permanent livelihood support system for the TBAs.
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44 **Conclusion:** TBAs assured their continued support in provision of continuum of care for pregnant
45 women, lactating mothers and children under five. The district health authorities must figure out ways to
46 foster a healthy interface vis-à-vis roles and responsibilities of TBAs and CMWs. After some time, it would
47 be worthwhile to do further research to look into the CMW's integration in the system, as well as TBA's
48 continued role for provision of MNCH care.
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3 **Keywords:** Maternal Newborn & Child Health, Traditional birth attendant, Community midwife, Qualitative
4 research, Pakistan.
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9 **Strengths & Limitations of the study**

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11 A study, first of its kind, which has expounded on the subject of TBAs role and livelihood after the
12 introduction of trained MNCH providers in Pakistan. Use of qualitative methods provided rich insight into
13 women's interpretations and decision-making regarding health care seeking during and after pregnancy in
14 a relatively conservative setting of Pakistan. Study presents views of all stakeholders involved in the
15 intervention.
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23 The findings represent a specific sample size, study site and socio-cultural milieu and therefore may not
24 be generalized for the entire province or country. Health providers involved in the study were mainly from
25 AKHSP and government who were already exposed to this intervention. Only few TBAs could be
26 gathered for discussion, because most of them were remotely located, and weather and family
27 constraints did not allow them to travel. Moreover, the prospective role of TBA is discussed in a special
28 context, whereby a CMW was trained and deployed in the area for increasing skilled birth attendance.
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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

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3 improving referral mechanism and links with the formal health care system (14). Literature review has
4 suggested that a TBA is preferred over a midwife who is young, unmarried girl and without children. This
5 trend is more common in countries where fresh CMWs are recently deployed such as Pakistan (15,16).
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7 Another reason for the community acceptance of TBAs is that they are affordable option than professional
8 midwives and she often accepts payment in kind (17). Moreover, TBAs are always happy to make house
9 visits, warranting mother's privacy.
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17 Pakistan is among the few countries in South Asia that continues to have dismal maternal and child
18 health indicators. In Pakistan, Maternal Mortality Ratios (MMR) is high, ranging from 240 to 700 per
19 100,000 live births. The top three causes of maternal death are postpartum hemorrhage, eclampsia and
20 sepsis. Approximately two-thirds of all births (61%) take place at home due to limited access to health
21 facilities. Home based deliveries are usually attended by the TBA and now newly deployed community
22 midwives in some rural parts of the country (18). While some maternity care indicators appear to have
23 improved over the last two decades, women's access to prenatal health care continues to be low in
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31 Pakistan¹⁸.
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35 Realizing the need for community health work force, Government of Pakistan launched the national
36 MNCH program in 2006 to help the rural women deliver safely (19). Although the program has been
37 successful in countries such as Malaysia and Indonesia, challenges faced by the CMW program of
38 Pakistan are multifaceted. These challenges are related to acceptance by community, competition with
39 other service providers, weak referral system, inadequate skill set and lack of community involvement
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48 **The intervention**

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50 To address health system constraints, Chitral Child Survival Program (CCSP) of Aga Khan Foundation
51 Pakistan (AKF-P) deployed CMWs, supported community financing scheme, improved referral linkages
52 and implemented a behavior change communication campaign from 2008-2014. CCSP was implemented
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57 in close partnership of Department of Health, Khyber Pakhtunkhwa, Aga Khan Health Services Pakistan
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3 (AKHSP), and Aga Khan Rural Support Program (AKRSP). The CCSP interventions, especially the role of
4 community based saving groups, village health committees (VHCs) and community based emergency
5 maternal referral mechanism to achieve project results showed that CCSP had attempted to engage the
6 TBAs proactively. The project empowered TBAs on Birth Preparedness and Complications Readiness
7 (BPCR) plans and integrated referral mechanisms. Involvement of TBAs in the project was meaningful to
8 generate the community acceptability for young CMWs, identification of high risk cases, and referrals of
9 complications to CMW and transporting pregnant woman to health facility in time.
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19 This research endeavored to identify the role of TBAs in supporting the MNCH care, partnership
20 mechanism with the formal health system and also explored livelihood options for TBAs.
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25 **Methodology**

26 **a) Study site**

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28 The study was conducted in Chitral district, north western border of Pakistan, from March-April 2014.
29 The population of the intervention area is 200,000, about 57% of the total population of the district
30 and residing in 243 villages. The government department of health and Aga Khan Health Services
31 Pakistan (AKHSP) are the two primary formal sector healthcare providers in Chitral. The public-sector
32 healthcare infrastructure in the district includes 22 civil dispensaries, 21 basic health units; three tehsil
33 headquarters and one district headquarter hospital (21). AKHSP operates its own 32 health facilities
34 in Chitral which include 17 health centers, eight family health centers, four dispensaries and three
35 secondary care facilities, covering 60% of Chitral district. The MMR in the province is 275/100,000
36 live births; whereas under five mortality is 75/1000 live births (1849). Despite the presence of skilled
37 birth attendants under MNCH program, large proportion of the deliveries is still attended by TBAs in
38 Chitral district.
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52 **b) Study Design and data collection**

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54 The project documents and other relevant studies were thoroughly reviewed and the collated
55 information guided to design the qualitative data collection instruments. A qualitative exploratory
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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
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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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> -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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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.

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3 “TBA still has the critical role as being more in proximity to the village women. She enjoys far more trust of
4 the communities. She has a years’ long rapport with the families. People tend to follow her advice.”
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7 (Director Health, AKF-P)
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11 “I consider the role of TBAs important for two reasons; firstly they have been trusted by the communities,
12 so they need to be taken on board for enhancing referrals to CMWs. Secondly, if they are not engaged
13 properly then they will do more harm by doing deliveries and might spread negative propaganda too
14 about the CMWs”. (KII-AKF-P Senior Program Officer)
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21 “I take my wife and child to CMW to see for medical help or treatment for maternal and child health
22 problems? In our village, Dai (TBA) enjoys good relationship with the CMW”. (FGD-VHC, Morder)”
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27 “My family often seeks services from a TBA...she has all the experience.” (FGD-VHC, Morder)
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31 “The TBAs are working since long time and they have developed trust in the communities”. (KII, AKHSP
32 Manager)
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35 36 37 **Linkage of TBAs with formal health system**

38 TBAs have pivotal role in health promotion activities such as health messages on nutrition, breast
39 feeding, and vaccination promotion. Viewpoints of participants revealed that TBAs can be mainstreamed
40 in a formal health system by assigning health promotion activities and for referring high risk cases to
41 CMW and health facility.
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48 “The TBAs have role in referring of high risk cases and expectant mothers for delivery to CMWs. TBAs
49 are also playing very good role in the community in identifying pregnant mothers during 1st trimester in the
50 community, arranging TT vaccinations and providing education on nutrition during pregnancy.” (GM,
51 AKHSP)
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3 *“They (TBAs) must be linked with the formal health system especially for health promotion, referrals and*
4 *assisting deliveries with CMWs, when needed” (FGD-VHC, Morder)*
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8 9 **Role of TBAs in supporting obstetric care**

10 TBAs have pivotal role in terms of identifying pregnancy related complications and assisting safe obstetric
11 care services with CMWs. Traditionally, TBAs have been involved in the promotion of better nutrition
12 practices for pregnant mothers, breastfeeding practices, TT vaccination of expectant mothers, prevention
13 of neonatal hypothermia, and post-natal care including family planning. TBAs have a crucial role in
14 strengthening referral and coordination mechanisms with CMWs and with the health facility. Findings of
15 the KIIs and FGDs revealed that some TBAs were even involved in assisting deliveries with CMWs.
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25 *“Many TBAs, no doubt have a sound folk wisdom, which can be used for various health promotion*
26 *messages, especially where there is no other community health worker. Moreover, TBAs can be trained*
27 *in providing antenatal care, TT vaccine, Misoprostol administration, recognizing the danger signs of*
28 *pregnancy etc. This will give her a feeling that she still has a role to play in saving women’s lives.”*
29 *(Director Health, AKF-P)*
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37 *“TBAs promote breastfeeding and healthy nutritional practices in our community for mother and children;*
38 *and they can keep on doing that”. (FGD-VHC, Morder)*
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43 *“In my village, TBA assists delivery with me and refers cases to me. I have to say that she is of great help*
44 *for me”. (FGD-CMWs, Parsan)*
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49 *“They (TBAs) said, they do refer cases to them and in many cases have joined CMWs for conducting*
50 *deliveries.” (KII-AKF-P Senior Program Officer)*
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53 54 **Linkages and coordination mechanisms among TBAs and CMWs**

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3 Lack of role clarity, physical inaccessibility, professional rivalry and few income opportunities are key
4 factors for weak linkages between TBAs and CMWs. Some of the CMWs expressed that they
5 encountered problems and resistance from the TBAs and community during the initial phase of
6 deployment. Village health committee shared that they invite both TBAs and CMWs in the VHC meetings.
7 Performance of TBAs vis-à-vis skills related to maternal and newborn health is not satisfactory. Therefore,
8 they now go to the CMWs who have adequate competency in knowledge and skills about the obstetric
9 care. Some of the members shared that TBAs refer complicated expectant mothers to CMWs and health
10 facility. In few instances, TBA was seen to be assisting the CMW in deliveries.
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21 *“Rivalry; both are birth attendants; one is practicing by virtue of folk knowledge and the other is trained*
22 *according to modern guidelines and WHO standards. So that has created a competition. At places, there*
23 *is coordination too, where both are from the same family or where both have realized each other’s*
24 *importance.” (Director Health, AKF-P)*
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31 *“The issues between TBA and CMW can be effectively dealt if AKHSP works with all stakeholders and set*
32 *out a proper coordination plan, and play catalytic role to nurture a health relationship.” (KII-AKF-P, Senior*
33 *Program Officer)*
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39 *“In some areas of intervention, the TBA perceived CMW as competitor.” (GM, AKHSP)*
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43 *“Introduction of CMWs in the areas will limit the role of TBAs. To cope with this challenge the TBAs were*
44 *included in the VHCs and the roles/responsibilities of the CMWs were communicated through this*
45 *platform”. (KII, AKRSP Manager)*
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50 *“Many TBAs are in favor of CMWs because they cannot handle the complicated cases properly; yet some*
51 *are against her. VHC is trying to bring the TBA as member in VHC and told them about the importance of*
52 *deliveries by skilled hand and hygienic way.” (FGD-VHC, Morder)*
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3 According to CMWs, they have high regard for the TBA, her experience and wisdom. They feel that TBA
4 can complement their work. On the other hand, most TBAs are satisfied with CMWs work, skills and
5 services rendered to the community women. Very few seem to be unhappy indeed.
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10 11 **Livelihood and sustainability of TBAs**

12 Supporting role of TBAs is very important; especially in context of difficult geographical terrains in Chitral.
13 Various options as well as mechanisms were identified by the respondents, when asked about livelihood
14 prospects of TBAs. Most of the respondents were of opinion that CMWs must pay some incentives to
15 TBAs to strengthen referrals and assistance in skilled delivery. Findings of the KII revealed that one of the
16 available forums to decide TBAs incentives is village committee. VHCs and other available forums such
17 as Local Support organizations (LSOs) can play pivotal role in taking up such decisive role for supporting
18 livelihood options for TBAs. Regarding payment to TBAs, some of the CMWs did not recompense TBAs.
19 Some of the TBAs also told that they get in kind contributions and support for her services from the village
20 families and not from the CMWs.
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33 *"It is an informal arrangement between the two of them. Officially there is no binding on the CMW to pay TBA for*
34 *referrals."* (Director Health, AKF-P)
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39 *"One of the CMW referred two cases to CMWs, and in fact she did join her for conducting the deliveries, but in*
40 *return did not get anything from the CMW and the family too."* (KII-AKF-P, Senior Program Officer)
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45 *"Let it be the VHC meeting to decide about some incentives to be given to TBAs from CMW fee, because*
46 *she will be referring every case to CMW. CMW should provide some money to TBA".* (KII, AKHSP
47 *Manager)*
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50 *"TBAs were providing delivery services before CMWs' deployment; hence CMWs' services will certainly affect*
51 *their regular income (in cash or in kind). CMW should give incentive from her service fee to TBAs on each*
52 *referral; whereas TBA can continue providing care to mother after delivery".* (KII, Manager Programs, AKHSP)
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3 *"In our area, CMW is paying Rs200 to the TBA for each referral". (FGD-VHC, Morder)*
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7 *"In two cases, I assisted CMW for delivery of a mother. CMW did not give me any money. I got some*
8 *cash and chicken from the house of delivered mother". (FGD-TBA, Lower Porth)*
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11 12 13 **Discussion**

14
15 Though communities where CMWs are deployed after training are happy, yet the continued utilization of
16 TBAs' services in Chitral. Fact is attributed to several factors including the TBAs' proximity to several
17 villages, TBAs' respectful attitude toward the community, and flexible modes of payment (22,23). CMWs
18 have been recently deployed in Chitral and experienced challenges and constraints by community based
19 health providers and community itself in delivery of maternal health services (24,25). Evidence suggests
20 that health management committees at the village level have been effective in reducing maternal
21 complications through promoting linkages of health care providers with the community (26). The findings
22 of our study also revealed that community forum in the form of VHC has played pivotal role in convincing
23 the communities to avail CMW services and motivate the TBA to continue in supportive role in MNCH
24 care. Awareness sessions have to be conducted on regular basis and on different forums to better
25 inform the elder women and expecting mothers about the benefits of making use of skilled birth attendant
26 i.e. CMW.
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41 Results of our study found that TBAs play vital role in improving maternal health such as diagnosing
42 labor, assisting clean delivery with CMWs, detecting and referring maternal complications, and promoting
43 health messages. While trained TBAs are not considered skilled birth attendants, their potential
44 contribution in supporting maternal care has been recognized in low income and middle countries facing
45 issues of human response scarcity (12, [Error! Bookmark not defined.](#)¹³). Role of TBAs in administration
46 of misoprostol to prevent postpartum hemorrhage in home-births is oft-advocated (27,28). Nevertheless,
47 the role of TBAs in supporting MNCH care cannot be neglected in settings where skilled birth attendants
48 are fewer and new to health system. In the wake of reforms and the novel MNCH program of Pakistan,
49 role of TBAs in improving maternal care and transforming health seeking behaviours ought to be
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3 promoted (29). Defining her role and contribution in the continuum of care is linked to her livelihood and
4
5 income generation.
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9 Improved linkages and relationship among CMWs and TBAs is of essence to flourish referral system from
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11 community to health facility. Better coordination and collaboration of TBAs with CMWs was promoted
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13 under CCSP, by sensitizing the CMW on prospective role of TBA which will complement her services and
14
15 will help in building her rapport with the community. TBA, who has a long standing link with local
16
17 community, can act as a bridge to strengthen referral mechanism between community and the formal
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19 health system (1524). Findings of the qualitative study follow other studies which demonstrated that a
20
21 formal partnership program among TBAs and the skilled midwives has yet to be seen (56) While the
22
23 importance of the TBAs role in referral is universally acknowledged, most health systems have not
24
25 developed an effective referral mechanism. The CCSP project provided an enabling forum at the village
26
27 level for CMWs and TBAs to interact and improve referral linkages. Such partnership is crucial to improve
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29 access to health care services, especially for communities living in the remote areas. Nevertheless,
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31 training and monitoring TBAs on MNCH care is imperative to minimize chances of malpractices (13).
32
33 Therefore, joint monitoring by AKHSP and government, by involving the village health committees could
34
35 be instrumental in this regard. Moreover, participatory monitoring is always less threatening; and hence
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37 TBAs should be meaningfully engaged in such type of monitoring.
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41 Financial constraints are a major risk to the livelihood of TBAs as evident from the findings of our study.
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43 Mostly they are receiving in kind payments by the family of expectant mothers; and a nominal payment by
44
45 CMWs for each referral. CMWs must keep a cushion of nominal payment to TBA, after verifying her
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47 services. That will surely help in building a healthy relationship amongst the two service providers. Where
48
49 TBAs did not receive any share from the CMWs, we found weak coordination mechanisms with the formal
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51 health system. Evidence suggests that in kind contributions by clients are the most common mode of
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53 payment by the clients (89,1044). With the increasing use of TBAs in MNCH care, the question of
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55 compensation has become more pressing because these workers usually rely on rewards and in kind
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57 contributions by the clients (30). Continuing efforts to define the role of TBAs may benefit from an
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3 emphasis on their potential as active promoters of essential newborn care (31). In the context of Pakistan,
4 the role of TBAs ought to be revisited and redefined, not only for the sake of trust of communities on her
5 services, but also for her own livelihood.
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10 11 **Conclusion**

12
13 Prevailing poverty in the area calls for thinking solutions to ensure livelihood of TBAs, and to figure out an
14 emerging role for her after the introduction of CMW in the health system. TBAs surely have solutions in
15 the continuum of care for pregnant women, lactating mothers and children under five. They continue to
16 take pride and see value in their role in the health system to support MNCH care. Health systems
17 performance can be amplified by having a healthy interface between the TBAs and CMWs, and for the
18 larger benefit of the communities served.
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27 **Acknowledgement:**

28
29 The authors acknowledge the facilitation and assistance provided by AKF-P, AKHSP and AKRSP to carry
30 out field data collection.
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35 **Ethical consideration:**

36
37 Ethics approval for this study was granted by the Institutional Review Board of Aga Khan Health Services,
38 Pakistan. Verbal informed consent was obtained from all the study participants, after explaining the
39 objectives of the study. Confidentiality and anonymity was assured to all the participants. Data was kept
40 under lock and key with the principal researcher.
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46 **Authors' contributions**

47
48 BTS and SAK conceived the study design and instruments. AM supervised the data collection and helped
49 in analyses. BTS and SAK drafted the successive drafts of paper. SA conducted the critical review and
50 added the intellectual content to the paper. All authors read and approved the final draft.
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Competing Interests

The authors declare that they have no competing interests.

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

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21 **Running title:** Role of traditional birth attendants

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60**Abstract:**

IntroductionObjectives: 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 identifyre-define the role of TBAs in supporting the MNCH care now provided mainly by the trained community midwives (CMWs), to mainstreaming 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.

MethodsParticipants: 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 conduct 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 continuedly 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,

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9 [it would be worthwhile to do further research to look into the CMW's integration in the system, as well as](#)
10 [TBA's continued role for provision of MNCH care.](#)
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12
13 **Keywords:** Maternal Newborn & Child Health, Traditional birth attendant, Community midwife, Qualitative
14 research, Pakistan.
15

16 17 18 **Strengths & Limitations of the study**

19
20 [A study, first of its kind, which has expounded on the subject of TBAs role and livelihood after the](#)
21 [introduction of trained MNCH providers in Pakistan.](#) Use of qualitative methods provided rich insight into
22 women's interpretations and decision-making regarding health care seeking during and after pregnancy in
23 a relatively conservative setting of Pakistan. [Study presents views of all stakeholders involved in the](#)
24 [intervention.](#)
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29 The findings represent a specific sample size, study site and socio-cultural milieu and therefore may not
30 be generalized for the entire province or country. [Health providers involved in the study were mainly from](#)
31 [AKHSP and government who were already exposed to this intervention. Only few TBAs could be](#)
32 [gathered for discussion, because most of them were remotely located, and weather and family](#)
33 [constraints did not allow them to travel. Moreover, the prospective role of TBA is discussed in a special](#)
34 [context, whereby a CMW was trained and deployed in the area for increasing skilled birth attendance.](#)
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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

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9 improving referral mechanism and links with the formal health care system (14). Literature review has
10 suggested that a TBA is preferred over a midwife who is young, unmarried girl and without children. This
11 trend is more common in countries where fresh CMWs are recently deployed such as Pakistan (15,16).
12 Another reason for the community acceptance of TBAs is that they are affordable option than professional
13 midwives and she often accepts payment in kind (17). Moreover, TBAs are always happy to make house
14 visits, warranting mother's privacy.
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20 Pakistan is among the few countries in South Asia that continues to have dismal maternal and child
21 health indicators. In Pakistan, Maternal Mortality Ratios (MMR) is high, ranging from 240 to 700 per
22 100,000 live births. The top three causes of maternal death are postpartum hemorrhage, eclampsia and
23 sepsis. Approximately two-thirds of all births (61%) take place at home due to limited access to health
24 facilities. Home based deliveries are usually attended by the TBA and now newly deployed community
25 midwives in some rural parts of the country (18). While some maternity care indicators appear to have
26 improved over the last two decades, women's access to prenatal health care continues to be low in
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31 Pakistan¹⁸.

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

46 To address health system constraints, Chitral Child Survival Program (CCSP) of Aga Khan Foundation
47 Pakistan (AKF-P) deployed CMWs, supported community financing scheme, improved referral linkages
48 and implemented a behavior change communication campaign from 2008-2014. CCSP was implemented
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51 in close partnership of Department of Health, Khyber Pakhtunkhwa, Aga Khan Health Services (AKHSP);
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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 ([1849](#)). 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 & DHDGovernment)	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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> -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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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

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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.

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"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)

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"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

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~~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)

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"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)

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9 *"TBAs were providing delivery services before CMWs' deployment; hence CMWs' services will certainly affect*
10 *their regular income (in cash or in kind). CMW should give incentive from her service fee to TBAs on each*
11 *referral; whereas TBA can continue providing care to mother after delivery". (KII, Manager Programs, AKHSP)*
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15 *"In our area, CMW is paying Rs200 to the TBA for each referral". (FGD-VHC, Morder)*
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18 *"In two cases, I assisted CMW for delivery of a mother. CMW did not give me any money. I got some*
19 *cash and chicken from the house of delivered mother". (FGD-TBA, Lower Porth)*
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22 Discussion

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24 Though communities where CMWs are deployed after training are happy, yet t
25 he continued utilization of
26 TBAs' services in Chitral. Fact -is attributed to several factors including the TBAs' proximity to several
27 villages, TBAs' respectful attitude toward the community, and flexible modes of payment (22,23). CMWs
28 have been recently deployed in Chitral and experienced challenges and constraints by community based
29 health providers and community itself in delivery of maternal health services (24,25). Evidence suggests
30 that health management committees at the village level have been effective in reducing maternal
31 complications through promoting linkages of health care providers with the community (26). The findings
32 of our study also revealed that community forum in the form of VHC has played pivotal role in convincing
33 the communities to avail CMW services and motivate the TBA to continue in supportive role in MNCH
34 care. ~~linking TBAs and CMWs with the community members.~~ Awareness sessions have to be conducted
35 on regular basis and on different forums to better inform the elder women and expecting mothers about
36 the benefits of making use of skilled birth attendant i.e. CMW.
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45 Results of our study found that TBAs play vital role in improving maternal health such as diagnosing
46 labor, assisting clean delivery with CMWs, detecting and referring maternal complications, and promoting
47 health messages. While trained TBAs are not considered skilled birth attendants, their potential
48 contribution in supporting maternal care has been recognized in low income and middle countries facing
49 issues of human response scarcity (12, [Error! Bookmark not defined.](#)¹³). Role of TBAs in administration
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9 of misoprostol to prevent postpartum hemorrhage in home-births is oft-advocated (27,28). Nevertheless,
10 the role of TBAs in supporting MNCH care cannot be neglected in settings where skilled birth attendants
11 are fewer and new to health system. In the wake of reforms and the novel MNCH program of Pakistan,
12 role of TBAs in improving maternal care and transforming health seeking behaviours ought to be
13 promoted (29). Defining her role and contribution in the continuum of care is linked to her livelihood and
14 income generation.
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20 Improved linkages and relationship among CMWs and TBAs is of essence to flourish referral system from
21 community to health facility. Better coordination and collaboration of TBAs with CMWs was promoted
22 under CCSP, by sensitizing the CMW on prospective role of TBA which will complement her services and
23 will help in building her rapport with the community. TBA, who has a long standing link with local
24 community, can act as a bridge to strengthen referral mechanism between community and the formal
25 health system (1524). Findings of the qualitative study follow other studies which demonstrated that a
26 formal partnership program among TBAs and the skilled midwives has yet to be seen (56). While the
27 importance of the TBAs role in referral is universally acknowledged, most health systems have not
28 developed an effective referral mechanism. The CCSP project provided an enabling forum at the village
29 level for CMWs and TBAs to interact and improve referral linkages. Such partnership is crucial to improve
30 access to health care services, especially for communities living in the remote areas. Nevertheless,
31 training and monitoring TBAs on MNCH care is imperative to minimize chances of malpractices (13).
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39 Therefore, joint monitoring by AKHSP and government, by involving the village health committees could
40 be instrumental in this regard. Moreover, participatory monitoring is always less threatening; and hence
41 TBAs should be meaningfully engaged in such type of monitoring.
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45 Financial constraints are a major risk to the livelihood of TBAs as evident from the findings of our study.
46 Mostly they are receiving in kind payments by the family of expectant mothers; and a nominal payment by
47 CMWs for each referral. CMWs must keep a cushion of nominal payment to TBA, after verifying her
48 services. That will surely help in building a healthy relationship amongst the two service providers. Where
49 TBAs did not receive any share from the CMWs, we found weak coordination mechanisms with the formal
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health system. Evidence suggests that in kind contributions by clients are the most common mode of payment by the clients (89,1044). 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.

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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

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9 BTS and SAK conceived the study design and instruments. AM supervised the data collection and helped
10 in analyses. BTS and SAK drafted the successive drafts of paper. SA conducted the critical review and
11 added the intellectual content to the paper. All authors read and approved the final draft.
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16

17 **Competing Interests**

18 The authors declare that they have no competing interests.
19

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BMJ Open

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

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3 **Abstract:**
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5 **Objectives:** This research endeavors to to identify the role of TBAs in supporting the MNCH care,
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7 partnership mechanism with the formal health system and also explored livelihood options for TBAs in the
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9 health system of Pakistan.
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13 **Setting:** The study was conducted in District Chitral, Khyber Pakhtunkhwa province, covering the areas
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15 where Chitral Child Survival programme was implemented.
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19 **Participants:** A qualitative exploratory study was conducted, comprising seven Key informant interviews
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21 (KIIs) with health managers, and four focus group discussions (FGDs) with CMWs, TBAs, members of
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23 CBSG and members of Village Health Committees (VHCs).
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27 **Results:** The study identified that In the new scenario, after the introduction of CMW in the health
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29 system, TBAs still have a pivotal role in health promotion activities such as breast feeding promotion and
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31 vaccination. TBAs can assist CMWs in normal deliveries, and refer high risk cases to formal health
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33 system. Generally, TBAs are positive about CMWs' introduction and welcome this addition. Yet, their
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35 livelihood has suffered after CMWs deployment. Monetary incentives to them in recognition of referrals to
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37 CMWs could be one solution. VHC is an active forum for strengthening coordination between the two
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39 service providers and to ensure an alternate and permanent livelihood support system for the TBAs.
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43 **Conclusion:** TBAs assured their continued support in provision of continuum of care for pregnant
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45 women, lactating mothers and children under five. The district health authorities must figure out ways to
46
47 foster a healthy interface vis-à-vis roles and responsibilities of TBAs and CMWs. After some time, it would
48
49 be worthwhile to do further research to look into the CMW's integration in the system, as well as TBA's
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51 continued role for provision of MNCH care.
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55 **Keywords:** Maternal Newborn & Child Health, Traditional birth attendant, Community midwife, Qualitative
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57 research, Pakistan.
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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

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3 improving referral mechanism and links with the formal health care system (14). Literature review has
4 suggested that a TBA is preferred over a midwife who is young, unmarried girl and without children. This
5 trend is more common in countries where fresh CMWs are recently deployed such as Pakistan (15,16).
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7 Another reason for the community acceptance of TBAs is that they are affordable option than professional
8 midwives and she often accepts payment in kind (17). Moreover, TBAs are always happy to make house
9 visits, warranting mother's privacy.
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17 Pakistan is among the few countries in South Asia that continues to have dismal maternal and child
18 health indicators. In Pakistan, Maternal Mortality Ratios (MMR) is high, ranging from 240 to 700 per
19 100,000 live births. The top three causes of maternal death are postpartum hemorrhage, eclampsia and
20 sepsis. Approximately two-thirds of all births (61%) take place at home due to limited access to health
21 facilities. Home based deliveries are usually attended by the TBA and now newly deployed community
22 midwives in some rural parts of the country (18). While some maternity care indicators appear to have
23 improved over the last two decades, women's access to prenatal health care continues to be low in
24 Pakistan¹⁸.
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35 Realizing the need for community health work force, Government of Pakistan launched the national
36 MNCH program in 2006 to help the rural women deliver safely (19). Although the program has been
37 successful in countries such as Malaysia and Indonesia, challenges faced by the CMW program of
38 Pakistan are multifaceted. These challenges are related to acceptance by community, competition with
39 other service providers, weak referral system, inadequate skill set and lack of community involvement
40 (20).
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49 **The intervention**

50 To address health system constraints, Chitral Child Survival Program (CCSP) of Aga Khan Foundation
51 Pakistan (AKF-P) deployed CMWs, supported community financing scheme, improved referral linkages
52 and implemented a behavior change communication campaign from 2008-2014. CCSP was implemented
53 in close partnership of Department of Health, Khyber Pakhtunkhwa, Aga Khan Health Services Pakistan
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3 (AKHSP), and Aga Khan Rural Support Program (AKRSP). The CCSP interventions, especially the role of
4 community based saving groups, village health committees (VHCs) and community based emergency
5 maternal referral mechanism to achieve project results showed that CCSP had attempted to engage the
6 TBAs proactively. The project empowered TBAs on Birth Preparedness and Complications Readiness
7 (BPCR) plans and integrated referral mechanisms. Involvement of TBAs in the project was meaningful to
8 generate the community acceptability for young CMWs, identification of high risk cases, and referrals of
9 complications to CMW and transporting pregnant woman to health facility in time.
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19 This research endeavored to identify the role of TBAs in supporting the MNCH care, partnership
20 mechanism with the formal health system and also explored livelihood options for TBAs.
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25 **Methodology**

26 **a) Study site**

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

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52 The project documents and other relevant studies were thoroughly reviewed and the collated
53 information guided to design the qualitative data collection instruments. A qualitative exploratory
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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
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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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> -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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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.

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3 “TBA still has the critical role as being more in proximity to the village women. She enjoys far more trust of
4 the communities. She has a years’ long rapport with the families. People tend to follow her advice.”
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7 (Director Health, AKF-P)
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11 “I consider the role of TBAs important for two reasons; firstly they have been trusted by the communities,
12 so they need to be taken on board for enhancing referrals to CMWs. Secondly, if they are not engaged
13 properly then they will do more harm by doing deliveries and might spread negative propaganda too
14 about the CMWs”. (KII-AKF-P Senior Program Officer)
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21 “I take my wife and child to CMW to see for medical help or treatment for maternal and child health
22 problems? In our village, Dai (TBA) enjoys good relationship with the CMW”. (FGD-VHC, Morder)”
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27 “My family often seeks services from a TBA...she has all the experience.” (FGD-VHC, Morder)
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31 “The TBAs are working since long time and they have developed trust in the communities”. (KII, AKHSP
32 Manager)
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36 **Linkage of TBAs with formal health system**

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38 Viewpoints of participants revealed that TBAs can be mainstreamed in a formal health system by
39 assigning health promotion activities and for referring high risk cases to CMW and health facility.
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44 “The TBAs have role in referring of high risk cases and expectant mothers for delivery to CMWs. TBAs
45 are also playing very good role in the community in identifying pregnant mothers during 1st trimester in the
46 community, arranging TT vaccinations and providing education on nutrition during pregnancy.” (GM,
47 AKHSP)
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54 “They (TBAs) must be linked with the formal health system especially for health promotion, referrals and
55 assisting deliveries with CMWs, when needed” (FGD-VHC, Morder)
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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

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

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

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

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25 *“In some areas of intervention, the TBA perceived CMW as competitor.” (GM, AKHSP)*

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

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37 Performance of TBAs vis-à-vis skills related to maternal and newborn health is not satisfactory. Therefore,
38 they now go to the CMWs who have adequate competency in knowledge and skills about the obstetric
39 care. Some of the members shared that TBAs refer complicated expectant mothers to CMWs and health
40 facility. In few instances, TBA was seen to be assisting the CMW in deliveries. Nonetheless, where TBAs
41 did not receive any share from the CMWs, we found weak coordination mechanisms with the formal
42 health system.
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51 *“Many TBAs are in favor of CMWs because they cannot handle the complicated cases properly; yet some*
52 *are against her. VHC is trying to bring the TBA as member in VHC and told them about the importance of*
53 *deliveries by skilled hand and hygienic way.” (FGD-VHC, Morder)*
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3 According to CMWs, they have high regard for the TBA, her experience and wisdom. They feel that TBA
4 can complement their work. On the other hand, most TBAs are satisfied with CMWs work, skills and
5 services rendered to the community women. Very few seem to be unhappy indeed.
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10 11 **Livelihood and sustainability of TBAs**

12 Supporting role of TBAs is very important; especially in context of difficult geographical terrains in Chitral.
13 Various options as well as mechanisms were identified by the respondents, when asked about livelihood
14 prospects of TBAs. Most of the respondents were of opinion that CMWs must pay some incentives to
15 TBAs to strengthen referrals and assistance in skilled delivery. Findings of the KII revealed that one of the
16 available forums to decide TBAs incentives is village committee. VHCs and other available forums such
17 as Local Support organizations (LSOs) can play pivotal role in taking up such decisive role for supporting
18 livelihood options for TBAs. Regarding payment to TBAs, some of the CMWs did not recompense TBAs.
19 Some of the TBAs also told that they get in kind contributions and support for her services from the village
20 families and not from the CMWs.
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33 *"It is an informal arrangement between the two of them. Officially there is no binding on the CMW to pay TBA for*
34 *referrals."* (Director Health, AKF-P)
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39 *"One of the CMW referred two cases to CMWs, and in fact she did join her for conducting the deliveries, but in*
40 *return did not get anything from the CMW and the family too."* (KII-AKF-P, Senior Program Officer)
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45 *"Let it be the VHC meeting to decide about some incentives to be given to TBAs from CMW fee, because*
46 *she will be referring every case to CMW. CMW should provide some money to TBA".* (KII, AKHSP
47 *Manager)*
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50 *"TBAs were providing delivery services before CMWs' deployment; hence CMWs' services will certainly affect*
51 *their regular income (in cash or in kind). CMW should give incentive from her service fee to TBAs on each*
52 *referral; whereas TBA can continue providing care to mother after delivery".* (KII, Manager Programs, AKHSP)
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3 *"In our area, CMW is paying Rs200 to the TBA for each referral". (FGD-VHC, Morder)*
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7 *"In two cases, I assisted CMW for delivery of a mother. CMW did not give me any money. I got some*
8 *cash and chicken from the house of delivered mother". (FGD-TBA, Lower Porth)*
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11 12 13 **Discussion**

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15 Though communities where CMWs are deployed after training are happy, yet the continued utilization of
16 TBAs' services in Chitral. Fact is attributed to several factors including the TBAs' proximity to several
17 villages, TBAs' respectful attitude toward the community, and flexible modes of payment (22,23). CMWs
18 have been recently deployed in Chitral and experienced challenges and constraints by community based
19 health providers and community itself in delivery of maternal health services (24,25). Evidence suggests
20 that health management committees at the village level have been effective in reducing maternal
21 complications through promoting linkages of health care providers with the community (26). The findings
22 of our study also revealed that community forum in the form of VHC has played pivotal role in convincing
23 the communities to avail CMW services and motivate the TBA to continue in supportive role in MNCH
24 care. Awareness sessions have to be conducted on regular basis and on different forums to better inform
25 the elder women and expecting mothers about the benefits of making use of skilled birth attendant i.e.
26 CMW.
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41 Results of our study found that TBAs play vital role in improving maternal health such as diagnosing
42 labor, assisting clean delivery with CMWs, detecting and referring maternal complications, and promoting
43 health messages. While trained TBAs are not considered skilled birth attendants, their potential
44 contribution in supporting maternal care has been recognized in low income and middle countries facing
45 issues of human response scarcity (12, **Error! Bookmark not defined.**). Role of TBAs in administration of
46 misoprostol to prevent postpartum hemorrhage in home-births is oft-advocated (27,28). Nevertheless, the
47 role of TBAs in supporting MNCH care cannot be neglected in settings where skilled birth attendants are
48 fewer and new to health system. In the wake of reforms and the novel MNCH program of Pakistan, role of
49 TBAs in improving maternal care and transforming health seeking behaviours ought to be promoted (29).
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3 Defining her role and contribution in the continuum of care is linked to her livelihood and income
4 generation.
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9 Improved linkages and relationship among CMWs and TBAs is of essence to flourish referral system from
10 community to health facility. Better coordination and collaboration of TBAs with CMWs was promoted
11 under CCSP, by sensitizing the CMW on prospective role of TBA which will complement her services and
12 will help in building her rapport with the community. TBA, who has a long standing link with local
13 community, can act as a bridge to strengthen referral mechanism between community and the formal
14 health system (15). Findings of the qualitative study follow other studies which demonstrated that a formal
15 partnership program among TBAs and the skilled midwives has yet to be seen (5) While the importance
16 of the TBAs role in referral is universally acknowledged, most health systems have not developed an
17 effective referral mechanism. The CCSP project provided an enabling forum at the village level for CMWs
18 and TBAs to interact and improve referral linkages. Such partnership is crucial to improve access to
19 health care services, especially for communities living in the remote areas. Nevertheless, training and
20 monitoring TBAs on MNCH care is imperative to minimize chances of malpractices (13). Nevertheless,
21 this training should be imparted by the government in its public sector nursing and midwifery schools.
22 However, joint monitoring by AKHSP and government, by involving the village health committees could
23 be instrumental in this regard. Moreover, participatory monitoring is always less threatening; and hence
24 TBAs should be meaningfully engaged in such type of monitoring. A systematic recording and periodic
25 analysis of information could be conducted by the TBAs themselves, with the help of public health
26 experts. The aim is to measure progress and to make any corrections en route.
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46 Financial constraints are a major risk to the livelihood of TBAs as evident from the findings of our study.
47 Mostly they are receiving in kind payments by the family of expectant mothers; and a nominal payment by
48 CMWs for each referral. CMWs must keep a cushion of nominal payment to TBA, after verifying her
49 services. That will surely help in building a healthy relationship amongst the two service providers. Where
50 TBAs did not receive any share from the CMWs, we found weak coordination mechanisms with the formal
51 health system. Evidence suggests that in kind contributions by clients are the most common mode of
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3 payment by the clients (8,10). With the increasing use of TBAs in MNCH care, the question of
4 compensation has become more pressing because these workers usually rely on rewards and in kind
5 contributions by the clients (30). Continuing efforts to define the role of TBAs may benefit from an
6 emphasis on their potential as active promoters of essential newborn care (31). In the context of Pakistan,
7 the role of TBAs ought to be revisited and redefined, not only for the sake of trust of communities on her
8 services, but also for her own livelihood.
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14 15 16 17 **Conclusion**

18
19 Prevailing poverty in the area calls for thinking solutions to ensure livelihood of TBAs, and to figure out an
20 emerging role for her after the introduction of CMW in the health system. TBAs surely have solutions in
21 the continuum of care for pregnant women, lactating mothers and children under five. They continue to
22 take pride and see value in their role in the health system to support MNCH care. Health systems
23 performance can be amplified by having a healthy interface between the TBAs and CMWs, and for the
24 larger benefit of the communities served.
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33 **Acknowledgement:**

34
35 The authors acknowledge the facilitation and assistance provided by AKF-P, AKHSP and AKRSP to carry
36 out field data collection.
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40 **Ethical consideration:**

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

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3 BTS and SAK conceived the study design and instruments. AM supervised the data collection and helped
4
5 in analyses. BTS and SAK drafted the successive drafts of paper. SA conducted the critical review and
6
7 added the intellectual content to the paper. All authors read and approved the final draft.
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10
11 **Funding:** The study was a part of larger project “Chitral Child Survival Program” funded by USAID.
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14 15 **Competing Interests**

16
17 The authors declare that they have no competing interests.
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Emerging role of traditional birth attendants in mountainous terrain: A qualitative exploratory study ~~of~~ from Chitral District, Pakistan

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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 (KIs) 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.

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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

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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

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9 (AKHSP), and Aga Khan Rural Support Program (AKRSP). The CCSP interventions, especially the role of
10 community based saving groups, village health committees (VHCs) and community based emergency
11 maternal referral mechanism to achieve project results showed that CCSP had attempted to engage the
12 TBAs proactively. The project empowered TBAs on Birth Preparedness and Complications Readiness
13 (BPCR) plans and integrated referral mechanisms. Involvement of TBAs in the project was meaningful to
14 generate the community acceptability for young CMWs, identification of high risk cases, and referrals of
15 complications to CMW and transporting pregnant woman to health facility in time.
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21 This research endeavored to identify the role of TBAs in supporting the MNCH care, partnership
22 mechanism with the formal health system and also explored livelihood options for TBAs.
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26 **Methodology**

27 **a) Study site**

28 The study was conducted in Chitral district, north western border of Pakistan, from March-April 2014.
29 The population of the intervention area is 200,000, about 57% of the total population of the district
30 and residing in 243 villages. The government department of health and Aga Khan Health Services
31 Pakistan (AKHSP) are the two primary formal sector healthcare providers in Chitral. The public-sector
32 healthcare infrastructure in the district includes 22 civil dispensaries, 21 basic health units; three tehsil
33 headquarters and one district headquarter hospital (21). AKHSP operates its own 32 health facilities
34 in Chitral which include 17 health centers, eight family health centers, four dispensaries and three
35 secondary care facilities, covering 60% of Chitral district. The MMR in the province is 275/100,000
36 live births; whereas under five mortality is 75/1000 live births (1849). Despite the presence of skilled
37 birth attendants under MNCH program, large proportion of the deliveries is still attended by TBAs in
38 Chitral district.
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48 **b) Study Design and data collection**

49 The project documents and other relevant studies were thoroughly reviewed and the collated
50 information guided to design the qualitative data collection instruments. A qualitative exploratory
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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
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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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> -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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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.

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

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

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

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

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

33 34 35 **Linkage of TBAs with formal health system**

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

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

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

13 **Role of TBAs in supporting obstetric care**

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

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

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

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

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

49 **Linkages and coordination mechanisms among TBAs and CMWs**

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9 Lack of role clarity, physical inaccessibility, professional rivalry and few income opportunities are key
10 factors for weak linkages between TBAs and CMWs. Some of the CMWs expressed that they
11 encountered problems and resistance from the TBAs and community during the initial phase of
12 deployment. Village health committee shared that they invite both TBAs and CMWs in the VHC meetings.
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15 ~~Performance of TBAs vis-à-vis skills related to maternal and newborn health is not satisfactory. Therefore,~~
16 ~~they now go to the CMWs who have adequate competency in knowledge and skills about the obstetric~~
17 ~~care. Some of the members shared that TBAs refer complicated expectant mothers to CMWs and health~~
18 ~~facility. In few instances, TBA was seen to be assisting the CMW in deliveries.~~
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23 *"Rivalry; both are birth attendants; one is practicing by virtue of folk knowledge and the other is trained*
24 *according to modern guidelines and WHO standards. So that has created a competition. At places, there*
25 *is coordination too, where both are from the same family or where both have realized each other's*
26 *importance."* (Director Health, AKF-P)
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31 *"The issues between TBA and CMW can be effectively dealt if AKHSP works with all stakeholders and set*
32 *out a proper coordination plan, and play catalytic role to nurture a health relationship."* (KII-AKF-P, Senior
33 *Program Officer)*
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37 *"In some areas of intervention, the TBA perceived CMW as competitor."* (GM, AKHSP)
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41 *"Introduction of CMWs in the areas will limit the role of TBAs. To cope with this challenge the TBAs were*
42 *included in the VHCs and the roles/responsibilities of the CMWs were communicated through this*
43 *platform".* (KII, AKRSP Manager)
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46 Performance of TBAs vis-à-vis skills related to maternal and newborn health is not satisfactory. Therefore,
47 they now go to the CMWs who have adequate competency in knowledge and skills about the obstetric
48 care. Some of the members shared that TBAs refer complicated expectant mothers to CMWs and health
49 facility. In few instances, TBA was seen to be assisting the CMW in deliveries. Nonetheless, where TBAs
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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)

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

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

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

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

25 26 27 **Discussion**

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

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

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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 ([1524](#)). 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 ([56](#)). 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.

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9 with the help of public health experts. The aim is to measure progress and to make any corrections en
10 route.
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14 Financial constraints are a major risk to the livelihood of TBAs as evident from the findings of our study.
15 Mostly they are receiving in kind payments by the family of expectant mothers; and a nominal payment by
16 CMWs for each referral. CMWs must keep a cushion of nominal payment to TBA, after verifying her
17 services. That will surely help in building a healthy relationship amongst the two service providers. Where
18 TBAs did not receive any share from the CMWs, we found weak coordination mechanisms with the formal
19 health system. Evidence suggests that in kind contributions by clients are the most common mode of
20 payment by the clients (89,104). With the increasing use of TBAs in MNCH care, the question of
21 compensation has become more pressing because these workers usually rely on rewards and in kind
22 contributions by the clients (30). Continuing efforts to define the role of TBAs may benefit from an
23 emphasis on their potential as active promoters of essential newborn care (31). In the context of Pakistan,
24 the role of TBAs ought to be revisited and redefined, not only for the sake of trust of communities on her
25 services, but also for her own livelihood.
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33 34 **Conclusion**

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

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48 out field data collection.
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60**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.

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Competing Interests

The authors declare that they have no competing interests.

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