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How far can I go? Social Mobility of Community Midwives in Azad Kashmir

A project funded by the Maternal and Newborn Health Programme Research and Advocacy Fund and implemented by Children First

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Research Report

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Disclaimer

Declaration

We have read the report titled ***"How far can I go? Social Mobility of CMWs in AJK"*** and acknowledge and agree with the information, data and findings contained.

Research Team

Principal Investigator:

Shahzad Ali Khan

Co-Investigators:

Tabinda Zaman, Bushra Shams, Majid Shehzad, Aashifa Yaqoob

Research Associates:

Ghulam Hussain, Naila Khalil, Sabine Khan, Adnan Qureshi, Abdul Sattar

Project Management:

Asif Hayat, Akhtar Hussain, Raja Omar, Saad Gillani

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LIST OF ABBREVIATIONS

AJK	Azad Jammu and Kashmir
BHU	Basic Health Unit
CMW	Community Midwife
CPR	Contraceptive Prevalence Rate
DHO	District Health Officer
DHQH	District Head Quarter Hospital
DDOH	Deputy District Officer Health
EmONC	Emergency Obstetric & Newborn Care
EPI	Extended Programme for Immunisation
FP	Family Planning
ICU	Intensive Care Unit
IMNCI	Integrated Management of Newborn & Childhood Illnesses
IMR	Infant Mortality Rate
IUCD	Intra-uterine Contraceptive Device
MDGs	Millennium Development Goals
MIS	Management Information System
MMR	Maternal Mortality Ratio
MS	Medical Superintendent
NMNCHP	National Maternal Newborn and Child Health Programme
NNMR	Neonatal Mortality Rate
OF	Obstetric Fistula
PC-1	Planning Commission-Performa 1
PHC	Primary Health care
PNC	Pakistan Nursing School
PPIU	Provincial Project Implementation Unit
RAF	Maternal and Newborn Health Programme Research and Advocacy Fund
Rep.	Representative
RHC	Rural Health Centre
SBA	Skilled Birth Attendant
THQ	Tehsil Headquarter Hospital
WHO	World Health Organisation

EXECUTIVE SUMMARY

This research project was initiated in February 2011 in all 10 district of AJK. The main objective of the research has been to assess the social mobility of community Midwives with reference to geographical and economic accessibility, social acceptability and relationship of these Midwives with other care providers.

It was a mixed method research conducted by the use of GIS Mapping of all the CMWs in AJK. Qualitative research methods using In-depth interviews and focus group discussions were used in all 10 districts. The quantitative survey comprising of 400 households with 300 female and 100 male respondents was conducted in each district.

The first project output was a GIS map of all CMWs in the10 districts of AJK with three layers. One, regional layer shows all CMWs in AJK in the image; second layer, of district level, shows availability of CMWs in each of the 10 districts; third layer at union council level is showing geographical placement of each CMW in each union council of the district. This GIS map also provides the availability and geographical placement of other providers like LHW, TBA, LHV, and health facilities such as BHU, RHC, THQ and DHQ.
Results of qualitative research methods show less social mobility of CMWs due to many issues like title of CMW, selection and training issues, lack of referral system from LHW to CMWs and problems in referral cases of CMWs to higher level health facilities. There are problems in practical level skill of CMWs, low acceptability by community, poor ownership and lack of linkage with other providers in the area; and issues of cost of services as being supported by government MNCH Department. Community thinks CMW should provide free services and must not charge her patients. Similarly there are issues of sustainability of CMW initiative, with drop out of CMWs from training, deployment and after two years when stipend may be stopped by MNCH Department.

The quantitative survey shows less awareness about availability of CMWs in their area and very less utilisation of their services. Poor knowledge about presence of CMWs in the area was evident as 90% of the respondents were unaware of the presence of CMWs in the area. It is supposed to be due to a deficient communication strategy and non-involvement of community at the time of deployment of CMWs. An important finding is that population using CMWs belongs to poor and less educated groups as compared to those who are not using her services. This finding is encouraging as it provides evidence that even if the coverage is very low, the CMWs are serving poor and

marginalized population groups in AJK. Most respondents in community are not aware of the user fees of CMWs and perceived cost of CMW services as being very high. Most respondents stated the perceived higher cost of CMWs as a reason of not using CMWs. Only those people are using the CMW services which are living within the proximity, at a walking distance from CMW's residence.

Findings recommend programmatic and policy changes such as selection of CMWs candidates from uncovered areas identified by GIS mapping; the involvement of community representatives to inspire community ownership; develop mechanisms for appropriate introduction of the CMWs in the community and with other health care providers; ensure immediate deployment of CMWs after passing exams; revise the training of CMWs to make it more practical and skill based; develop linkages of CMWS with LHWs; strengthened referral system; introduce incentives for high performing CMWs and rename the title CMWs to increase their motivation.

1. INTRODUCTION

Although Pakistan's progress in achieving MDGs 4 and 5 has been positive but it is also sluggish and slow; it seems difficult that the MDG targets will be achieved.[1] Maternal Mortality Ratio (MMR) dropped from 550/100,000 live births in 1990s to 276 in 2006-7, still high for the MDG target of 150/100,000.[2] One of the proxy indicators for assessing progress towards decreasing MMR is percentage of deliveries conducted by Skilled Birth Attendants (SBAs). This doubled from 20% in 2000 to 40% in 2007 in Pakistan, but still far behind the MDG target of 90% by 2015. The NMNCH Programme was launched in 2005 in order to achieve the objectives of the National MNCH Strategic Framework 2004.[3] An important component of NMNCH Programme was to train and deploy 12,000 Community Midwives (CMWs) in the country till 2012 through ensuring safer deliveries by adequately trained and skilled birth attendants. Of the targeted 12,000 CMWs, more than 4,700 had been trained by December 2011 by NMNCH Programme and other development partners including PAIMAN, UNICEF and UNFPA.

Community midwives deployed in Azad Kashmir, are deemed to provide maternal care services in scattered, hilly and far-flung areas in fragmented valleys, with issues of physical accessibility, and creating a vicious circle of social and economic deprivation. Given this scenario introducing CMWs in to the community was challenging as well as demanding. Currently we do not have evidence for optimal deployment of CMWs and using Lady Health Workers (LHW) rationale for population-allocation is questionable due to difference of roles and responsibilities of LHWs and CMWs.

An important dimension of CMWs acceptability is the economic aspect, evidenced by the community's limited ability to pay for CMWs services. As most CMWs draw on certain fee-for-service, their acceptability can be less in low socio-economic groups, thus limiting access among the poor population groups. Besides providing antenatal care and attending births these CMWs are supposed to provide advice on reproductive health and child care to women in the villages. In order to address these issues, especially in a resource-constrained, rural, socially excluded population groups CMWs must be equipped with excellent interpersonal communication skills.

Due to potential competition with existing health care providers (both traditional and modern) for clientele, the challenge is more daunting as CMWs can face issues of "value" due to limited branding. This pre-existing competition and her relationship with

other providers in area, has to be evaluated for identification of potential barriers, to develop solutions for possible integration.

In order to explore the issues of geographical outreach, acceptability, affordability and for identifying barriers in CMWs service outreach, a research project was undertaken through the support of Maternal and Newborn Health Programme Research and Advocacy Fund (RAF). This is the right time to address this issue to ensure and improve the social mobility of CMWs in programme outreach. Any evidence in this regard can help policy makers in MNCH Programme to devise future strategies,

THE PROFILE OF STATE OF AZAD JAMMU AND KASHMIR

State of Azad Jammu and Kashmir (AJK) comprises of an area of 13,297 square kilometres expanded over 10 districts. The topography of the area is mainly hilly and mountainous with valleys and stretches of plains. The area is full of natural beauty with thick forest, fast flowing rivers and winding streams. The climate is sub-tropical highland type with an average yearly rainfall of 1300 mm. [4]

According to the 1998 population census it had a population of 2.973 million, which is estimated to have grown to 3.9 million in 2011. Almost 100% population is Muslim. The rural to urban ratio is 88:12, and population density is 258 persons per Sq. Km. The literacy rate in AJK is 64% which is significantly higher than the national average of Pakistan. At present the gross enrolment rate at primary level is 95% for boys and 88% for girls (between ages of 5-9). AJK is divided into three divisions (Muzaffarabad, Mirpur & Poonch) and ten administrative districts with Muzaffarabad as the capital of the state.

The majority of the rural population depends on forestry, livestock and agriculture for its subsistence. Average per capita income is estimated to range from 600 -5,000 US$. Un-employment rate is very high and ranges from 35 to 50% in different areas. About 85% households have very small land-holdings between one to two acres per family, and the average farm size is only 1.2 hectares. The major crops are maize, wheat & rice whereas minor crops include vegetables, grams, pulses and oil-seeds. Major fruits are apple, pears, apricot and walnuts.[4]

HEALTH INDICATORS IN AJK

Health coverage in Azad Jammu & Kashmir is still inadequate. There are approximately 1880 hospital beds available in the area averaging one bed per 2007 people. The total number of doctors, including administrative doctors, health managers & dentists is 702 out of which there are 411 medical officers, 69 dental surgeons, 174 specialists and 48 health managers giving an average of 0.185 per 1000 population in respect of doctors; 0.109 Per 1000 population in respect of medical officers; 0.018 per 1000 population in respect of dentists; 0.046 per 1000 population in respect of specialists and 0.013 per 1000 population in respect of health managers, whereas only 30 hospital beds & 11 dispensaries were available in the area at the time of independence in 1947.

Table 1.1: demographic and health indicators of AJK [1]

Total population (2011)	3.908 Million
Average annual growth rate of population (2009)	2.41%
Urban population (%)	12%
Rural population (%)	88%
Life expectancy (2009)	61 Years
Literacy rate (2009)	64%
Child Mortality Rate (2009)	96 per 1000
Neonatal Mortality Rate (2009)	62 per 1000
Maternal Mortality Rate (2009)	201 per 100,000
Total Fertility Rate	4.0 Child per Women
Total government health expenditure (2011)	2842.486 (Million Rs.)
Government hospitals (2011)	20
Private for-profit hospitals (2011)	80
Private not-for profit hospitals (2011)	07
Primary health care facilities (RHC,BHU,CD,FAP) 2011	577
Total number of Hospital Beds and Ratio (2011)	1890 (One bed per 2007)
Number of Doctors (2011)	702 (M.Os 411)
Specialists (2011)	174
Per capita drug expenditure (2010)	Rs. 84 per person per Year

FEMALE STAFF IN AJK COMPAREED WITH OTHER PROVINCES

In primary health care setting, availability of female service providers tends to increase the service utilisation rate in the periphery and hence is a good input indicator. Availability of female service providers has direct relationship with maternal and newborn health indicators. The non-availability of female service providers affects utilisation of services and provinces having less female service providers have worse MNH indicators.[5] In Pakistan, the availability of female staff is not optimal in all the provinces, but it is very critical in AJK. There are very

[1] Department of Planning and Development, AJK;
Department of Health AJK, 2011;
AJK at a glance 2010;
Social Infrastructure of AJK 2012 http://www.ajk.gov.pk/index.php

less number of LHVs and Nurses which are not sufficient for the population health needs of the State of AJK (Table 1.2).

Table 1.2 Female Staff (by Province)

Provinces & AJK	Population (Millions)	Nurses	LHWs	LHVs
Punjab	94.5	4282	46720	2704
Sindh	41.1	3226	19987	400
Khyber Pakhtunkhwa	23.2	874	13044	8921
Balochistan	8.8	154	5710	544
FATA	4.1	94	1706	280
Pakistan	175	8761	90423	13053
AJK	3.9	131	2656	204

Source: NHIRC, 2011

AVAILABILITY OF BASIC AMENITIES AT RURAL HEALTH FACILITIES

Underutilisation of PHC facilities has multiple reasons; most common being the lack of health facilities in the health centres. But absence of basic amenities has also been linked with poor performance of centres, as well as non-utilisation of health services in the PHC setting in Pakistan. With reference to the availability of roads and basic amenities like water, electricity and toilets, the situation in AJK is very poor. Only 50% facilities have roads, 55% have electricity, 20% have water supply and only 21% have public toilet facilities in the region. [2] Detail of basic amenities with provincial comparison is given in Table 1.3.

Table 1.3: Basic amenities at PHC facilities (% By Province)

Province	Roads (%)	Electricity (%)	Water supply (%)	Public Toilets (%)
Punjab	76	91	60	33
Sindh	57	68	43	38
KPK	56	71	52	23
Balochistan	23	29	16	6
Pakistan	56	67	42	30
AJK	50	55	20	21

Source: HMIS, 2009

LADY HEALTH WORKER COVERAGE IN AJK

LHWs are posted mostly in the rural areas, and do not cover most urban population the overall coverage as shown by LHW-MIS is very low in Provinces. It is slightly higher in

[2] HMIS, 2009

AJK as compared to Balochistan (24%); 46% in Sindh, 52% in Punjab but still lower in AJK as compared to 71% in KPK and 75% in GB (Table 1.4.).

Table 1.4: Percentage population coverage by LHW

Province	% of Pop Coverage by LHW
Punjab	52.02%
Sindh	45.92%
KPK	71.34%
Balochistan	24.49%
GB	75.33%
FATA	38.98%
ICT	26.1%
Pakistan	50.21%
AJK	59.46%

Source: LHW-MIS-2010

There is a linkage between maternity case registration by LHW and skilled deliveries: The LHW as well as HMIS data from rural health facilities and national programme show that there is a higher probability of skilled delivery if the case has been registered by an LHW. So the case registration by LHW can be taken as an important intervention for skilled delivery. In AJK, 25% delivery cases were registered through LHW, and out of those cases, 84% had presence of skilled person at the time of delivery (Table 1.5).

Table 1.5: Per cent skilled deliveries (out of LHW registered)

Province	% Delivery cases Registered by LHW	% Deliveries by Skilled Person out of registered cases
Punjab	24	78
Sindh	22	76
KPK	16	62
Balochistan	11	77
GB	29	62
ICT	15	70
Pakistan	21	75
AJK	25	84

Source: LHW-MIS, 2009

COMMUNITY MIDWIVES IN AJK

After the start of MNCH Programme in AJK in 2006, four midwifery schools were established in AJK. It included one each in the cities of Muzaffarabad, Bagh, Mirpur and Kotli. Training of the first batch of 62 CMWs was started in 2007-08. After the 18 months

of training, 58 student midwives passed the exam from the first batch of CMWs in 2009. Majority of the midwives in AJK got their training either in CMW School Kotli or Mirpur. Lowest number was from CMW School Bagh. Majority of CMWs completed their training in 2009 and two batches have passed their examination in the 1st quarter of 2010. (Table 1.6)

Table 1.6: Details of CMWs in AJK

Sr.	Batch of CMW	Number Passed/Training
1	First Batch 2007-08	58 Passed in 2009
2	Second Batch 2008-09	57 Passed in 2010
3	Third Batch 2009-10	54 Appeared in Exam in 2011
4	Fourth Batch 2010-11	47 under training
5	Total Deployed till April 2011	43 Deployed (15 waiting to be deployed)

AIMS AND OBJECTIVES

The overall objective of the research was *"to identify the barriers of social mobility of CMWs in rural population in AJK in terms of geographical, economical and socio-cultural and gender aspects"*.

Social mobility of CMWs in this research denotes change in status a CMW achieves from deployment with time, in terms of social and economic terms. From the community perspective it also implies the social acceptance she enjoys within different socio-economic groups, from rich to poor and in different geographical settings in society.

Specifically, the study attempted to explore the following questions, for example,

- What are the various barriers in acceptance and functionality of CMWs in different areas of AJK?
- What relationship exists and how CMWs interact and interrelate with other existing obstetric care providers in a given socio cultural environment in different areas of AJK?
- What is the span and coverage of CMWs outreach in a scattered rural population with special reference to poor and marginalized population groups, evidenced by CMWs mapping?

This research is anticipated to identify the barriers of social mobility of CMWs in marginalized population having issues of gender, social exclusion and poverty. The study will help in devising a framework for improved integration of CMWs role with other obstetric care providers at community level.

2. LITERATURE REVIEW

Maternal Health: An estimated 358,000 maternal deaths occurred globally in 2008, developing countries accounted for 99% (355,000) of these deaths. Sub-Saharan Africa and South Asia accounted for 87% (313 000) of global maternal deaths. Eleven countries including Pakistan comprised 65% of maternal deaths in 2008.[6,7] An estimated 25000 mothers die in Pakistan because of complications of pregnancy and delivery, where most of these deaths are preventable by improving access to these services and improving quality at all levels. Maternal Mortality Ratio (MMR) is 276 per 100,000 live births in Pakistan. In urban areas of Pakistan, the maternal mortality ratio is 175, and it is 319 in rural settings, which form majority of Pakistan's population. Under Millennium Development Goal-5, Pakistan hopes to reduce current ratio to 150 by 2015.

There is a number of health delivery system related and socio-cultural issues that pose a challenge to improving MNH status in Pakistan. The 'three delays' are considered the most important operational factors that result in maternal mortality. Both lack of antenatal care and skilled birth attendance are significantly associated with maternal mortality. The deceased women mostly are those who have not received antenatal care and have not undergone delivery by a skilled provider. In rural clusters a distance of 40 kilometres or more to any of the three facilities i.e. primary health facility, hospital and transport, is a clear risk factor for maternal mortality. The average distance to a reproductive health facility in rural areas is almost four times the distance in urban areas, making access to services for rural women without transportation or funds extremely difficult. The most common direct causes of maternal deaths are postpartum haemorrhage (27%), puerperal sepsis (14%) and eclampsia/toxaemia of pregnancy (10%). An additional 13% of maternal deaths are due to indirect causes.

About 890,000 induced abortions are performed in Pakistan annually with an estimated annual abortion rate of 29 per 1000 women aged 15-49. [8] It means that an average Pakistani woman experiences about one abortion in her lifetime. Induced abortions end an unwanted pregnancy and as such are a means of birth control. An alternative means of preventing unwanted births is effective practice of contraception. Studies reveals that the common abortion methods generally used are dilatation and curettage (D&C), evacuation and curettage (E&C), hormonal drugs, herbal teas, anti-malarial drugs, and 'hot' dietary items. Insertion of a range of objects into the vagina including laminaria, IUCD, sticks, medical instruments and swabs are also the commonly reported methods. The number of women who experience serious health complications each year in

Pakistan, as a result of unsafe abortions is large: an estimated 197,000 women are treated each year in public sector facilities.[9]

One of the most serious injuries of childbearing is obstetric fistula (OF), a hole in the vagina or rectum usually caused by prolonged labour without treatment. In such cases, the baby usually dies and the woman is left with leaking urine, faeces or both. Left untreated, fistula can lead to chronic medical problems and it typically results in social isolation, depression, and poverty. Adolescent girls are particularly susceptible to obstructed labour, because their pelvises are not fully developed.[10] A clinical study in Pakistan found that abdominal hysterectomy was most common cause (53 % of cases) followed by obstetric causes (44 % of cases). [11] Another study identified obstructed labour (63 %), caesarean section (13 per cent and hysterectomy (13 %) as most common etiological factors.[12] According to PDHS, 2007, 3 % of ever-married women who have ever given birth have experienced the most common symptom of fistula, i.e. a constant dribbling of urine.

Newborn Health: Newborn survival is another area in dire need for improvement. Although, Pakistan's infant mortality rate declined from 91 to 78 per 1000 live births, during 15 years, neonatal mortality rate (deaths among newborn babies less than one month of age per 1000 live births) remained unchanged since 1991 (it was 53 in 1991 and 54 in 2007). Perinatal mortality rate consists of stillbirth rate and early neonatal mortality rate. PDHS- 2007 reported that perinatal mortality rate was approximately 159 per 1000 pregnancies in total, showing a higher rate among women living in urban areas. Newborns whose mothers have no formal education, or are in lowest wealth quintiles, or are under the age of 20 are much more vulnerable than other newborns. In addition, first births and children born less than two years after the previous child have a much greater risk of dying within the first month of life. Spacing children at least 36 months apart reduces risk of infant death.

In Pakistan, the average birth interval is 29 months and one-third of infants are born less than two years after a previous birth. Infants born less than two years after a previous birth have particularly high infant mortality rates (101 deaths per 1,000 live births compared to only 52 deaths per 1,000 live births for infants born three years after the previous birth. The major cause of neonatal death during the postnatal period is ARI, (25.7 %) and diarrhoea (27 %).

Skilled Birth Attendance: PDHS-2007 survey revealed that 39 per cent births in Pakistan are attended by skilled health personnel, with 61 per cent of births handled by

unprofessional and untrained persons, thus, increasing risks of maternal morbidity and mortality. Survey reveals that only 34 per cent of all deliveries take place in health facilities.[13] Evidence shows that poverty, social exclusion and gender inequalities, present in the rural communities, compound the problems of maternal mortality in Pakistan. [14 15] In Pakistan, Doctors, especially females, avoid working in remote villages, where maternal deaths are highest. A trained midwife from local area will be able to work and provide basic obstetric care.[16] Many initiatives in Pakistan have been tried to improve skilled birth attendance, Dai-training programmes started in 1950s, LHV programme from 1975, Family Health Projects initiated in 1983, the National FP & PHC programme in 1994, the Women Health Project in 2001, and NCHD projects of 2003 [17] and MNCH Programme since 2005, but progress in skilled attendance has remained limited. Improvement in maternal and neonatal health is largely dependent upon availability of skilled birth attendants at the time of delivery.[18] The single most critical intervention for safe motherhood is to ensure that a health worker with midwifery skills is present at each birth, and transportation is available for a comprehensive level of obstetric care in case of an emergency.[19]

International Evidence on Role of Community Midwives (CMWs): In developing countries antenatal, delivery, and postnatal experiences for women usually take place in communities rather than health facilities. Therefore, many countries like Sri Lanka, Malaysia, [20] Bangladesh,[21] Indonesia,[22] Nepal [23] and Bolivia [24] targeted on community-based interventions such as training and deployment of midwives to provide skilled care, imparting health knowledge and promoting appropriate health seeking behaviours, as a complement to any facility-based component. These midwives were backed by a team of highly skilled obstetricians in tertiary care hospitals. Despite many challenges in community based midwifery services these countries have successfully lowered their MMR by increasing uptake of skilled care services at birth through improved human resource. [25, 26]

The Model of CMWs is adopted by many countries and has gradually improved maternal mortality situation.[27] Studies reveal that distribution of CMWs especially their mode of payment method affects the access of pregnant women receiving a skilled delivery.[28] It is also shown by various research studies that success of MNH interventions depend not only on capacity of health system in country, but also factors in the social sectors, such as girls education, good roads, and available transport for emergencies. [29, 30, 31]

In India the government is readdressing the training of skilled birth attendants (SBAs). The strategies to increase the number of SBAs included revision of midwifery curriculum, strengthening infrastructure, the revision of the diploma of nursing with greater midwifery content and training of existing lady health visitors and staff nurses with the aim of improving the current knowledge and skills relating to maternal and new born care.[32]

Afghanistan has been training CMWs since 2002. On the basis of evaluation of CMW training in 2009, a national accreditation programme for midwifery education was developed in order to standardize the education of midwives and to reduce substantial variation in programme design. National Midwifery Education and Accreditation Policy were developed in 2005, and midwifery schools are required to adopt accreditation policy.

The training of community midwives requires the same competency in knowledge and skills from all graduates and is followed by supportive supervision to help them address any gap during their practice in the field following graduation. The community midwives are trained for 18 months of study. [33]

Community Midwives in Pakistan: A study funded by Technical Resource Facility (TRF) in Pakistan showed that significant proportion of trained CMWs had little information about maternal and neonatal health services, and very few CMWs could list all the services required to be given to mothers and newborns. With regard to maternal and neonatal illnesses, graduates only knew the signs/symptoms of severe complications but were not familiar with the identification and management of the early stages of complications both for pregnant women, postpartum women and neonates. This is alarming given that the core responsibility of these frontline skilled birth attendants is early identification of complications and timely referral which is vital to reduce maternal mortality in the country. [34]

Similarly an assessment undertaken by PAIMAN in six districts of Pakistan to assess the competence of CMWs showed that knowledge of CMWs on danger signs of various phases of pregnancy, delivery and postpartum period was very poor. They had very poor knowledge about management of various complications which arise during these phases, and their knowledge about neonatal care was also not satisfactory. Similarly the performance for skills

relating to maternal health, as well as correctly completing various skills regarding the newborn was also not satisfactory. [35]

Role of Community Midwives in AJK: Within AJK, accessibility is a very intricate issue, primarily due to distant locations of health facilities, lack of transport facilities, the cost of services and socio-cultural barriers.[36] Tough terrain, variable altitudes, inadequate means of communication (roads and transport) and health infrastructure further deteriorates the situation.[37] CMWs intervention aims to target poor marginalized and disadvantaged women in rural AJK. More than 80% deliveries in rural AJK at present occur at home. CMWs rely on referral linkages by LHWs in community, which needs to be evaluated for exploring acceptability and their social mobility.[38] Another challenge revolves around the mobility and acceptability of CMWs with reference to geographical, economic and social perspectives in order to initiate change in maternal & child health outcomes. [39, 40] Limited work has been done with reference to CMW's acceptability in this socio-cultural environment, and to determine whether these population groups will prefer CMWs or will decide still, to go to other health providers and TBAs for home deliveries.

In Pakistan studies done on LHWs reported that the low socio-economic status, long travelling distance for work, inconsistent medical supplies, inadequate stipends, lack of career structure and not being equipped to communicate effectively with families were the main factors for job dissatisfaction, poor performance and attrition.

Other studies conducted in Pakistan on LHW's field-related challenges have identified barriers faced in service delivery in certain areas due to poor support from sub-optimally functioning health facilities, financial constraints and political interference leading to management issues, irregular supplies of drugs, delayed disbursement of remuneration, poor district health system referral support, and lack of financial incentives and career development. [41, 42]

Social Mobility Concept: Social Mobility refers to "the degree to which an individual or group's status is able to change in terms of position in the social hierarchy". Social mobility is most commonly measured in terms of educational attainment and occupational prestige. Alternative definitions of social mobility go beyond formal schooling or paid work, and they contribute to a broader definition of class and 'social upgrading'. [43]

Factors which define primary sources of upward social mobility within government organisations, include, ability, reputation, social credentials, and patronage. Ability is the single most important source, but other factors taken collectively are equally as important. Reputation includes three factors: ability, visibility, and demeanour. Social credentials comprise race, ethnicity, gender, education, personality traits, attitudes, and values. Reputation, social credentials, and patronage figure as sources of upward mobility for three reasons: the fact that ability is assessed subjectively, the requirement for trustworthiness in administrative work, and the fact that superiors and subordinates engage in social exchanges. [44] Studies point out contribution of social class to social cognitive career theory, and argue for the need to integrate social class with other contextual variables while addressing the issues of social mobility.[45]

Social mobility has multiple influences particularly on educational and occupational mobility, voting and political behaviour, and participation in community organisations. [46,47] Research provides further clarification of occupational attainment portions of social mobility model with interrelations between structure of work setting and personal qualities of the worker.[48] Mainstream sociological studies of intergenerational social mobility have emphasised social factors such as education and the material and cultural resources of the family of origin as the main influences on the chances and direction of social mobility.[49] Other important determinants of social mobility are organisational support, social exchanges, caste, family occupation and field of education. [50, 51] Social mobility is not assumed to be an obstacle, and contributes to a higher level of class structure where relevant working class is composed primarily of salaried employees and not just manual workers.[52]

3. STUDY DESIGN AND METHODOLOGY

STUDY SETTING:

The study was conducted in all 10 districts of Azad Jammu and Kashmir.

STUDY DESIGN:

This study was observational and cross-sectional in nature. The study period was from February 2011 to February 2012. It was a mixed method research; both qualitative and quantitative research methods were used in this study. Qualitative research comprised of In-depth Interviews (IDIs) and Focus Group Discussions (FGDs) in all 10 districts of AJK. For the quantitative part, a population-based cross sectional survey was conducted in AJK.

QUANTITATIVE HOUSEHOLD SURVEY:

For quantitative part, a population-based cross-sectional survey in all districts of AJK was done to determine the acceptability of CMWs (social/acceptability, economical/affordability and geographical/accessibility). The target population were local residents of the village and including;

- currently pregnant or
- those women who have delivered in last one year,
- mother-in-law,
- 25% of sample included males (husband or head of household) at the time of interview.

The same research tool was used for all the respondents.

SAMPLE SIZE:

At a confidence level of 95 % (1.96), precision of 5% (0.05) using the proportion of eligible female respondents (16%), the estimated sample size was 200 in each district. In order to adjust for design effect (due to inclusion of mother in law) the sample was increased by 50%. Thus the sample size used in each district was 300. In order to get the information of decision making in the households, it was suggested that 25% of the total sample will comprise of male respondents. So total sample used in each district was 400 (300 females and 100 males); and thus for 10 districts in AJK it was 3000 females and 1000 males.

SAMPLING TECHNIQUE:

A multi-stage sampling methodology was used for selection of respondents. All the villages of the districts were listed and they served as our Primary sampling Units (PSUs). From each district 20 villages were randomly selected as PSUs. Within these randomly selected 20 villages, 20 households were selected in order to complete the sample of 400. The house of CMW was considered as a centre of village. Survey team dispersed in four directions. First house was selected by picking first number in Currency Note and next houses were selected by using Kth number. So the teams in each direction selected 5 houses to complete the required 20 houses. If eligible respondents were not found in selected house, subsequent house was included.

RESEARCH TOOLS:

In order to meet study objectives, following research tools were used:

1. FGD Guide
2. IDI Guide
3. Checklist for assessing CMWs interpersonal skills
4. Exit Interviews from CMWs Clients

Structured questionnaire was used through a face to face interview during survey.

PRE-TESTING OF TOOLS:

After preparation of research tools in English they were translated into Urdu language for easy understanding by the interviewers and respondents in the field. In order to test the authenticity of translation, back-translation in English was done. Translated research tools were pre-tested to detect any possible problems in the translations or flow of the questions, and estimates of the time required for interviews. The pre-test provided valuable experience for the survey organizers regarding research tools design, training mechanisms, and fieldwork logistics before finalisation.

TRAINING OF DATA COLLECTION TEAM:

Three days Training of data collection teams was done from 22ndApril to 24thApril 2011 in Muzaffarabad AJK.

GIS MAPPING:

The GIS Mapping was done to map the CMWs residences to get information about working outreach of CMWs. The key variables included in the mapping study were existing CMWs working in area, household distance from CMWs health house, other care providers in the area.

QUALITATIVE RESEARCH:

The qualitative part was done to identify various barriers of social mobility of CMW in rural population in terms of geographical, economical, gender and socio-cultural aspects. In-depth interviews (IDI) and Focus Group Discussion (FGDs) were conducted. Purposive sampling was done for participants' selection. Field guides were used for conducting FGDs and IDIs after field-testing. The team for qualitative research comprised of three researchers: one observer, one note-taker and one facilitator/moderator. Detail of QRM participants with their number per district is given in Table 3.1.

All the FGD and IDIs were recorded and a guide was used for keeping the discussion relevant and more productive. All the teams were trained for improving quality of data collection. Six (06) FGDs and ten (10) IDI were done in each of study district. Thus, in total 60 FGDs and 100 IDIs completed. Six FGDs (one each for different groups) were conducted in the districts to ensure that respondents of all FGDs include homogenous groups. The main theme of FGDs and IDIs were social mobility and acceptability of the CMWs in terms of geographical, economical, gender and social aspects. To determine the interpersonal communication skills of CMWs, in-depth interview of CMWs and observation were done in all of workstations of study districts. No client was found at the time of visit to conduct the client-exit-interview.

The IDIs and FGDs were recorded for accuracy and transcribed and translated by at least two people independently. Details of qualitative research methods (QRM) and participants are given in Table 3.1.

TABLE 3.1: QUALITATIVE METHODS RESPONDENTS

Sr.	Method	Respondents/Participants	Number per District	Number Completed
1.	**In-depth Interviews (IDI)**	**IDI Respondents** • District Health Officer • District coordinator MNCH • District coordinator LHW • District Gynaecologist [3] • Health Facility In charge • Lady Health Visitor • Political Leaders (councillor) • Imam of local mosque • Local school teacher local NGOs representatives	10 per district	**10 in all district 100 in total**
2.	**Focus Group Discussions (FGDs)**	**FGD Groups:** 1. women of CBAs 2. Mother in Laws 3. Husband/head of households 4. LHWs 5. Local Support group TBAs	Six FGDs in each District (One for each group)	**6 per district 60 in total**
3.	**CMWs IDIs**	All CMWs deployed by MNCH Programme	All CMWs in District	**36 (out of 43)[4]**
4.	**Exit- Interviews at CMWs house**	Clients at CMWs workstation	All CMWs in District	**None No client found**

DATA COLLECTION PROCESS:

Data collection for the survey was done by district level teams comprising of one District Team leader and research associates, both male and female. The District team leader was responsible for over-all management of field activities in the district and keeping

[3]No Gynaecologist in Haveli District. In Neelum, Surgeon managing Gyne/Obs cases, was interviewed

[4] Out of 43 deployed, only 36 CMWs were available at the time of visit.

close contact with the Team Leader and Project office. The quantitative survey tool was used for face to face interviews after describing the purpose of research and taking an informed consent. Guidelines for data collection were prepared and used for training of research team, who had it as a ready reference while conducting IDIs, FGDs, quantitative questionnaire. To remove the ambiguity, operational definitions were developed and utilized in trainings and while conducting interview and encircling the answers.

DATA MANAGEMENT:

Data collected from the districts was daily scrutinized by District team leader/Data manager for completeness and accuracy. Quality assurance of data was ensured by spot checking and verifying the data collected by the enumerators on a regular basis by the Data Quality Manager. Incomplete data used to return to the relevant team members for completion. All data collected at the district level was weekly dispatched by the District Coordinator to the Children First office in Muzaffarabad. Double-entry of data was done at head office in Muzaffarabad on computers with security password and access limited to the Data Manager or his designate. This computer was not connected to the Internet to ensure confidentiality. The data was kept secured in project head office in hard and soft copies. Backup was kept for any mishap and avoid data loss.

QUALITY CONTROL:

The supervisor of team was responsible to ensure good quality of data through proper field work; efficient team building; and regular editing of questionnaire. About 5% of the forms were verified by supervisor and checked for accuracy.

ANALYSIS OF QUANTITATIVE SURVEY:

The completed questionnaires were entered into an MS Access database. Checks were performed to ensure that all responses were within expected parameters by reviewing the entered data. The main analysis took place in SPSS version 18 and in three phases:

Phase 1 (Univariate Analysis) involved using descriptive statistics to depict the characteristics of the sample in different domains. It provides frequencies and percentages of various variables.

Phase 2 (Bivariate Analysis), inferential statistical tests were conducted and the characteristics of the subset of participants identified as those who visited CMW were compared to those who never visited CMW using chi-square statistics for all of the

domains except age and other numeric variable (for which t-independent test was used). Before applying any test, distribution of the variables was checked. Variables like income, age, number of persons visited CMW and cost of CMW's services etc. where high variability was noticed in which non parametric tests were used i.e. Mann Whitney Test. Fisher Exact Test was also applied in the case if expected frequencies were <5. Results were considered statistically significant with a p value < 0.05. The details of the test are also given in the bottom line of each table.

In Phase 3 (Multivariate Analysis) stepwise logistic regression analysis was conducted to determine the predictors of CMW health services utilisation. Multiple logistic regression models were applied and the exponentiation of B coefficient Exp (b) was used in order to estimate the adjusted odds ratio (OR) for each independent factor, with 95% confidence intervals. Results were considered statistically significant for a p value of less than 0.05 (< 0.05).

ANALYSIS OF THE QUALITATIVE RESEARCH METHODS

Qualitative manifest and latent content analysis was applied to analyse the qualitative data from all the FGDs and IDIs. Content analysis was done in stepwise manner. The analysis aimed at finding manifest and latent meaning of data. The data was initially read several times by QRM consultant and Principal Investigator in order to find the sense of the whole. The transcribed data was analysed by using content analysis method. 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 objectives. At second stage the common views of the respondents were put together i.e. common views of respondents were merged 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. The condensed meaning units were abstracted and labelled with a code by both consultants independently. Diverging codes were re-evaluated and consensus was reached. The codes were then compared and divided with regard to similarities and differences by both consultants. The codes were later grouped into subcategories and categories, searching a more latent content for each level of abstraction.

After discussing latent meaning of contents seven main themes emerged which are discussed in the Results section.

4. RESULTS AND FINDINGS

PART 1: GIS MAPPING:

GIS Mapping was done for a total of 82 CMWs. It included 43 deployed CMWs as well as the other 39 CMWs who were awaiting deployment.

Results of the GIS Mapping show wide variation in availability of CMWs in different districts of AJK. For example, Mirpur (2 CMWs); Neelum (3 CMWs) and Hattian Bala (4 CMWs) were the districts with very low number of CMWs. But some other districts like Sudhnoti (21 CMWs); Muzaffarabad (12 CMWs) and Kotli (10 CMWs) have more CMWs, at the time of GIS Mapping.

The GIS mapping also pointed out the outreach of the CMWs and different districts have different outreach area of CMWs. A few districts have availability of CMWs in dispersed manner with little overlap of outreach. But in most districts there were areas non-covered by CMWs and in some cases, there was overlap of CMWs outreach due to placement of two or more CMWs in proximity.

District Sudhnoti with the highest number of CMWs has well dispersed CMWs and there is little overlap of their outreach. But there are still some union-councils without availability of CMWs.

GIS Mapping also showed that there were LHWs available in the vicinity of the CMWs area and some CMWs were even close to the health facilities in the region like BHU, RHC and THQ hospitals.

The detail of GIS Mapping is given as a separate atlas, including three different layers: one of whole AJK; one at district level and third one for the union council level map of CMWs.

RESULTS OF THE QUANTITATIVE SURVEY

SECTION I: OVERALL FINDINGS

The more cohesive and programmatically relevant analysis is presented here, in the main body of the results. A total 2900 female respondents were interviewed in 10 districts of AJK, so the participation rate was 96.7% and the refusal rate was 3.3%. The number of each category of female respondents is given below:

1. Pregnant Women: 865
2. CBAs having delivered in last one year: 1248
3. Mothers in law: 787

DEMOGRAPHICS OF RESPONDENTS AND SOCIOECONOMIC CHARACTERISTICS OF HOUSEHOLDS:

Table 4.1 shows that the average age of the respondents is 33.35 ± 9.18 (S.D) years and average education is 4.86 ± 4.90 (S.D) years.

Overall Monthly income ranges from 500 to 90000 Rs in the respondents, higher variability is found in the monthly income, however the median of monthly income is Rs. 10000.

More than half of the respondents have two or three rooms in their homes and 19.7% of the respondents have more than four rooms. Table 4.1 shows that only 0.9% of the respondents are living alone in their room and more than half of the respondents share their rooms with 2 or 3 persons, even 13.7% of the respondents share their room with more than five persons.

Data reveals that 31.5% of the respondents have toilet facility in their homes, 30.4 of the respondents have access to water supply, 35.5% of the respondents have electricity in their home and only 2.6% of the respondents have Gas in their home.

Main source of the income of majority of the respondents is formal employment, 33.4% of the respondents are engaged in self-employment and 16.4% of the respondents rely on agriculture related work and 6.8% of the respondents get major part of their income from abroad. Details are given in table 4.1:

Table 4.1: Demographic Characteristics of Respondents and Socioeconomic Characteristics of households

	Mean ± SD
Age (Years)	33.35 ± 9.18
Average years of education	4.86 ± 4.90
	(Min-Max) Median
Monthly Income (Rs.)	(500 – 90000) 10000
	Percentage (n = 2900)
No of Living Rooms	
1. Single Room	5.3
2. Two Rooms	25.4
3. Three Rooms	28.1
4. Four Rooms	20.4
5. More than four rooms	19.7

People share the room	
1. Living alone	0.9
2. Two	18.1
3. Three	29.3
4. Four	24.8
5. Five	13.1
6. More than five people	13.7
Facilities	
Toilet in house	31.5
Drinking Water	30.4
Electricity	35.5
Gas	2.6
Main Source of Income	
From Formal Employment	43.4
From Self Employment	33.4
Agriculture related work	16.4
Working Abroad	6.8

GENERAL HEALTH:

Table 4.2 shows the general health condition of the respondents. More than three-fourth respondents reported that they have been ill over the last 6 months. Half of the respondents reported that they visited government health facility for seeking treatment during illness. One third respondents visited the private hospital during illness. 3.3% of the respondents approached LHW and 1.2% of the respondents approached LHV of private sector. About 3.3% respondents visited traditional healers[5]. Even 4.4% of the respondents visited spiritual healers [6] during illness. Overall 29.7 % of the respondents reported that they have been hospitalized for any type of sickness.

Table 4.2: General Health

General Health	Percentage (n=2900)
Illness over the past 6 months	78.9
Person visited regarding this illness	
A Govt health facility	55.4
A private health facility	30.4
Spiritual healer	4.4
LHW	3.3
A traditional healer	3.3
LHV	1.2
Nurse	1.1
None	0.5
Hospitalized for any type of sickness	29.7

[5] someone who uses traditional medicines to cure people who are ill or injured for example Tabib, Hakim, Quakes, homeopaths, Ayurveda

[6] The Spiritual healer is the person through which the patient seeking healing surrenders to the divine For example Saints, Sufis, Peers/Faqeers

AWARENESS ABOUT MNH SERVICES IN AREA:

70.5% of the respondents were aware about MNH practices and services in their area. Community was found as a main source of awareness about MNH services as majority (61.9%) of the respondents reported that information about mother and child health services in their area is communicated by Relatives/ friends/ neighbours.

Only 4.9% of the respondents got information regarding MNH from health facilities (Doctor/Nurse/LHV). Only 3.3% respondents reported TV/ Radio/Newspapers as sources to get the information regarding MNH services in their area.

AWARENESS ABOUT CMW IN THE AREA:

Data revealed that only 8.5% respondents were aware about the presence of CMW in their area. Among them majority (7.5%) reported that community (Relatives/ friends/ neighbours) is the main source of information regarding the availability of CMWs in their areas. Only 0.6% of the respondents got information from health facility and 0.4 % from media.

Table 4.3: Awareness regarding MNH Services and CMW of the respondent

	Percentage(n=2900)
Aware regarding the MNH services in their area	70.5
Source of awareness about MCH services	
Community (Relatives/ friends/ neighbours)	61.9
Health Facility (Doctor/Nurse/LHV etc.)	4.9
TV/ Radio/Newspapers	3.3
Aware about CMWs in their area	8.5
Source of awareness about CMWs	
Community (Relatives/ friends/ neighbours)	7.5
Health Facility (Doctor/Nurse/LHV etc.)	0.6
TV/ Radio/Newspapers	0.4

UTILISATION OF CMWs SERVICES:

Very few respondents utilized CMWs services. 3.7% of the respondents reported CMW had visited their household. On the other hand, 5.2% of the respondents reported that they have visited the CMWs in their area.

Those who have visited CMW, majority (4.6%) reported they travelled on foot to visit CMWs. Only 2.2% of the respondents reported that their household members visited the CMWs in last 6 months.

High variability is found in time (minutes) taken to reach nearest CMW, it ranges from 5 minutes to 90 minutes with median 15 minutes which showing the average time to reach nearest CMW.

Table 4.4: Utilisation of CMWs Services

	Percentage (n= 2900)
CMW visited the household	3.7
Someone from household visited the CMW	5.2
Means of Transport • Personal transport • Public transport • On Foot	 0.4 0.2 4.6
Household member visited CMW in last 6 months	2.2
	(Min – Max) Median
Time take to reach nearest CMW (minutes)	(5 ± 90) 15

PREFERRED SERVICE PROVIDER FOR DELIVERY AND MATERNAL CARE:

84.65% of the respondents reported that last delivery in the household was normal; but 14.35% of the respondent reported last delivery with complication. Majority (37.9%) of the respondents reported that last delivery was conducted by TBA. 22% of the respondents visited lady doctors. 5.7% of the deliveries by nurses and 5% of the deliveries conducted by LHV. 3% deliveries were conducted by CMWs.

Table 4.5: Preferred Service Provider for Delivery and Maternal Care

	Mean ± S.D
Number of deliveries in last 5 years	**2.56 ± 1.011**
	Percentage (n = 1980)
Mode of Delivery Normal With Complications	 84.65 14.35
Last delivery Conducted by TBA Lady Doctor Nurse LHV CMW	 37.9 22 5.7 5.0 3.0

Respondents who utilized MNH services other than obstetric service	
None	53.3
Lady Doctor	36.2
LHV	3.3
Traditional healer	3
Spiritual healer	2.1
TBA	1.1
CMW	0.3
Nurse	0.7
	(Min – Max) Median
Number of visits made to these care providers in last six months	**(1 – 30) 3**

Half of the respondents reported that they didn't visit any health service provider for maternal care in last six months. 36.2% of the respondents approached a lady doctor for maternal care. 3% of the respondents visited spiritual healer for treatment in last six months. Only 0.3% of the respondent consulted CMW for maternal care in last 6 months.

There is large variability found in the question regarding the visits made to service providers in last six month, it ranges from 1-30 with median 3 which shows on average respondents made 3 visits to these care providers in last six months (Table 4.5).

REASONS FOR VISITING PREFERRED SERVICE PROVIDER:

Training and skill was the main reason to visit preferred health care providers as 45.5% of respondents visited these health-care providers because they considered them as better trained and more skilled. Twenty four hours (24/7) availability was another reason which attracted the respondents to visit these health care providers as 17.7% of the respondents reported that they visited them because they are available throughout a day.

10.4% of the respondents visited these health care providers because of their being local residents. 11.2% of the respondents gave low cost as the main reason to visit selected health care providers. 15.3% of the respondents visited preferred health care providers because they were at less distance from their homes.

Cost of service was the main reason to not visit CMW as majority (85.7%) of the respondents replied that they didn't visit CMW due to her fee of services. Table 4.6 reveals that people do have doubt in CMWs training & skill and competence as 6.1% of the respondents reported this reason for not visiting/consulting them. Even 2% of the

respondents considered CMWs are not competent enough. 6.1% of the respondents reported that due to the distant from their household they never visited CMWs.

Majority (96.5%) of the respondent didn't response to the question regarding difficulties in access to CMW services. 1.3% of the respondents mentioned that distant is the main difficulty in access of CMW services. 1.1% of the respondents considered CMWs position/image in village and distant as the main problem in access to CMW services. 0.3% of the respondents considered that expenditure and transport is also a difficulty in access to CMW services. 0.5% respondents also considered that their family tradition is the main hurdle in access of CMWs services.

Table 4.6 shows that 20.7% respondents reported that CMWs should only provide antenatal services, while 25.5% respondents responded that they should provide delivery services and 18.3% respondents replied that postnatal services should be provided by CMWs. 14.2% respondents said that CMWs should provide family planning services and 12.4% respondents were in favour of immunisation services to be provided by the CMWs. Only 8.4% respondents said that gynaecological services should be provided by CMWs. Majority (58.3%) respondents preferred that CMWs should be integrated with LHW. 6.5% respondents preferred that TBA to CMW track to integrate CMWs. And 14.9% respondent preferred CMW to refer directly to health facility / doctor.

Table 4.6: Reasons for visiting preferred Service Provider

	Percentage (n=2642)
Reasons for visiting these care providers	
• Training and skills	45.5
• Timing (24 hours availability)	17.7
• Less distance from household	15.3
• Low cost	11.2
• Being a local resident	10.4
Reasons for not visiting/consulting CMWs	
• High Perceived Cost of service	85.7
• Poor training and skills	6.1
• Long Distance from household	6.1
• Lack of competence	2.0
Difficulties in access to CMW services	
• Distance	1.3
• Her position / image in village	1.1
• Family tradition	0.5
• Expenditure	0.3
• Transport	0.3
• Don't Know	96.5

Services CMW should provide (multiple responses)	
• Antenatal/Delivery and Postnatal	63.5
• Only Antenatal	20.7
• Family planning	14.2
• Immunisation	12.4
• Gynaecological	8.4
• Don't know	0.6
Preferred way for Referral Linkages of CMW and integration with other health care provider	
• From LHW to CMW	58.3
• From CMW to health facility / doctor	14.9
• From LHW to CMW to LHV	13.1
• From TBA to CMW	6.5
• Don't know	7.2

HEALTH EXPENDITURE:

High variability is found in responses regarding expenditure on health in last six months. Overall Consultation fee ranged from Rs.5 to Rs. 1000 with median Rs.20 which showing average consultation fee paid was Rs. 20. Minimum delivery fee reported Rs. 500 and maximum Rs. 10000.

Table 4.7: Health Expenditure

Health Expenditure	**(In Pak Rs.) (Min – Max) Median**
Consultation	(5 – 1000) 20
Delivery	(500 – 10000) 1500

RESULTS OF THE MALE RESPONDENTS:

Average age of the male respondents was 39.77 years (SD +12.13). Average years of education being 7.71 year (SD +4.45) Reason provided for visiting preferred service providers show that majority (51.4%) of male respondents also put "Training and skill" of the provider as the main reason. The 24 hours availability (21.7%); perceived low cost (10.1%) and being local resident (6.8%) were the other reasons mentioned. (Table 4.8)

Table 4.8: Results of Male Respondents

Male respondents	**(n=990)**
Age (Mean Years) ± SD	39.77 ± 12.13
Average years of education ± SD	7.71 ± 4.456
Reasons for visiting preferred providers for delivery and maternal care from households	
• Training and skills	51.4
• Timing (24 hours availability)	21.7
• Being a local resident	10.1
• Perceived Low cost	6.8
• Less distance from household	10

SECTION II: RESULTS OF THE BIVARIATE ANALYSIS

DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS AND SOCIOECONOMIC CHARACTERISTICS OF HOUSEHOLDS:

Table 4.9 describes the socio demographic characteristics of those who visited the CMW compared with those who did not visit CMW. The respondents who visited the CMW is slightly more older than those who did not visit CMW as mean age is 37 ± 11.4 (S.D) years in those who visited and 35 ± 10.42 years in those who did not visit and the difference in age is found statistically significant. Education level is found very low in those who visited the CMW as those who did not visit the CMW, the average year of education is 1.82 years, and 5.64 years in those who did not visit CMW but this difference is not statistically significant as P-value is 0.553. By keeping in mind the large variability in income level, it is further stratified into groups. It is noticeable that monthly income of the respondents who visited the CMW is significantly higher than the other group. It ranges from Rs.10000 to Rs.50000 in half of the respondents who visited the CMW. No difference is found in term of number of living room and number of people sharing the rooms in access of CMW as P- value < 0.05 in both cases. Both groups access same type of facilities in their homes so it is also non-significant with P-value 0.956 > 0.05. Table 4.9 shows that Source of employment is also not related to the main factor to access CMW as its P-value = 0.619>0.05.

Table 4.9: Demographic Characteristics

	n=149	**n=2735**	
Age (Years)	37 ± 11.4	35 ± 10.42	0.005*
Average years of education	±4.7	5.64 ± 4.9	0.533
Monthly Income			
• ≤ 10000	45.2	57.8	
• 10001 – 20000	31.7	23.3	0.002*
• 20001 – 30000	11.3	9.4	
• 30001 – 40000	6.8	3.7	
• 40001 – 50000	1.8	2.6	
• > 50000	3.2	3.2	
No of Living Rooms			
1. Single Room	1.8	5.6	
2. Two Rooms	22.3	25.6	0.111
3. Three Rooms	29.5	29.1	
4. Four Rooms	24.1	20.2	
5. More than four rooms	22.3	19.5	

People share the room			
1. Single Room	19.6	18.0	
2. Two Rooms	29.0	29.3	0.814
3. Three Rooms	21.9	24.9	
4. Four Rooms	12.5	13.2	
5. More than four rooms	16.9	14.5	
Facilities			
1. Toilet	31.0	31.6	
2. Clean Water	31.5	30.3	0.956
3. Electricity	36.5	35.4	
4. Gas	1	2.7	
Main Source of Income			
1. From Formal Employment	36.6	33.2	
2. From Self Employment	14.3	13.3	0.619
3. Agriculture related work	5.4	6.5	
4. Any other place	43.8	47.0	

* Significant

BIVARIATE OF GENERAL HEALTH:

It was noticed that illness history in last 6 months is significantly high among respondents which visited the CMW. At the same time, they also visited the other service providers as 80% of the respondents reported that they visited either government or private health facility during illness in last six months.

29.5% of the respondents who visited the CMW and 32.8% of the respondents who did not visit the CMW stated that they have been hospitalized for any type of sickness but this difference in the responses is non-significant.

BIVARIATE OF AWARENESS OF MNCH SERVICES IN AREA:

As shown in Table 4.10 that it should be noticed that awareness level regarding MNCH services and CMWs was significantly higher in the respondents who visited CMW. 93.3% of the respondents who visited the CMW are aware of MNCH services and on the other hand 67.4% of the respondents who did not visit the CMW are aware of MNCH services.

Community (Relatives/ friends/ neighbours) were found as a main source of awareness about MNCH services in both groups as majority of the respondents in both groups reported that information about mother and child health services in their area is communicated by relatives/ friends/ neighbours. 4.1% of the respondents in both groups got information regarding MNCH from health facilities (Doctor/Nurse/LHV etc.).

The analysis on data revealed significant level of higher awareness in respondents who visited CMW but this proportion is significantly declined in other group, among them only 3.5% of the respondents were aware of the CMW in their area.

The difference in this domain is highly statistical significant which is showing that a few people know the existence of CMW in their area and that can be one of the hurdles in access of CMW services.

Community (relatives/ friends/ neighbours) have been found main source of information regarding CMW in their area which indicates that to improve the awareness regarding MNCH services and CMW, community can be the best way to intervene and get the optimum results.

Table 4.10: Awareness of MNCH Services

Awareness comparison	**Visited CMW**	**Not Visited CMW**	**P-Value**
	n=149	n=2735	
Aware regarding the MNCH services in their area	93.3	67.4	0.000*
Source of awareness about MNCH services			
• Community(Relatives/ friends/ neighbours)	88	60.0	
• Health Facility (Doctor/Nurse/LHV etc.)	4.1	4.1	
• TV/ Radio/Newspapers	1.2	3.3	0.098
Aware about CMWs in their area	97.8	3.5	0.000*
Source of awareness for CMWs			
• Community (Relatives/ friends/ neighbours)	91.3	2.92	
• Health Facility (Doctor/Nurse/LHV etc.)	4.6	0.39	0.082
• TV/ Radio/Newspapers	4.2	0.19	
Note: p values are for chi-square tests between the two groups, with the exception of the awareness regarding MNCH service variable (difference tested with Fisher exact test)			

* Significant

HEALTH EXPENDITURE COMPARISON:

Overall Consultation fee ranged from Rs.5 – Rs.1000 with median Rs.20 which is showing average consultation fee Rs.20 in respondents who visited CMWs.

Minimum delivery fee reported is Rs.500 and maximum Rs.3000, but median delivery fee is Rs.1000. But a significant difference is found in the consultation, delivery services cost, and as the respondents who didn't visit the CMW reported that they spend more money on availing these services.

Table 4.11: Expenditure comparison

Expenditure Type	**Visited CMW**	**Not Visited CMW**	**P- Value**
	(Min – Max) Median		
Consultation Fee	(5 – 100) 20	(10 – 1000) 750	0.000
Delivery	(500 – 3000) 1000	(1000 – 10,000) 1500	0.013

RESULTS OF MULTIVARIATE LOGISTIC REGRESSION

Table 4.11 displays the results that were revealed by the multivariate logistic regression model as far as the whole sample is concerned.

The variable that most strongly associated as a hurdle in utilisation of CMW's services under study was perceived cost of service. Individuals who did not visit CMW perceived as costly were more likely (Exp (b) 2.33) to visit service providers other than CMW.

Furthermore, a clear gradient was found within the different levels of education and income. Individuals with low education had a higher likelihood of visiting CMW than those with secondary and higher education, whereas individuals with higher income were more likely (Exp (b) 1.72) to visit service provider other than CMW.

Reaching time of more than 30 minutes was another strong reason for not visiting the CMWs. Awareness level regarding the MNCH services was also a significant predictor of the utilisation of CMW services. Middle age was associated with greater probability of visiting CMW, whereas the elderly and younger were more likely to visit doctors and other providers. Details are given in Table 4.12.

Table 4.12: Logistic regression models for the overall population

	P-value	Exp (b)	C.I
Age (<20)			
20-30	NS	1.32	0.85 – 2.05
30-40	NS	1.81	0.67 – 2.23
40-50	0.045	1.221	1.12 – 2.91
50+	NS	1.05	0.24 – 1.25
Education (Illiterate)			
Primary	0.03	0.93	0.91 – 0.95
Secondary	NS	0.81	0.59 – 1.11
Above			
Income (< 10000)			
10000-20000	NS	1.22	0.67 – 2.23
20000-30000	NS	1.42	0.81 – 2.48
30000-40000	NS	1.11	0.52 – 2.35
40000-50000	0.03	1.72	1.19 – 2. 15
50000+	NS	1.06	0.62 – 1.80
Reaching time to CMW (< 30 minutes)			
>30 minutes	0.02	2.11	1.01 – 3.21
Awareness regarding the MNCH services	0.01	0.95	0.94 – 0.97
Expenditure/Costs	0.000	2.33	1.33 – 4.06
Training and skills	0.04	1.81	1.12 – 2.91
R^2	29.5		

NS = non-significant (p > 0.05).

PART 3: ANALYSIS OF QUALITATIVE RESEARCH METHODS:

Demographic details of QRM Participants:

Table 4.13: Demographic Details of QRM Participants

	IDI Respondents	FGDs Participants
Total	100	403
Male	68	123
Female	32	280
Age Range	21 to 64 Years	17 to 65 years

On the basis of analysis of QRM, consultants agreed on the following main themes: -

1. Selection and Training
2. Deployment and Ownership
3. Communication Skills of CMWs
4. Relationship with LHWs and obstetric care providers
5. Acceptability in community (social mobility)
6. Value to herself (upward mobility)
7. Future expectations and challenges

MATRIX OF QRM ANALYSIS		
THEMES	**CATEGORIES**	**SUBCATEGORIES**
SELECTION AND TRAINING	Candidate not selected on need base	Lack of participatory method in selection of candidate for CMWs job
		GIS not used for evidence for geographical zones
		Marginalized and remote areas lack eligible women
	Delays in selection processes and trainings	Processes not standardized by national programme
		Communication gaps between national and provincial programme offices and Districts
	Training quality poor	Nursing Schools used for CMW training
		Schools are distant from hospitals
		Non-availability of competent tutors
		Less focus on practical skill development
		Curriculum not up to date and not relevant for CMWs needs; Nursing curriculum being used
DEPLOYMENT AND OWNERSHIP	Delay in certification and Registration of CMWs	Departmental conflicts between programme and registration authorities
		Anomalies in certification and registration guidelines
	Delays in Deployment	Absence of deployment guidelines
		Lack of support services needed for initiation of work of CMW: e.g. medicines, equipment, finances for stipends, logistics for launching
	Lack of ownership by health authorities	Communication gaps between national programme and district health department
		Lack of trust on CMWs skills by health officials
		More time needed by the newer cadre to acclimatize

		in competitive environment
COMMUNICATION SKILLS OF CMWS	Nature of candidates	Mostly young candidates with basic education
		Coming from rural background with lack of exposure of outside environment
		Lack of confidence in talking to clients
	No training on communication skills	Limited focus on patient-provider interaction
		Course on IP skills not given in curriculum
RELATIONSHIP WITH OTHER HEALTH PROVIDERS	lack of integration at provincial and district level	LHW programme and MNCH programme distinct at provincial and district levels
		culture of competition rather than collaboration
	CMWs not valued by peers and colleagues	lack of faith in CMWs ability by other staff in health department
		LHWs/LHVs/ TBAs take them as loss in clientele
	- Linkages not strengthened	Not much efforts done for strengthening the linkage between LHWs, LHV, Hospital Doctors and District gynaecologists
ACCEPTABILITY	limited awareness of community about CMWs availability	No strategy for mass communication about CMWs
		CMWs work in remote areas with lack of modern communication channels in community
		Very few CMWs visited household in area
	Lack of trust on CMW competence	New cadre and people don't want on take risk on serious matter of maternity
		TBAs still seems more experienced and non-risky option to community
	People think her cost will be higher	Fee rates not known to community
		Perceived as a government employee, people expect her to give free services like other staff of public sector
VALUE TO HERSELF	Have not become what they expected	Roles of CMWs were not clarified to candidates during induction
		Most were expecting they will be equal to lady doctors and will get training of medicine
		Most feel they have not gained any upward mobility
	Issues of designation	Most wish to be called community nurse or LHV
		CMWs is synonymous to midwife (which is perceived as a lesser cadre employee)
	Feel abandoned	Less frequent interaction with provincial as well as district level officials
		Feel left at their own, in hard areas without supervision for such critical task
FUTURE EXPECTATIONS	Monetary incentives	Stipend instead of fee for services
		pay for performance
	More Value and respect	Regular supervision
		Provision of essential items and logistics
	Linkages development	Referral chain formalized & properly implemented
		must be linked with 24/7 service for systematic management of their cases

1. Selection and Training: Majority of community members raised concerns over the process of identification and nominations of girls for CMWs training. Most did not know selection criteria and process of enrolment for this training, and were not involved in selection activity at UC level. Some showed concern that in selection, married women should be given preference as most of the trained CMWs have left their villages after getting married. This is causing problem in mapping of CMWs. Many respondents wanted to be part of selection process to provide the best candidates from the community. Although many were not aware of role of CMWs, but after discussion in the groups became anxious and showed willingness to contribute in better option and provide better female candidates for the CMWs job for their area.

Some of them showed their concern over the areas where the population is much scattered and where there is scarcity of health care provider.

> *"Unfortunately CMW programme has not been properly utilized. Its bases are wrong; it should be planned for the people who don't have access to health facilities. Then in selection married women should be given preference as most of the trained CMWs have left their villages after getting married. This is causing problems in identifying candidates."* **(MNCH Coordinator)**

Family members as well as CMWs raised concerns over quality of trainings and wastage of time during whole training and deployment duration. Most CMWs had not done a delivery independently during their entire training and attachment duration; most merely observed a few deliveries. Most of them thought they just learned some theoretical aspects with little skill development.

There were issues with the practical part of the training course. Most thought the curriculum did not add much to their understanding for the job in the community. Some of them even pointed out that CMWs cannot even insert I/V cannula, hence the gaps in their practical training.

> *"I have observed lapse in training for CMWs, for example they do not know how to insert I/V cannula. This is really amazing how come they completed 18 months training. CMWs don't know about the basic things about labour, prenatal, natal & post natal services which they have to offer to community."* ***(NGO Rep)***

Some of the CMWs, who had birthing stations and equipment, had not been using most of the equipment and it was lying packed. They were not confident to perform deliveries at client's home because they reported that they have received training to perform deliveries on a lithotomy table and inside secondary level health facilities with supervision and technological support. A few of them requested further training. Record registers were provided to them, but most said they had no idea how to fill those registers because they had not received any training for this.

A gynaecologist who was not involved in the training of CMWs narrated she is not concerned with CMWs work. According to her, the CMWs can give basic aid and can do counselling of the patient.

> *"Because: I have never been involved in any of the activity related to CMWs, so I am unable to monitor their performance etc. I don't have any concern with them and their work"* ***(District Gynaecologist)***

> *"A CMW can give proper counselling to the patient. She can take important decisions in time. She can manage to give basic aid by herself. But she must be provided with all the essential equipment and drugs. They can bring a big change; they can take us to other world".* ***(District Gynaecologist)***

The Gynaecologists involved in the trainings of CMWs also raised concerns over the quality of training in Midwifery schools and said that that was not up to the standard.

> *"They were just passing time. I have reservations regarding their theoretical as well as practical competencies. They will not be able to handle pregnant women on their own. I recommend they should only be allowed to handle antenatal and postnatal and T.T. vaccination activities"* ***(District Gynaecologist)***

2. Deployment and Ownership: Many CMWs mentioned very long delays between their selection and initiation of the trainings. There was also delay in completion of training and examination and announcement of results. Further, there was delay in their certification and deployment. Some CMWs passed in December 2009, but had to wait for deployment till April 2011. Deployment was sudden; without proper communication to health facilities and dissemination to the community in locality. Initially the deployment was not in the community; in BHUs. Most CMWs were concerned that they are not doing MNCH work; other tasks are usually assigned by in charge of facility.

Most CMWs are attached with the nearest health facility (BHU/RHC) even after deployment. They are supposed to report to health facility daily. At the health facility they help around whatever task they are assigned by in charge. They are mostly involved in execution of FP and immunisation services. Most CMWs reported that they are not involved in antenatal/ post natal/natal services. Instead they are discouraged to take part in these activities by their seniors at health facility. On the other hand, the health facility in charges thought she has to be present in facility and should come to the facility daily, and they were not aware of job-description of CMWs as an outreach health worker.

Most CMWs as well as health facility staff thought that CMWs are not owned by health department. A few of these CMWs who are unsatisfied with their status have joined private sector for nursing jobs. They were very happy with their decision and said they did not want to go back to their communities. Some showed concerns regarding the Communication gaps between national programme and district health department. Managers do understand the need to improve communication between programmes working in the districts for MNCH. They all are willing to cooperate in this.

> *"Regarding MNCH Programme, till now I haven't seen any supervisory visit from provincial office. I feel district health department is depending on the resources of MNCH, instead of strengthen it."* **(MNCH Coordinator)**

> *"Owing to National Programme, we are having baseline information of all areas. Due to baseline information we know the number of CBAs present in any areas and how many of them are pregnant or near delivery. On the bases of baseline data we can set targets for CMWs and then evaluate their performance"* ***(LHW Coordinator)***

Some stated that even after the completion of their training the CMWs are not working, due to the lack of equipment and also due to the reason that they are not registered.

> *"CMWs have not started proper work as yet, as they have not been provided with the delivery kit & other material and also they are not registered with Pakistan nursing council. Once they are registered and get deployed formally then one can set the indicators of their performance".* ***(DHO)***

3. Communication Skills of CMWs: The CMWs during their 18 months training period are attached to different health facilities for 6 months under the supervision of a woman medical officer or a senior lady health visitor to perform various practical tasks

on pregnant women and newborns. The midwives were assessed for communication skills during the interview by anthropologist and lady doctor. Basic purpose was to assess her communication skills for interacting with patients. A case-based approach was used and they were called to demonstrate the skills while interacting with rural women of remote marginalized area, having different maternity problems one member of the team acted as patient.

Communication skill assessment was based on correctly narrating and describing all the steps of a particular issue. Majority of the CMWs were not confident to convince the community to get delivery through her. The communication skill with regard to providing necessary information during antenatal and postnatal was also very poor. None of the CMWs was able to communicate danger signs of pregnancy; very few explained properly the danger signs of delivery. The CMWs also reflected poor knowledge of infection prevention measures. The knowledge of obstetrical complications requiring referral was poor and not a single midwife could respond with all listed complications needing immediate referral. The communication about the management of neonate immediately after birth was again poor, and only about 30% respondents could mention at least a few steps of management.

4. Relationship with LHWs and Obstetric Providers: As the CMWs were working for not very long and were deployed very recently, so the knowledge and perception of other providers in their areas was very limited. Some of the health providers even disclosed that they have not yet met the CMWs.

They were reluctant to comment about CMWs but they were willing to guide them and support them in community. One of TBA said that they can form a team, where CMW will perform the delivery and she (TBA) will provide the assistance especially in antenatal and post natal house calls for other services like massage.

Some TBAs even shared their experience in order to help CMWs.

> *"While checking the patients, she should be able to predict the changes in their eyes, face and some symptoms of any complications".* ***(TBA)***

But most TBAs and other providers thought that she (CMW) is too young to perform this extremely important duty.

"Ye to meray hatoan mae paida hue hae" (this CMW, was born in my hands) ***(TBA)***

"They wear colourful modern cloths and model around, but they are good for nothing. They cannot compete with us. We have experience of many years but they (CMWs) neither have any skill nor experience. They are only good for fashion." ***(TBA)***

Interestingly, in one district, one TBA was grand -mother of the CMW. Her family was very happy that their grand-daughter had opted for this noble profession. Grand-mother (TBA) accompanies her (the CMW) in community not only for antenatal but also for delivery. But the family wanted regular salary and job security for her. They demanded at least Rs. 10,000 /month for her as salary. They were of the opinion that it would be very difficult to ask for money from her own community e.g. relatives, neighbours. It was observed that TBAs were more interested in their own trainings instead of CMWs during the discussion on training requirement. They themselves wanted to be trained in suturing, giving injection etc.

Almost all the LHWs were concerned about the competence of the CMWs. Most thought these CMWs are not skilled and cannot perform delivery. Many said they don't want to take the risk of referring the maternity cases to CMWs as they (LHWs) will be responsible in case of any bad outcomes and are not willing to take any responsibility. Most responded they will not refer cases to CMWs, and will still use referral to LHVs in BHUs or refer to the higher level hospitals. They think it will take time when CMWs make their value in community and CMWs have to prove their competence first in the area. Some health professionals also indicated that the CMWs should integrate with TBAs, LHWs and LHVs as all the health providers are important in their own domain as each provide services at a certain level.

LHWs also wanted the referral chain formalized with monetary incentives for each referral. There won't be much opposition. Some LHWs vowed that "if CMW will cooperate with us, we will refer patients to her. We do not know about the rest of people but we will cooperate and give every possible support to her"

"Hath wich qalam pakerny say aur achay kapray pahannay say, aur sirf bag latkaany say kam nahey aatta" Holding a pen in the hand, and wearing good clothes and hanging a bag on the shoulder cannot make one expert. ***(LHW)***

"People of this area don't like to visit unmarried CMW for antenatal check-ups and deliveries" ***(LHW)***

They (LHWs) recall their early days and the opposition they have to face in establishing their relationships in community and gaining their confidence. Some (LHWs) were committed that they will extend their help for the success of CMWs provided they (CMWs) work in community and provide benefit to these communities.

Another LHW said that

"People here prefer home deliveries as they do not like Baypardagi. TBAs conduct deliveries at home in a place where the voice of labouring women cannot be heard by any male member of house hold". ***(LHW)***

Most respondents from community were of the opinion that CMWs will not face a lot of resistance in the local community on their deployment but the traditional birth attendants and similar HCPs can oppose them. According to some to the respondents this initial resistance can be minimized by good behaviour of CMWs. After the earth quack of 2005 a lot has changed here. Women had interaction with international organisations and gained a lot of confidence. They are aware of their rights and they can even go for consultation from HCP alone. The problem now is less availability of healthcare providers, especially female doctors. As this is a geographically difficult terrain and has many areas with no road or are dangerous drives so people prefer to travel by foot from one area to another. As no local transport system is established so whenever a patient needs to travel, s/he has to bear high expenses. So real barrier is expense and not the family traditions which keep the women bound to their houses.

But all the Gynaecologists interviewed, showed their lack of trust in skills of CMWs; they mentioned that CMWs are not competent enough even for the antenatal care. They said although they were part of training, the time given for practical training to the CMWs was very less, and wanted training revised, made more practical rather than theoretical. Most gynaecologists raised concern that selected girls did not have needed capacity. Almost all gynaecologists had reservations in calling CMW-cadre as "*skilled*" and said she (CMW) can merely assist a delivery. All gynaecologists and most LHVs responded that they had not dealt any case referred by a CMW.

"BHU and RHC are not functional. Staff posted there are neither trained to handle obstetric and neonatal emergencies nor able to take timely decision to refer the obstetric emergencies. We always face the problem of shortage of trained, skilled obstetric

providers at BHU, RHCs and THQs. This creates a lot work load for us at the DHQ Hospitals" **(District Gynaecologist)**

"I have been part of faculty who were responsible for their practical training during their attachment at DHQ. I designed their rosters and rotations during their attachment with DHQ. But because of my busy clinical and management tasks I took limited part in CMW trainings while their stay at DHQ." ***(District Gynaecologist)***

One of the LHV showed her satisfaction in the CMWs capabilities and also shared her concerns regarding opposition from TBAs.

"Yes of course she is competent and well trained her performance is also good. She is serving pregnant women and is also advising them" ***(LHV)***

5. Acceptability in Community (Social Mobility): Mixed responses were found from the community. Most respondents thought CMWs cannot replace TBAs. Some argued that CMWs cannot replace LHV, while some said that LHWs are still better than CMWs. According to some the best healthcare is provided by Lady Doctors but as they are not available in villages, LHWs and Midwives are better choices as health care providers.

Some also pointed out the difference among healthcare providers in saying that CMWs are for conducting deliveries at home whereas LHWs only provide consultation to women.

Most people considered CMWs too junior to handle a delivery, which is matter of life or death of two. Some said they will only go to CMWs as a last resort.

Some also disclosed that there are taboos related to deliveries outside the home and they don't have faith on outside medical facilities.

According to a religious leader

"Today's era is a disturbed era it is an era of machinery so I can think the girl of today may visit for consultation. And I am telling you, our

women of today just eat and sleep, eat and sleep, that is why they get plenty of complications at the time of delivery" **(Imam Masjid)**

Where opposition is concerned regarding the initiative of CMWs, many private clinics and healthcare providers will feel threatened, as they charge around Rs. 5000-7000 for delivery whereas the CMW will charge Rs. 200-500 or will provide free services, then definitely people will prefer the CMWs. With reference to the affordability of CMWs fee, most were willing to pay if competence is there. Some thought CMW is an excellent initiative, and will be beneficial if selection is good and their skill/competence is enhanced.

"Acceptability of CMWs strongly depends on how successfully we make people aware of initiative of CMWs like we can tell people that CMWs are government employee, educated, trained and have experience in conducting deliveries" ***(MNCH Coordinator)***

Most respondents showed concern that there is no skilled person for maternal and child health services available in remote rural community, and only a few TBAs are available. Health facilities are far from villages and even after long travels there is no doctor available. In this way sometimes community has to face serious consequences in case of maternal illness, so availability of CMW within each Union council will not only reduce costs but a skilled person will be available for pregnant women to care for them. If she visits them during pregnancy and assists them at the time of delivery at their own homes, she will be contributing a lot for the women of the rural areas. For increasing acceptability of CMW, they suggested that she should be provided with equipment, ultrasound, and lab tests and also suggested that government should arrange food and medicine supplementation for pregnant women distributed through CMW. Some of them also suggested that there should be an ambulance with each CMW to facilitate the patient in the time of emergency and complications.

Some of them raised their concerns that the traditional birth attendants already present don't have necessary apparatus with them and cannot give injections to the pregnant women, and the trained CMWs will be able to provide these services instantly and will make a marked difference in minimizing maternal mortalities.

Most were certain that there is caste system in local area which can hinder in accessing health care facility. Some of them also added that certain families have family traditions which are also creating difficulties in accessing health care facilities. With the availability of health care provider like CMW in local area will significantly improve the overall health

care for the women especially during pregnancy and child birth. Due to deployment in local area most of the existing problems accessing health care services to pregnant women can be solved. Some showed positivity in communicating that a CMW can give better advice and suggestions to a rural pregnant woman. She (CMW) can also keep a check upon the diet and can suggest better nutritious diet plan for a pregnant woman. One husband showed his satisfaction and commented:

> *"It will be a sign of relaxation to us guys that we are having a good facility (CMW) all the time within our access"* ***(Husband)***

Some respondents added that the CMWs working in their local areas should be highly motivated and should have enough interpersonal communication skills as well as with experience that she should be able to identify high risk cases and refer them to better facilities promptly. It was a unanimous impression of the respondents that since majority of population in local area is very poor so they have a lot of difficulties in managing the payments for health care services and most of the people have to borrow money from relatives or friends and some of them sell some valuable belonging for this purpose. According to some, the performance and good nature of CMWs is the best way for acceptance of them by the community.

6. **Value to Herself (Upward Mobility):** Most were not happy to be a CMW. Most want designation "CMW" changed, as it seems like a synonym to "Dai". Some of the CMWs showed their discontentment towards their profession and disclosed that they cannot cover the whole catchment area they have been allotted and secondly people have reservations in seeking treatment from unmarried CMWs.

> *"People don't like to seek treatment from young and unmarried CMW. And this area is very much scattered I cannot cover whole area. There is area which is far away and Chaudary people live there so we don't visit them. I cannot visit households only patients can come to me for treatment".* ***(CMW)***

Even a daughter of TBA, thought she had not become what she expected and wanted to be. She joined this training thinking as she will be considered as Lady Doctor or at least a Nurse. Most had reservations about quality of trainings, delays in deployment, unclear communication to the health facilities of the area, and no communication strategy to highlight their role in the community and their value.

So as far as their upward mobility is concerned, it's not evident from findings of this research. Although there were one or two examples of higher satisfaction and confidence in the work, majority of CMWs seemed uncertain about their future and any prospects for improvement in their status and social mobility.

One most common comment coming from the discussion was their vertical structure or their alienation from mainstream health system. Most of them thought they are not part of the health system and other health provider in public sector does not own them or want to integrate with them. One CMW complained that,

> *"I went for my own antenatal to an LHV, and she made me sit outside her office for two hours and did not treat me well. My husband then took me to a private clinic. If they (LHV) don't respect us, how are they going to take special care of patients that we refer to them?"* ***(CMW)***

7. Future Expectations: Most CMWs are uncertain about their future. Some have joined private sector after getting frustrated with the response of MNCH department. One CMW, who was previously working as LHWs, wanted to go back to her LHW job. Most CMWs suggested that instead of asking community to pay for their service, they be given salary and permanent job status.

Most CMWs wanted more practical trainings and refresher courses. Some wanted birthing stations, equipment and drugs on regular basis, most of all wanted more ownership from the MNCH Programme.

Many MNCH and LHW Coordinators identified unavailability of the properly trained health care provider in the area, as one of the main problem. Some of them pointed out that CMWs and other health care providers in the area are unable to properly diagnose and refer high risk cases to the relevant consultants. Other problems highlighted were lack of 24/7 EmONC health facility with proper functional emergency services that can works round the clock, lack of female doctors round the clock in case of emergency and unavailability of LHV in some health facilities. So in order to achieve good results from CMW initiative, 24/7 MNCH services must be available and linked with CMWs.

Almost all of the MNCH and LHW coordinators were of the opinion that as CMWs is a new initiative, people are currently unaware of the benefits of services by CMW, so they may not use her services initially. Other providers like LHW, LHV, TBA who feel them as

their competitor, may create difficulties for them. Some of the respondent said that we have to make all of them realize that they may have similar role but yet they are quite different. They are trained differently to work differently. LHW has to impart health education and has a preventive role, while a CMW has to provide curative treatment.

Other respondents added that in their opinion there are two main components of success, one is technical services and other is communication skills. If CMWs are good at these they will be accepted by all groups of people and vice versa. So these two components must be strengthened in the trainings.

> *"We will try to facilitate CMW's according to their need. We will fully cooperate with them Insha Allah. If they will call us even in the middle of night, we will go with them. We will also try our level best to upgrade their skills and address their deficiencies."* ***(MNCH Coordinator)***
>
> *"We will tell our community, the difference between an LHV, LHW, and a CMW and will also explain to make them aware about the expertise of a CMW".* ***(LHW Coordinator)***
>
> *"It is a good initiative if they (CMWs) can reduce the burden of maternal deaths. As I have already mentioned that our major problem is un-booked complicated obstetric cases which were mishandled at local level. I am certain with a little more effort in polishing their practical skills they will serve the purpose"* ***(District Gynaecologist)***
>
> *"If the right of transfer is given to me then, girls who are doing well I will shift them to places where they are needed more and girls who are not doing well as a punishment I will transfer them to far flung places."* ***(DHO)***

5. DISCUSSION AND CONCLUSIONS

GIS Mapping of CMWs have shown that although most CMWs are placed in peripheral rural areas, there were many areas with no CMW coverage and some area with overlap of outreach and proximity with another CMW zone. So there is a problem of uneven catchment areas and many marginalized areas with no CMW coverage. This problem was more common in districts of Neelum, Muzaffarabad, Mirpur, Bagh and Bhimber.

Similarly in most areas, there was availability of other care provider nearby CMW residence which limits the scope of CMW as on one hand she may be having more competition and on the other hand the logic of providing CMWs services to those areas that have no alternate provider, is not fulfilled.

Results of population based survey provided greater insight to the many facets of maternal and newborn health in AJK. Most respondents were middle aged with less education levels, and the monthly incomes showed much variance with overall results signifying predominance of low income families. Same was true for basic amenities like water, toilet, electricity and gas supply in the house. Majority respondents formally employed in low wages, is also common finding as seen in other survey. A very high proportion of respondents (78%) reporting illness over the last 6 months is quite alarming. Many (29%) respondents needing hospitalisation in last illness also highlight the issue that the illness was not mild. For treatment options in illness, the majority of the respondents reported, going to the government health facility, which is a positive finding.

The main source of information for MNH services in the area is community members and community health workers, and very few respondents reported to get MNH information from health facilities. This signifies the importance of community linkage and LHWs as one good source for providing valuable health information to the community, on the other hand shows the poor performance of public health facilities in health communication and health education domains.

Awareness about availability of CMWs in the area was very low, which means that when the CMWs were deployed, they were not backed by a strong communication strategy for the dissemination of information regarding their availability in the community. If majority of the residents are unaware of the availability of CMW in the area, it may not be possible that community will use their services. On the other hand it also signifies

another important aspect that even after months of deployment the CMWs did not make significant awareness about their availability and their role in the area. Similar finding were witnessed in Malaysia, Indonesia and Nepal when CMWs were posted initially. Later on the utilisation rates improved, after a well-targeted communication strategy was launched to highlight the importance of local health worker and community was encouraged to use their services. [20, 21, 22, 23]

It is not striking to note that only 3.7% of the respondents reported CMW have visited their house and 5.2% reporting to have visited CMWs house, because 90% of the community was not aware of the availability of the CMWs in their area. Only 3% of deliveries done by CMWs is not a poor indicator, as they were deployed less than a year ago. Among those who visited CMWs, most women walked to the CMWs house, which means that CMWs were accessible nearby, without the need of any transport. This relates to the study findings in other parts of the world where services of community health workers are used when they are available at less distance from community. [23, 24]

As expected, most of the delivery and maternal health services were provided by TBAs. This is a common finding in Pakistan. Most respondents showed faith in their skill and competence as reason for using their service. Majority respondents taking training and skill as the most important reason for visiting preferred service provider provides challenge for the CMWs. In order to improve the utilisation of CMW service, first she has to prove her knowledge and skill in the community. Although many respondents were willing to take CMWs in referral linkage with LHW and LHV, a very high number of respondents mentioned high cost of CMWs service as main reason for not using their service. The creation of LHW to CMW referral linkage can be very helpful as in Pakistan registration of maternity cases by LHWs has shown positive effect on skilled delivery. The LHW-MIS data has shown in all the provinces that out of the LHW-registered maternity cases, most tend to have skilled delivery. Although an overall registration by LHW is not optimal, but this linkage can be utilized in AJK to improve skilled delivery with involvement of CMWs.

The significant differences in age, education, distance and income were noticed among the groups who visited and those who never visited CMWs. There was significant difference in age groups, with extreme ages not going to CMWs; more educated not visiting CMWs; while women with only primary school education visiting CMWs. Extremes of income groups were not visiting, while those needing a travel time of more than 30 minutes to reach CMWs house also tend not to visit CMWs.

The most intricate issue emerging out of the comparison between these groups was health expenditure in last six months. Expenditures were higher for the group which never visited the CMWs. The expenditure in group which visited CMWs was lower on all categories, signifying an assumption that those visiting CMWs were probably poorer and have less affordability than the other group that never visited CMWs. Although the difference was statistically significant for all expenses, except medicines, the difference was greatest in consultation fees; where median fee paid to CMW Rs. 20 as compared to the median fee Rs. 750 paid by other group which never visited CMWs. This finding has a significant implication and provides us insight into the importance of CMWs for poor families.

Enough evidence is there to conclude that selection, training and deployment process of CMWs needs further improvement. Owing to the novelty of programme as well as dependence on federal departments, there were too many delays in sequencing of activities starting from selection of candidates, initiation of trainings, examinations, certifications, and most importantly deployment of CMWs in AJK.

Most CMWs were concerned that their designation as “Midwife” is lowest grade employee in government and private hospitals and it is posted in grade-1. CMWs were of the opinion that this designation puts them on bottom of the health providers list and they cannot attain the social mobility unless their designation is improved to the level of skilled providers like LHV and Nurse.

The results point to the paucity of skills and capacity of CMWs to tackle issues of maternity care in remote rural setting. The class room training component was not of good quality, the practical aspect almost lacking and with no refreshers and continuous professional development strategy. One reason which most community respondents expected for skilled provider in order to seek maternity care was provider’s skill and training. But as CMWs lacked this aspect, very little utilisation was found with limited clientele. This has been a problem at the initial stage of launching community based health workers in many countries. Selection and training of community worker is crucial as well as very challenging. It improves gradually and with time can be taken care of through proper training programme and community based skill development.[16, 20, 26]

There was limited linkage of CMWs with LHWs, and with health facilities. This is crucial as in case of referral due to maternal complications an excellent network of health facilities is needed with transport service. There is also lack of availability of 24/7 maternal care services which make the job of CMWs more crucial and challenging. Lack of trust from district gynaecologist and health authorities also put CMWs in lower level of

social mobility and most CMWs don't have much say in the primary and secondary level health care facilities. This can cause problems for the cases referred to the higher level facilities. International research studies have highlighted the importance of proper referral system and continuous support of higher level treatment facilities to the community workers, in order to make any community based intervention beneficial.[27, 29, 30]

Findings from qualitative research highlighted the problem of poor interpersonal communication skills in them. This was across all the districts and almost in all the districts with most CMWs, thereby referring the problem is generalized, and in all the areas.

It will be very difficult for the CMWs in remote, rural community setting to make women understand certain vital signs of maternal and newborn care. Also this will put them in lower position as compared to the other experienced traditional providers like TBAs which have very good interpersonal communication skills. In some research studies on community based workers, the social mobility has been linked to individual level attributes of workers, but also with system in which they are working. [47, 49, 52]

6. RECOMMENDATIONS AND WAY FORWARD

The specific recommendations are as follows;

1. During selection of women for CMW training, priority must be given to those villages where none or limited options are available for maternal health care.
2. There is a need to involve community representatives in selection of women for CMW trainings. This will help build ownership of community and may also ensure that selected and trained CMWs will stay in their area and perform their work in a favourable environment.
3. MNCH Programme should consider renaming the title CMW in consultation with CMWs in order to improve their value in community and increase their motivation.
4. The training of CMWs needs revision and must be made more practical and skill based rather than theoretical. There is clear need of incorporating interpersonal communication skills in the CMWs curriculum so that they are able to interact with the clients in a better way and make their services more valued. There is also a need for refreshers and continuous training of CMWs to maintain and update their skills.
5. Delays in selection and training and between completion of training and examination must be avoided; and deployment must be immediate after passing the exams as delays cause frustration and lack of interest and mistrust on the part of CMWs.
6. The deployment must be done in a more formal manner with involvement of community elders/notables and proper communication of the benefits of CMWs to the community. This dissemination and launching ceremony must be followed by continuous monitoring and support of the CMW work.
7. CMWs must be linked with 24/7 health facilities so that they can refer the cases when ever needed and there are services available to support their work. This referral link may start from LHWs to secondary level health facilities but will definitely require more integration at programmatic level, as MNCH and LHW programme are managed at separate level in district as well as provincial level.
8. As most of the CMWs were hesitant in asking fees from poor clients, there must be a window of adjusting those who cannot afford to pay, through Zakat or Bait-ul-Mal, and Social Welfare Department. The BIS scheme can also be tapped for the funds for poor women.

9. Mechanism should exist to recognise good performance by a CMWS through financial or any other incentives so that the good performing CMWs can maintain the good work while others are motivated for putting more efforts in their work.
10. As TBA has been identified a common service provider for maternity care in rural population in AJK, their position in the community should be leveraged upon for the support of CMWs. This research witnessed close collaboration between TBAs and CMWs in two districts. The MNCH Programme can integrate between these two providers at village level in order to develop collaboration instead of competition.

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