

**UTILIZATION OF MATERNAL HEALTH SERVICES PROVIDED BY
COMMUNITY HEALTH WORKERS AMONG PREGNANT WOMEN, IN
MKURANGA DISTRICT, TANZANIA**

Isihaka J. Mwandalima

**Master of Medicine in Community Health Dissertation
Muhimbili University of Health and Allied Sciences
November, 2013.**

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By

Isihaka J Mwandalima

**A Dissertation Submitted in (partial) Fulfilment of the Requirements for the degree
of Master of Medicine in Community Health of
Muhimbili University of Health and Allied Sciences**

**Muhimbili University of Health and Allied Sciences
November, 2013.**

CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled “*Utilization of Maternal Health Services Provided By Community Health Workers among Pregnant Women, In Mkuranga District, Tanzania*” in (partial) fulfilment of the requirements for the degree of Master of Medicine in Community Health of Muhimbili University of Health and Allied Sciences.

Dr. David Urassa

(Supervisor)

Date

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I, **Isihaka J Mwandalima**, declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

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DEDICATION

This work is dedicated to my beloved parents who have always been there for me despite being miles away, My Son Asukile, good friends of mine and my beloved sister Elizabeth; all of you for adjusting and accommodating me during all this period of study
I love you all.

ABSTRACT

Background: The burden of maternal mortality is higher in developing Countries which is approximated to harbor 99% of the global burden; the Sub Saharan Africa harbors an enormous portion of this burden, Tanzania inclusive. Efforts in improving maternal health are being hampered by number of factors which include Shortage of human resource for health (HRH) and poor access to care by pregnant women. To bridge this gap a Community health worker model is being implemented in a number of countries and has shown to be effective. Community health workers are community members who are given short course training, intended to enable them provide health services especially in remote and underserved areas. However little is known about utilization of the services offered by CHW and factors that influences the utilization of the services they provide in the community.

Objectives: The aim of the study was to determine utilization of maternal health services provided by CHWs among pregnant women in Mkuranga district Tanzania

Materials and Method: This Analytical cross sectional study was conducted among pregnant women attending antenatal clinic in Mkuranga district. Semi structured questionnaire and Reproductive and Child Health Card number 4 (RCH Card No 4) were used to collect data. Data was entered in SPSS version 20 statistical package. Descriptive statistics was used to describe the data, chi square was used to check evidence of association of variable at population level and logistic regression was used to check the relationship of factors with utilization. STATA version 12 was also used in constructing the wealth index.

Results: Total of 612 pregnant women aged between 18 to 48 years, with median age of 28 were recruited in the study. Among the respondents 48 (8.5%) were HIV positive. More than a quarter (27.5%) of pregnant women reported to have utilized services provided by CHW's in

their current pregnancy. Marital status, respondent education, partner education and occupation influenced utilization of maternal health services provided by community health workers.

Conclusion: Significant number of pregnant women in Mkuranga district utilizes CHWs services. The study suggested different relationship of some factors known to influence utilization of health services provided by CHWs as compared to when provided by modern health care system.

Recommendations: Deployment of more CHWs to improve their access by pregnant women, improving supportive supervision to CHWs as well as reviewing CHW scope of work and workload should be considered. Studying community acceptability of CHWs program and exploring CHW competency and effectiveness in executing the tasks assigned to them is of paramount importance.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired immunodeficiency Syndrome
ANC	Antenatal Care
ART	Antiretroviral Therapy
CHW	Community Health Worker
DHS	Demographic Health Survey
eMTCT	Elimination of Mother to Child Transmission of HIV
HIV	Human Immunodeficiency Virus
HRH	Human Resource for Health
IRB	Institutional Review Board
IQR	Interquartile Range
MDG	Millennium Development Goal
MNCH	Maternal Newborn and Child Health
MoHSW	Ministry of Health and Social Welfare
MTCT	Mother to Child Transmission of HIV
MUHAS	Muhimbili University of Health and Allied Sciences
NCD	Non Communicable Disease
PASADA	Pastoral Activities and Services for People with AIDS
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission of HIV
POR	Prevalence Odds ratio
RCH	Reproductive and Child Health
SES	Social Economic Status
STDs	Sexual Transmitted Diseases
SSA	Sub Saharan Africa
TB	Tuberculosis
UNGASS	United Nation General Assembly Special Session
WHO	World Health Organization.
WHA	World Health Assembly

WISN	Workload Indicators for Staffing Need
VMH	Village Medical Helpers
VHW	Village Health Worker

OPERATIONAL DEFINITIONS

Community Health workers, Members of the community who offer community based health services by either visiting the households for health education or counseling for the aim of improving the health of the community who are also known not to be employed in a formal health system with no formal education and qualification.

Maternal health services in this study will include health education and counseling on family planning, antenatal clinic attendance, delivering in health facility, HIV serostatus disclosure and use of ARVs for PMTCT excluding community case management by CHW.

Utilization, Pregnant woman is said to have utilized community health worker services if she reports to have used any of the maternal health services provided by CHW in the current pregnancy

CHAPTER ONE

1. INTRODUCTION

1.1.1 Who are Community Health Workers

A concept of Community Health Worker (CHW) evolved for many years. These are people who are nearly in all communities and are recognized for their skills in restoring and preserving health. The concept of CHW gained popularity globally in the late seventies after proclamation of the primary health care by World Health Assembly in Alma Ata Kazakhstan. The concept emphasized on community participation, it was geared to increase access to basic health care services by the people with a vision of “health for all by the year 2000. Engagement of CHW is expected to diffuse community change to individuals; in addition, CHWs are postulated to reduce disparities through improving access and utilization of health care services, providing culturally competent health education, counseling, and sometimes rendering direct health services. Additionally, as trusted members of the community, CHWs may contribute in minimizing barriers to care resulting from health beliefs and health values.⁽¹⁾ Despite some successful experiments of community health workers interventions in small scale, enthusiasm for CHW programmes declined with time, mainly due to difficulties in recreating successful models at the national level.⁽²⁾

Community members with modest and appreciable training selected by the community and who provides a wide range of services mostly preventive, promotional and curative⁽³⁾ services are the ones referred to as CHWs. These people herein referred as Community health workers have been recognized by several names in different communities. In Tanzania they are referred as Village health workers(VHW), Community health based care(CHBC), *Wawezeshaji wa Afya* (WAJA), Community health volunteers (CHV), Lay health workers, Community health agents(CHA), Primary health care workers (“*Wahudumu wa afya ya msingi*”) et cetera. Lewin et al 2005 defines Community health worker as “any health worker

carrying out functions related to health care delivery; trained in some way in the context of the intervention; and having no formal professional or paraprofessional certificated or degreed tertiary education”

WHO defines Community health workers as “members of the communities where they work, who are selected by the communities, answerable to the communities for their activities, supported by the health system but not necessarily a part of its organization, and have shorter training than professional workers”.

Tanzania ministry of health and Social Welfare defines a community health worker as a member of a particular community whose task is to assist in improving the health of that community in cooperation with the health care system, public health agencies and the broader community.

1.1.2 Roles of Community health Workers

There are 57 countries with a critical shortage of healthcare workers, Tanzania inclusive with a deficit of 2.4 million doctors and nurses. Africa has 2.3 healthcare workers per 1000 population, compared with the Americas, which have 24.8 healthcare workers per 1000 population.⁽⁴⁾ Only 1.3% of the world's health workers care for people who experience 25% of the global disease burden in SSA.⁽⁴⁾ Developing countries Tanzania inclusive suffers severe shortage of human resource for health leading to failure in reaching vast numbers in need of health care services. Tanzania physician population ratio is 0.02 per 1000 population.⁽⁵⁾ The Tanzania health sector performance profile report in 2010 report that by December 2010 sixty four percent of the actual requirements for health workforce were available with 36% deficit of the actual requirement, ratio of medical officers per population was 1 per 20,408 and ratio of nurse midwives per population was 1: 2,500. This situation does not meet the standard required medical officers per population ration 1: 10,000 and nurse midwives per population ratio of 6:1000 population. Geographical disparities in distribution and intra-country

'migration' of health workforce from rural to urban areas are highly pronounced problems in Tanzania.⁽⁶⁾

This dire crisis of human resource for health in Tanzania is being mitigated by a number of strategies including intensification of pre service training by increasing enrollment and task shifting on selected health service provision roles. Task shifting has included CHWs deployment in provision of a range of health services. CHW re- emergency is highly explained by the increased burden of disease especially the advent of HIV and AIDS as well as persistence of morbidity and mortality due to a number of health problems.

CHWs performs a wide range of tasks including: home visits, environmental sanitation, provision of water supply, first aid and treatment of simple and common ailments, health education, nutrition and surveillance, maternal and child health including family planning activities, TB and HIV/AIDS care (i.e. counseling, treatment support and palliative care), malaria control, treatment of acute respiratory infections, communicable disease control, community development activities, referrals, recordkeeping and collection of data on vital events.^(7,8) These tasks are performed in many different combinations and with different degrees of breadth and depth.

A number of CHWs programs and models have been developed ranging from large scale national programs to small-scale community-based initiatives. Models of care using CHWs vary from making them an integral part of the care delivery team to involving them as community navigators, education providers and medical services provision or outreach agents.^(1,9)

In the 1960s and 1970s, Tanzania and Zimbabwe developed programs of community health promoters. People with some formal education were trained for a relatively brief time; six months was common, to improve access to health services. In Tanzania specifically CHWs program started in early sixties by training of medical auxiliaries limiting expansion of

hospitals with villageization program. This was followed by the Arusha Declaration in 1967 which aimed at settling the rural population by ensuring access to essential social services Tanzania embarked on a Village Medical Helpers (VMH) program in 1969.

With this overview it is clear that CHWs perform myriad roles, this has been a concern which is yet to be settled. Experts argue that CHW roles and their scope of work should explicitly be defined to enhance programs effectiveness taking into account that most of them work on voluntary basis.⁽¹⁰⁾

1.1.3 Maternal Health Community Health Worker Interventions

Maternal and Child health service is among the area of focus targeted by Community health workers programs globally since the inception. In seventies Tanzania embarked on a CHW program which among the range of activities that were performed included identification and referral of high risk pregnancies, immunization and family planning.⁽¹¹⁾ Uganda also embarked in more or less same project on pregnancy monitoring in 1993 where community members were trained to provide among others; information and health counseling on family planning, identification of pregnant women in the community and refer those with high risk factors to health facilities.⁽¹²⁾ In the early 1990s a community based distribution (CBD) system was established to promote contraceptive use in Tanzania, evaluation of the program revealed increased contraceptive prevalence in setting where the program was rolled out.⁽¹¹⁾

A number of Community based interventions targeting pregnant women have been implemented and tested especially in population segments of low social economic status in developing and developed countries; these interventions has demonstrated significant reductions in maternal and neonatal mortality and morbidity.⁽¹³⁾

Tanzania with such pioneering history in CHWs programs at the global level now is reviving the cadre with revitalized impetus especially in Maternal newborn and child health Care. This commitment is evidenced in the Tanzania national road map strategic plan for reduction of maternal newborn and child deaths operational targets which include having 75% of villages

with trained and employed community health workers offering MNCH services at community level by 2015. This concept is also underscored in the Tanzania Primary health services development programme (2007-2017) which reckons the training and deployment of CHWs focusing on reproductive health services. Of recently the ministry of health and Social welfare has formulated the national integrated community maternal, newborn and child health guidelines. This guideline among other services to be provided by community health worker includes; counseling on Care of the pregnant mother during pregnancy; postpartum period; Family planning; Newborn care and prevention of HIV transmission from mother to child services. They also promote health and prevention of Malaria and other pregnant related diseases including encouraging attendance to ANC.

1.1.4 HIV and AIDS Community Health workers interventions

Re –emergence of CHWs concept has been propelled by the advent of Human Immunodeficiency Virus (HIV) and Acquired Immuno Deficiency Syndrome (AIDS) which has drained health systems especially in lower income countries of their health workforce while conversely increasing their demand.⁽²⁾ Many CHWs programs then established intended to provide continuum of care for the people living with HIV and AIDS. In resource-limited settings, the CHW approach has regained credibility through its support of HIV and AIDS care, in particular voluntary testing and counselling (VCT), and treatment adherence support for people on HIV and TB treatment.⁽²⁾

Number of studies conducted in Haiti, Brazil, Ethiopia, Malawi, Namibia, Mozambique and Uganda demonstrated that delegation of specific tasks to cadres of CHW can increase access to HIV and AIDS services particularly in rural areas and among underserved communities. CHW strategy is known to improve quality of care for HIV and AIDS including PMTCT services.⁽¹⁴⁻¹⁶⁾

1.2 STATEMENT OF THE PROBLEM

WHO estimates that 800 women die from pregnancy or childbirth related complications around the world every day. In 2010 alone, 287 000 women died during pregnancy and/or following childbirth. Almost all maternal deaths (99%) occur in developing countries; more than half of these in sub-Saharan Africa, Tanzania being one of the country which ranks high in maternal mortality.

Large proportion of maternal mortality burden is due to factors that can be avoided such as postpartum haemorrhage. Maternal death has been estimated at 2, 10 to 13 times higher in HIV positive pregnant mothers as compared to HIV negative pregnant mothers in different study settings.⁽⁴⁰⁾

Despite the burden in maternal morbidity and mortality, facility based maternal health services are still underutilized by the community. This is known to be contributed by low awareness of the community on importance of utilizing these services, low referral and linkage to health facilities and shortage of health workforce. CHW interventions in maternal health have been implemented for years.

Moreover, utilization of the services they provide is not well documented and sustainability of the interventions is questionable. Therefore involvement of another extension cadre like CHWs to increase health service utilization seem to be ideal to rectify the situation so as to fasten realization of the maternal health related millennium development goals. However little is known regarding utilization of maternal health services provided by CHWs.

1.3 RATIONALE

Tanzania Ministry of Health and Social Welfare strategic plans have emphasized on deployment of CHWs especially in the area of Reproductive and Child health (Primary health services development Program, 2007-2017; Strategic plan to accelerate reduction of maternal newborn and Child deaths in Tanzania, 2008-2015)

The inadequacy of evidence regarding utilization of maternal health services provided by CHW to pregnant women at global to local level show the necessity of this study. Strengthening the weak health systems in developing countries which are suffering from shortage of human resource for health (HRH), needs innovative and evidence based interventions. Recently there has been an increase in implementation of CHW programs globally aiming at addressing the HRH gap. This justifies the need to conduct this study.

Despite the modest improvement in maternal health in Tanzania, studying the interventions and strategies on board for their effectiveness in improving maternal health is crucial. The study will inform Ministry of Health and Social Welfare (MoHSW) of Tanzania in instituting appropriate informed actions.

The study will also unveil the pregnant women practice on utilization of CHW in maternal health services in Tanzania, identifying gaps and strengths, yielding reliable information hence shun away from using anecdotal evidences.

1.4 Research questions

- What types of health services are offered by CHWs to pregnant women in Mkuranga district, Tanzania?
- What proportion of pregnant women in Mkuranga district utilizes maternal health services offered by CHWs?
- What factors influence pregnant women to utilize maternal health services offered by CHWs in Mkuranga District, Tanzania?

1.5 OBJECTIVES

1.5.1 Broad objective

To determine utilization of maternal health services provided by community health workers and the influencing factors among pregnant women in Mkuranga District Tanzania

1.5.2 Specific Objectives

- 1) To determine proportion of pregnant women utilizing maternal health services provided by CHWs.
- 2) To determine factors influencing utilization of maternal health services provided by Community health workers among pregnant women.
- 3) To determine the types of services offered by community health workers to pregnant mothers
- 4) To compare utilization of maternal health services provided by CHW between HIV positive and HIV negative pregnant women.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Maternal Health Situation

Global maternal mortality and morbidity burden has been persistently and unacceptably high for decades despite the almost universal implementation of a number of innovative and evidence based interventions. World health organization estimates of 2011 suggest that the number of women dying as a result of complications during pregnancy and childbirth has decreased by 34% from 546 000 in 1990 to 358 000 in 2008. Despite this notable progress, the annual rate of decline of 2.3% is less than half of the 5.5% needed to achieve the target of reducing the maternal mortality by two third by 2015 (MDG).

World health organization estimates that's a woman's lifetime risk of maternal death is estimated at 1 in 3800 in developed countries, versus 1 in 150 in developing countries⁽¹⁷⁾. Other studies estimates the risk of a woman dying from pregnancy or childbirth to be about 1 in 7 in the poorest countries and 1 in 30,000 in the richest countries.⁽¹⁷⁾ This disparity might be attributed by the difference in fertility rates where in average women in developing countries have many more pregnancies in contrary women in the developed countries, which also highlight issues of family planning access to people in developed countries.

The remarkable disparities in the magnitude of maternal mortality and morbidity are between developed and developing countries and also within the countries. This is reflected by the variation of the causes of maternal deaths for instance analysis of causes of maternal deaths by world health organization revealed haemorrhage to be leading cause of maternal deaths in Africa while in Asia and Latin America hypertensive disorders and abortion were the leading causes.⁽¹⁸⁾ This Magnitude of maternal deaths in different parts of the world highlights the inequities in access to care and the gap between the rich and poor.

About 60% of maternal deaths occur during labour, delivery and immediate postpartum period. Fifty percent of these deaths occur within the first 24 hours of delivery.⁽¹⁹⁾ The causes of maternal deaths include direct causes (e.g. obstetric hemorrhage, Hypertensive disorders obstructed labor) which contribute to about three quarters of the maternal deaths and indirect causes (e.g. HIV and AIDS, Malaria and Anaemia) which contribute to about one quarter of the maternal deaths.⁽¹⁹⁾

Family planning when well practiced has also shown to be one of the effective methods by preventing more than third of maternal deaths. With the knowledge that 15 percent of pregnancies ends up in complications which contribute to a larger portion of the occurring maternal deaths, promoting family planning is essential.

Of recent a number of CHW programs are being implemented targeting HIV and AIDS related morbidity and mortality including prevention of mother to child transmission and maternal newborn and child health. CHW programs have proved to increase utilization and access to health care services to pregnant women.⁽¹⁰⁾

Globally 1800 children acquire Human Immunodeficiency Virus (HIV) infection daily, and more than 85% of these HIV-infected children live in sub-Saharan Africa.⁽²⁰⁾ According to MOHSW statistics, 18% of all HIV new infections in Tanzania are due to MTCT.

To optimize the effectiveness of the PMTCT programme, Tanzania adopted the WHO four pronged comprehensive approach that is aimed at improving maternal and child health in the context of an HIV epidemic i.e. i) primary prevention of HIV among reproductive age women and their partners by ensuring access to information, testing and counseling on how to prevent HIV transmission, ii) provision of family planning services for HIV-infected women and their partners to prevent unintended pregnancies, iii) HIV Testing and counseling(HCT) for antenatal mothers and ARV prophylaxis for prevention of HIV transmission from mothers to infants - use of antiretroviral drugs to prevent HIV transmission from mother to child, and iv)

clinical and CD4 count assessment to determine eligibility of mothers for ART and provision of treatment, care and support to HIV-infected women, their partners, infants and families - access to care, treatment and support for infected mothers, infants and other family members.

UNAIDS and partners including Tanzania have called for total elimination of mother to child transmission (eMTCT) of HIV by 2015. Also Tanzania is committed to reduce maternal mortality to 193 deaths per 100,000 live births by 2015. By 2010 maternal mortality ratio in Tanzania was 454 per 100,000 live births far away from the target by 2015 which stands at 193 per 100,000 live births.

Proportion of maternal mortality burden related to HIV and AIDS globally is 6.5% while in Sub Saharan Africa the proportion is 10.4% (WHO report 2012) Maternal death has been estimated at 2, 10 to 13 times higher in HIV positive pregnant mothers as compared to HIV negative pregnant mothers in different study settings.

To achieve these goals, countries need to have adequate and skilled HRH as well as increasing pregnant women access to care. According to recent WHO estimates, the current health workforce in some of the most affected countries in sub-Saharan Africa would need to be scaled up by as much as 140% to attain international health development targets such as those in the Millennium Declaration.⁽⁵⁾ One of the long term identified solutions in tackling this health workforce crisis is intensifying pre service training but abreast this complementary and shorter-term strategies includes tasks shifting from people requiring long-term training to those requiring less intensive and short term training such as CHWs.⁽⁵⁾

CHWs offer a wide range maternal health services to the community, ranging from provision of safe delivery, counseling on breast-feeding and HIV and AIDS,⁽⁸⁾ nutritional counseling, identification of pregnant women with danger signs and referring pregnant women for appropriate care. This study will identify the role of CHWs in provision of maternal health services and their overall contribution towards achieving the international and local maternal

health goals. The study will study utilization of CHW services and factors influencing it in efforts to increase access to care by pregnant women as well as improving maternal health through provision of health education.

2.2 Factors Influencing utilization of Health services

Utilization of CHWs services is context-sensitive and linked to a number of factors.⁽⁷⁾ Several studies have explained factors that influence utilization of modern health services and few are available to describe factors influencing utilization of services offered by CHWs. The following are factors known to influence modern health services utilization and few community based maternal health services offered by CHWs,;-

Age, Age difference is associated with different health seeking behaviors including types of services sought; this can be explained by the socio-cultural dynamics changes evolving as a function of time. Advances in age tend to diminish the gender differences in utilization of health services.⁽²⁶⁾ Increase in age for both females and males is associated with more visits to General practitioner in Serbia.⁽²²⁾ and traditional healers.^(27,28) Some studies showed that some age groups were likely to use health facilities services than other age groups.⁽²⁹⁾ Mother's age at birth plays an important role in utilization of pregnancy related care.⁽³⁰⁾

Education is one of the factors associated with utilization of health services in different segments of populations. People with more education are usually expected to have better health care seeking behavior and access because of the knowledge they have also financial accessibility of services compared to those with little or no education. Studies show a proclivity to service utilization by the educated people than the less educated ones.^(22,32) Another study in Brazil showed that the less educated use outpatient health service less frequently despite presenting with worse health conditions.⁽²³⁾ Maternal education and Husband education are among the factors identified to influence utilization of antenatal care.⁽³³⁾ Utilization of antenatal care increases as husband educational level increases. Husband educational levels seem to be a stronger predictor of service utilization than women's educational level.^(28,31)

Occupation, Studies have shown that different occupation chooses and utilizes health services differently. Employees are more likely to utilize medical health care than unemployed ones in a study conducted in Burkina Faso.^(29,33) Women married to unemployed men had inadequate ANC compared with those whose husband had other jobs.⁽³¹⁾

Religion is embedded in socialization process of the society and individuals hence influencing people's reaction to the external and internal environment. Christian affiliation significantly increased the probability of using oral health care facilities.⁽²⁹⁾ Muslims were much more likely to seek routine ANC in India than other religion. Women who followed Muslim, Orthodox and Protestant religions were more likely to use ANC in Ethiopia. In contrast, religion was not a statistically significant predictor of antenatal check-ups in India.⁽³¹⁾

Family size: A study conducted in India showed that women from nuclear family are less likely to use ANC services compared to those from extended families.⁽³¹⁾

Marital status Married women were more likely to receive ANC and seek earlier than single or unmarried women in a study conducted in Kenya.⁽³¹⁾ Being married was one of the most influential determinants of health care access and the predictive power of marital status was attributed to the fact that pregnancy and childbirth provide a point of entry into health care.⁽³²⁾

Beliefs, In Hausa culture, 'God's Will' was the strongest factor in non-utilization in Nigeria.⁽³¹⁾ and one reason for not attending ANC at first trimester was fear associated with the local belief that the early period of pregnancy was most vulnerable to witchcraft.⁽³¹⁾ In Zimbabwe there was a fear that blood could be used for bewitching women if it came into the wrong hands, or that it would be tested for HIV and the result recorded on their ANC card.⁽³⁴⁾ Beliefs about causes of illness—*Ishawe Yinyoni* (witchcraft) was identified as a barrier to health service use in a study conducted in South Africa.⁽³⁵⁾

Knowledge Seven studies showed that exposure to mass media (especially television and radio) significantly predicted utilization of ANC. Women with high levels of exposure were more likely to receive ANC. Studies have also demonstrated that watching television every week substantially increased the chances of women seeking ANC.⁽³¹⁾

Ethnicity can influence health service utilization and can account for less or frequent use.⁽³²⁾ In India women belonging to some ethnicities had lower uptake of ANC. The timing of the first visit varied between ethnic groups in Kenya. Kurdish women were less likely to use ANC services in Turkey. In Guatemala Non-Spanish speaking indigenous women used biomedical services less.⁽³¹⁾

Length of stay in the community in some studies has been seen to influence the utilization of Community Health Workers services.

Perception of level of illness has shown validity across a number of studies as a strong predictor of health service utilization.^(23,32) In Burkina Faso adults who perceived oral disease to be just as important as general diseases were most likely to have made a visit. And the people with the highest perception of impairment had a very high probability of having made a visit to health services.⁽²⁹⁾ Another study showed that fear of problems in labor was the primary reason for pregnant mothers wanting to deliver in a health facility.⁽³⁵⁾

Income: Individuals with higher incomes, high material living conditions and residing in a house constructed of modern materials have more chances of using health services than those with lower income.^(22,28, 29,32) A study done in South Africa on impact of maternal and neonatal health services utilization revealed that people with significant fewer resources had lower maternal and infant health services utilization compared to those with more resources.⁽³⁵⁾ Women with high economic status were more likely to receive adequate and early ANC than those with low economic status.⁽³¹⁾ In Pakistan, household income was 1.75 times higher among women receiving ANC than those who received none. Owning property, a

car, or having a flush toilet and higher standards of living have shown a positive association with ANC.⁽³¹⁾ A study conducted in Tanzania revealed that utilization of oral health care services was higher among those with ability to pay.⁵⁰ Other studies conducted in Tanzania showed that lack of money was among the reason which led to late initiation of antenatal care by pregnant mothers⁴⁹ and use of biomedical obstetric care to be associated with material factors including household assets.⁵¹

Distance to service provision point is one of the factors associated with utilization of health services several studies have shown this.⁽³⁵⁻³⁹⁾ Women who lived near a village health worker/nurse were more likely to receive adequate and early ANC visits than women without a village health worker.⁽³¹⁾ Institutional delivery service utilization was associated with shorter distance.⁽²⁸⁾ In Uganda caregivers who were close (within a kilometer) to a health facility were less likely to utilize CHWs compared to those who resided far.⁽³⁸⁾

Travel time, An increase in travel time to the nearest healthcare facilities was associated with fewer antenatal visits, and lower uptake of ANC.⁽³¹⁾ Prolonged travelling times was identified as barrier to the health care for patients in their endeavors to seek medical help.⁽³²⁾

The **costs** of the service including **transportation** and necessary Laboratory tests were major factors prohibiting service utilization. Free or subsidized services improved uptake of ANC among urban slum-dwelling women.⁽³¹⁾ Irregular public transport in both cities and suburbs is barrier to the health care utilization.⁽³²⁾ In Uganda High cost was also a barrier to treatment of both acute and chronic conditions.⁽³⁹⁾

Attitude Mathole et al found poor quality of care and negative attitudes of service providers were barriers to utilization in Zimbabwe. Service acceptability and ultimately utilization in Uganda depended on the health worker attitudes and practices.⁽³⁹⁾ Poor relationships between patients and healthcare providers, and rude and unfriendly attitudes of nurses, were major reasons women preferred not to be referred to some hospitals.⁽³¹⁾ Discourteous care and

stereotypical attitudes towards patients can act as a barrier⁽³⁸⁾ and have a detrimental effect.⁽³²⁾ Perception on quality of care also seem to influence utilization of maternal health services provided by modern health care.⁵²

Satisfaction from utilization of services lead to people to utilize services more, in a study conducted in Kalabo, Zambia 86% people tended to seek Hospital services if dissatisfied with services offered by traditional healers.⁽²⁷⁾ In Uganda of 242 respondents whose first point of care was a CHW, 97.9% reported that they were satisfied with the service they received.⁽³⁸⁾

Studies have demonstrated strong associations between **parity** and ANC utilization. High parity women tended to use ANC services more often than primiparous women in Ethiopia. Similarly, women's first ANC visit was earlier in higher parity women in India.⁽³¹⁾ Institutional service delivery utilization was higher in primiparous women as compared to multiparous ones.⁽²⁸⁾ study in Bangladesh shows women with low parity to have a tendency of using services which was decreasing as parity increases and then rose higher to women with more than five pregnancies.⁽³³⁾

It is not very clear what factors influence utilization of maternal health services offered by CHWs. This study seeks to identify them and offer possible recommendations to better utilization of these services.

2.3 Conceptual framework on Utilization of services offered by CHWs

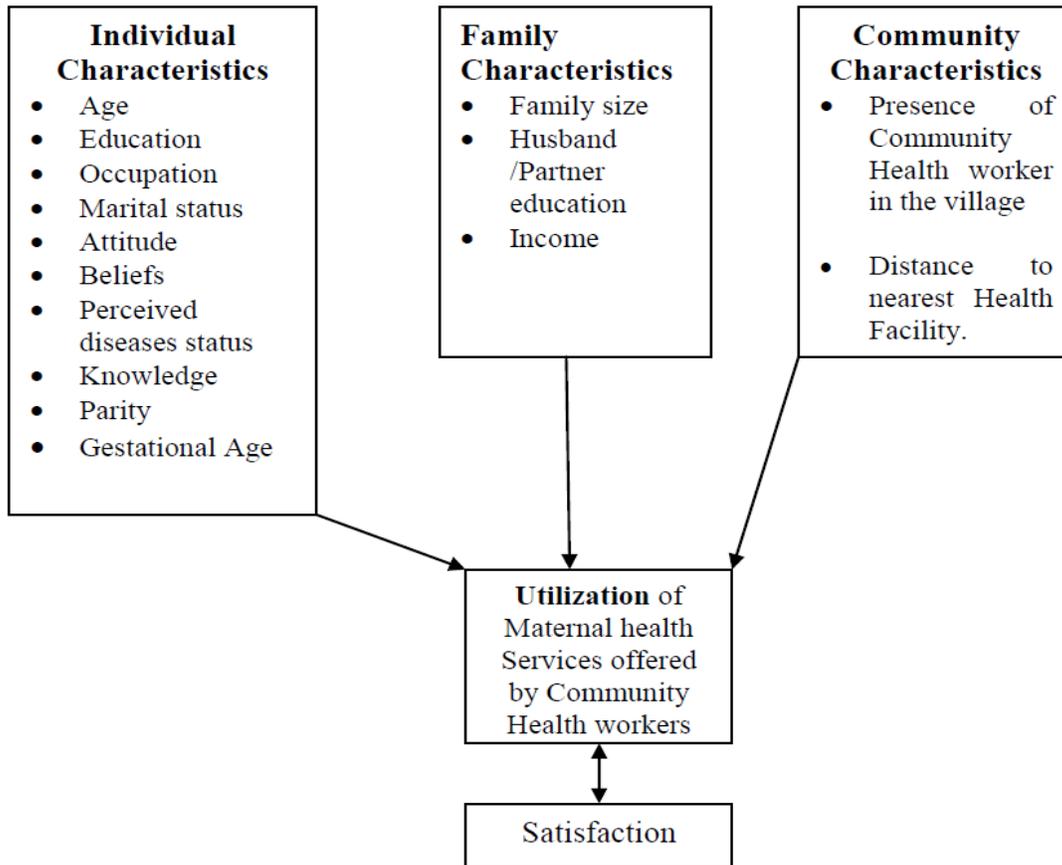


Figure 1: Conceptual framework

The conceptual frame work above puts the literature in a diagrammatical presentation where utilization of maternal health services provided by CHWs is conceptualized to be influenced by the factors grouped in community, Family and Individual characteristics. This conceptual framework has been adapted from Andersen and Newman framework of health service utilization. Andersen and Newman classified these factors into predisposing, enabling and need factors.

CHAPTER THREE

3.0. METHODOLOGY

3.1 Study design

This was analytical cross sectional study conducted between Februarys to May 2013 in Mkuranga District council in Coast region of Tanzania.

3.2 Study area

Mkuranga District council is among the six districts of Coast region which is located along the coast of Indian Ocean. Mkuranga district covers an area of about 2,432 Square Kilometers. The district population is estimated at 222,921 with 114,897 females and 108,024 males. Females of child bearing age population are estimated at 52,798. Administratively the district has four Divisions, eighteen Wards, and 121 Villages. Agricultural sector is a major contributor on the district economy.

There are 38 health facilities of which 35 are dispensaries, two health centers and one Hospital. Twenty five dispensaries are government owned while 5 are owned by faith based organizations and 5 are private owned. The two health centers and 1 Hospital both are owned by the government.

Number of live births per year is estimated at 5376 (District statistics 2011) assuming 15 percent of pregnancies ends up with still births or miscarriages then estimated number of women in a year who become pregnancy is 6182. The Antenatal clinic is being conducted from weekdays but in some dispensaries antenatal clinic is conducted for two to three days a week.

There are 93 Community health workers in Mkuranga district covering all the eighteen wards with 1 to 8 community health workers per ward; some villages has at least one or more and some have none.

Mkuranga district council has a number of health partners with which the district works in collaboration with in improving maternal and child health through a community by strengthening community based approaches including the CHW model. The partners include PASADA, Pathfinder international and Red Cross Tanzania.

3.3 Study Population

All pregnant women who attended antenatal clinic in the selected health facilities during the study period formed the study population.

3.4 Inclusion Criteria

Selected pregnant women attending antenatal clinic on the day of data collection aged 18-49 years.

3.5 Exclusion Criteria

Pregnant mothers with the following characteristics were excluded;

- Not meeting the inclusion criteria
- Presented with sickness/illness on the day of data collection

3.6 Sample size

Sample size was calculated by the single proportion formula

$$n = \frac{z^2 Pq}{d^2} f^*(n*10\%)$$

Where

n, desired minimum sample size

d, Absolute precision (acceptable error) (5%)

Z, Z value for 95% confidence interval (1.96)

P, Proportion of subjects utilizing CHW (50%) (No known study was found)

q, proportion of not utilizing CHW services(1-P) which equals to 50%

f, Design effect (1.5)

Allowing non response rate of 10%

The estimated sample size becomes $\cong 640$

Therefore, the sample size needed for this study was 640 pregnant women.

3.7 Sampling procedure

Cluster sampling method was employed. A list of all health facilities present in the District was obtained from the District Medical Officer. One Hospital and two Health Centres in the district were included in the study purposively. Eleven dispensaries were then randomly selected from the 35 dispensaries in the district making a total of 14 selected health facilities in the district. This means 37% of all the health facilities in the district were included in the study. According to Kielman et al 1995 and UNICEF 1997, a random sample of 25 - 30% of the health facilities in a district of an average size is usually adequate and feasible to represent a district health service situation. Every second pregnant women attending antenatal clinic at the selected health facility was recruited in the study provided she met the inclusion criteria during 12 weeks period of data collection.

Daily ANC attendance rate ranged from 5 to 8 at a dispensary level; 11 to 16 at health centre level and 15 to 17 at Hospital level per week. On average 7, 13 and 16 pregnant women attended ANC clinic per week at dispensary, Health centre and hospital level respectively. Four hundred and fourteen participants were systematically recruited from dispensary level, 140 participants were recruited from health centre level and 86 from hospital level.

3.8 Data collection and Instruments

Data was collected by using a semi structured questionnaire comprising of closed and open ended questions. The questionnaire was in Swahili language. The client antenatal card (RCH card no 4) was also used to collect information on Gestational age, HIV Serostatus and parity. Participants were asked to give information on Socio- demographic characteristics, knowledge on the presence of a Community health worker in their communities, and services that they have received from CHWs if any. Questions regarding recent experience of coming in contact with a CHW were also asked to stimulate the discussion and enhancing recall.

3.9 Recruitment of research assistants

In each Health facility two to three nurses working at antenatal clinics were trained for a day prior to commencement of data collection process. Follow up support was provided by principle investigator daily via telephone conversation and physically by paying a visit once a week to ensure the questionnaires are duly filled.

3.10 Pilot of study

Pilot study was conducted to assess the developed research tools were tested at Vikindu health centre a week prior to data collection. The pilot test results were used to approximate resources needed in terms of time and expertise as well as standardizing the tools hence improving efficiency in the process of data collection.

3.11 Data analysis and Management

Data collected in the field was fine edited by the principal investigator to ensure its quality during data collection process. The questionnaires were coded and entered in a Statistical package for social Sciences (SPSS version 20) and analyzed. STATA version 12 was also used in analysis of data. Cleaning of data was achieved by running frequencies and counter checking for outliers and verifying the data from the questionnaires.

The DHS wealth index was used to estimate Social economic status (SES) of the households. Using principal components analysis (PCA); household assets (e.g. ownership of Radio, telephone and Bicycle) House hold building materials and dwelling characteristics such as source of drinking water and type of materials used in dwelling construction. Information on dwelling characteristics and building materials was dichotomized into improved and unimproved and used to estimate household SES.

In determining the proportion of pregnant mothers utilizing maternal health services offered by CHWs descriptive statistics was used. In assessing evidence of association chi square test was employed. In ascertaining for association and direction of the association or type of relationship between the outcome variable and explanatory variables Logistic regression was used.

3.12 Study limitations

There was a potential of participants failing to respond correctly on questions enquiring them about their past experiences which they might have forgotten. However participants were asked of the recent experience with CHWs to enhance memory. This is expected to minimize recall bias.

Gender bias

Sampling error, as there was a possibility of elements in a cluster to share similar characteristics; in controlling for this the sample size calculation considered the designing effect due to the sampling nature (cluster sampling) of the study.

Non response bias; in minimizing this 10% increase of the sample size was done to control for this. Additionally research assistants were given comprehensive training. Making sure participants receive appropriate information including relevancy of the study and why are they targeted. Other Health services providers at RCH clinic were maximally involved.

3.13 Ethical Considerations

Ethical clearance was sought from MUHAS (IRB). Permission to conduct the study was obtained from local government authorities, including the DED and the DMOs office. Permission was also sought from the facility in-charge at each facility that was included in the study to provide them with information about the activities that will be going on at their facilities. This also aimed at ensuring cooperation is secured from the staff at RCH clinic. Participants were asked for informed consent before their participation in the study. They were explained that participation in the study was voluntary and they will not lose any rights that they otherwise entitled by not participating, that there was no financial gain by participation in the study and but study will inform the policy and decision makers in efforts to improve maternal health. They were assured that number instead of names will be used throughout the study process from data collection to analysis so as to maintain anonymity.

CHAPTER FOUR

4.0 RESULTS

4.1 Participants flow chart

A total of 640 pregnant women attending antenatal clinic were enrolled in the study and the response rate was 95.6% (612/640). See a flow chart below.

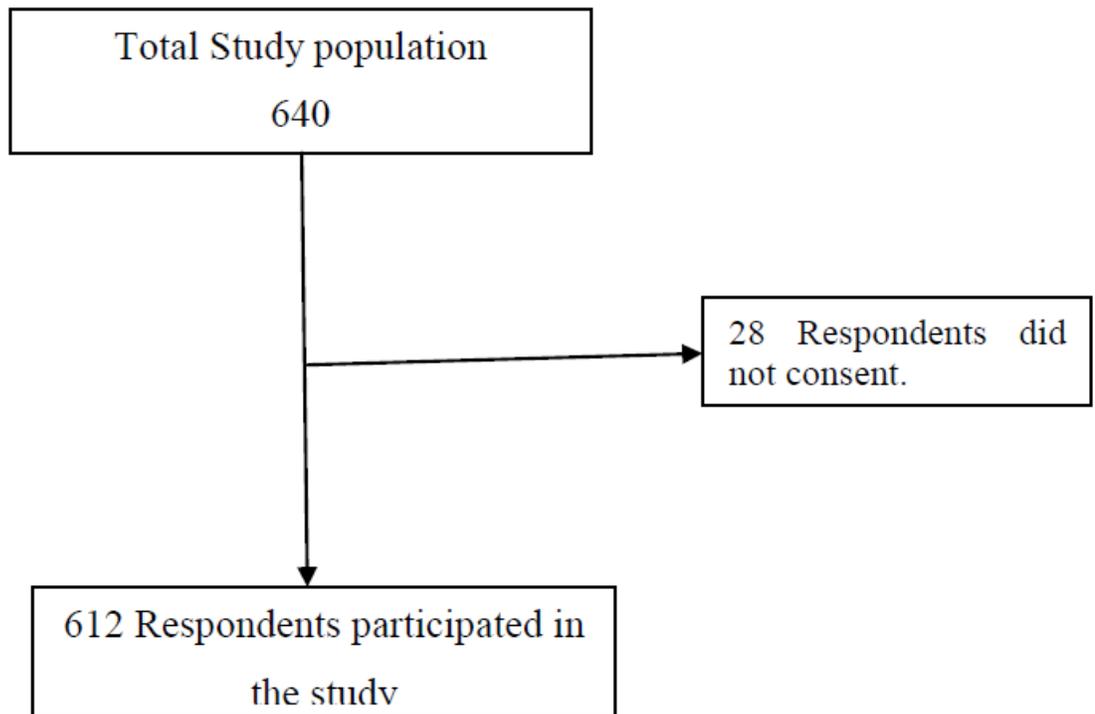


Figure 2: Participant flow chart.

4.2 Socio- demographic characteristics of the study participants.

A total of 612 pregnant women attending antenatal clinic in Mkuranga district participated in the study. Respondent's age ranged from 18 to 48 years, the median age was 28 and half of the population was between the age of 23 and 32; [IQR, (32-23)]. More than three quarters (85.9%) of respondents were married or cohabiting. More than one third (38.6%) respondents had no formal education while two third attained primary education or higher. Ninety eight (16%) respondent partners had no formal education while 514 (84%) attained primary education or higher. Half of the respondent's household's size was 4 to 7 members with a mean house hold size of 5 ± 2 family members. Majority of the participants were peasants (47.9%) and housewives (34.8%) and few were Small traders (15%) or civil servants (2.3%)

Participants had a mean gestational age of 25 ± 8 weeks and half of them had a gestational age between 19 and 30 weeks. Of the 564 respondents with documented HIV status results 48 (8.5%) were HIV positive. See **table 1** below.

Table 1: Summary of socio demographics characteristics of participants

Variable(s)	Frequency (n=612)	Percentage (%)
Marital status		
Married/cohabiting	526	85.9
¹ Not in union.	86	14.1
Respondent Education		
No formal education	236	38.6
Primary education	325	53.1
Secondary/ Tertiary education	51	8.3
Partners Education		
No formal education	98	16
Primary education	427	69.8
Secondary education/Tertiary	87	14.2
Respondent Occupation		
Civil Servant	14	2.3
Small Trader	92	15
Housewife	213	34.8
Peasant	293	47.9
Partners Occupation		
Civil Servant	25	4.1
Small trader	181	29.6
Peasant	357	58.3
Others*	49	8
Gestational Age		
0-12	30	4.9
13-27	365	59.6
28-42	217	35.5
HIV Status		
HIV Positive	48	7.8
HIV Negative	516	92.2
Not indicated	48	7.8

*Others included Masonry, Carpentry and technicians. ¹ Not in Union includes those Widowed, Divorced, separated or single

4.3 Utilization of maternal health services provided by CHWs

More than a quarter (27.5%) of pregnant women who participated in the study reported to have utilized services provided by CHW's. Among the pregnant women who utilized the CHW's service during their pregnancy two thirds (63.6%) were visited at home by CHW.

Of the Pregnant women who reported to have utilized CHW services in their current pregnancy were counseled on family planning, importance of health facility delivery and on importance of early antenatal care booking see table 2.

Table 2: Proportion of pregnant women utilizing services provided by CHW

Service provided by CHW	Utilization of CHW Services, n (%)	
	Yes	No
Family Planning Counseling	133(21.7)	479(78.3)
Importance of Delivering at Health Facility	123(20.1)	489(79.9)
Early ANC booking	114(18.6)	498(81.4)

4.4 Factors associated with utilization of maternal health services provided by CHW

Pregnant women characteristics were analyzed for possible association with utilization of maternal health services provided by community health worker.(see **Table 3**) Respondent marital status, occupation, gestational age, HIV sero-status and partner's education and Occupation had statistically significant association with utilization of maternal health services provided by CHW. Some of the characteristics which had association with utilization included respondent occupation, gestational age and partner's education.

Relationship of pregnant women characteristics with utilization of Maternal Health services provided by CHW was also assessed by Logistic regression as shown in **table 4**.

Pregnant women who were not married or cohabiting were less likely to utilize services provided by CHW (POR=0.42, CI 0.23-0.79) as compared to those who were married or cohabiting , after adjusting for other factors pregnant women characteristics shown in table 6; the association remained(POR=0.39, CI 0.2-0.74) .

Association between wealth status and utilization of maternal health services provided by CHW was assessed. About one third of pregnant women from households of highest quintile of social economic status utilized maternal health services provided by CHW. See **Table 3**.

SES alone when analyzed independently revealed no association with utilization of maternal health services provided by CHWs; upon adjusting for other factors those in third quintile were less likely to utilize CHW services as compared to those in the first quintile(POR= 0.5; 95% CI 0.2-0.9).When wealth status/SES was assessed for relationship comparing other quintile to the lowest quintile there was no association with utilization of maternal health services provided by community health workers.

Table 3: Association between pregnant women characteristics and utilization of maternal health services provided by CHWs

Variable(s)	Utilized CHW Services n (%)		P Value
	Yes	No	
Marital status			
Married/cohabiting	155 (29.5)	371(70.5)	0.006
¹ Not in union	13 (15.1)	73 (84.9)	
Partners Education			0.005
No formal education	34 (34.7)	64 (65.3)	
Primary education	101 (23.7)	326 (76.3)	
Secondary/Tertiary education	33 (37.9)	54 (62.1)	
Respondent Occupation			0.001
Civil Servant	9 (64.3)	5 (35.7)	
Small Trader	31 (33.7)	61 (66.3)	
Housewife	65 (30.5)	148 (69.5)	
Peasant	63 (21.5)	230 (78.5)	
Partners Occupation			0.028
Civil Servant	12 (48)	13 (52)	
Small trader	56 (30.9)	125 (69.1)	
Peasant	91 (25.5)	266 (74.5)	
Others ¹	9 (18.4)	40 (81.6)	
Gestational Age			0.000
0-12	14(46.7)	16(53.3)	
13-27	113(31)	252(69)	
28-42	41(18.9)	176(81.1)	
HIV Status			
HIV Positive	18(37.5)	30(62.5)	0.126
HIV Negative	140(27.1)	376(72.9)	
Wealth Status			0.034
Lowest	38(29.9)	89(70.1)	
Second	26(21.7)	94(78.3)	
Third	24(19.7)	98(80.3)	
Fourth	43(35.2)	79(64.8)	
Highest	37(30.6)	84(69.4)	

¹ This included Masonry, Carpentry and technicians. *Fisher exact test P value, ¹ Not in Union includes those Widowed, Divorced, separated or single

Table 4: Pregnant women characteristics and utilization of maternal health services provided by Community health workers

Variable(s)	Crude POR (95% CI)	Adjusted POR (95% CI)
Marital status		
Married/cohabiting	1	1
¹ Not in union	0.42(0.23-0.79)	0.39(0.2-0.74)
Respondent Education		
No formal education	1	1
Primary education	1(0.7-1.5)	0.9(0.18-5)
Secondary/Tertiary education	1.5(0.8-2.8)	0.78(0.3-1.9)
Partners Education		
No formal education	1	1
Primary education	0.6(0.4-0.9)	0.5(0.3-0.9)
Secondary/Tertiary education	1.2(0.6-2.1)	0.9(0.4-1.9)
Respondent Occupation		
Housewife	1	1
Small Trader	1.2(0.7-2)	1(0.6-2)
Peasants	4(1.3-13)	2.5(0.6-11)
Civil Servant	0.6(0.4-0.9)	0.7(0.5-1)
Partners Occupation		
Peasant	1	1
Small trade	1.3(0.9-2)	1.1(0.7-2)
Civil Servant	2.7(1-6)	1.2(0.4-4)
Others*	0.7(0.3-1.4)	0.6(0.3-1.5)
Gestational Age		
0-12	1	1
13-27	0.5(0.24-1.1)	0.8(0.4-1.8)
28-42	0.3(0.12-0.6)	0.4(0.2-1)
HIV Status		
HIV Positive	1	1
HIV Negative	1.6(0.9-3)	0.7(0.3-1.2)
Wealth Status/SES		
Lowest	1	1
Second	0.7(0.4-1.2)	0.7(0.4-1.3)
Third	0.6(0.3-1.03)	0.5(0.2-0.9)
Fourth	1.3(0.7-2.2)	1.2(0.7-2.2)
Highest	1.03(0.6-1.8)	0.9(0.5-1.6)

*This included Masonry, Carpentry and technicians. POR, Prevalence Odds Ratio. 95% CI, Ninety five percent confidence interval.¹ Not in Union includes those Widowed, Divorced, separated or single

4.5 Pregnant women awareness of CHW, types and accessibility of health services.

4.5.1 Awareness and types of Services provided by CHW

About two thirds (67.2%) of the pregnant women participated in the study reported to have heard of a community health worker. Study respondents knew Community health worker by different names “Waelimisha rika” (peer educators), HUWANYU (CHBC), WAJA (Wahudumu wa afya wa jamii and some they just knew the Community health worker by their given names.

Generally fewer participants described types of services provided by CHWs in their locality. Just above one third mentioned Malaria related services (37.7%) and family planning counseling (36.3 %) and only 63(10.3 %) mentioned counseling on danger signs in pregnancy, as shown in **table 5** below.

Table 5: Types of services provided by CHWs.

Variable	Frequency (n)	Percentage (%)
Malaria related services		
Yes	231	37.7
No	381	62.3
Family planning counseling		
Yes	222	36.3
No	391	63.7
HIV Counseling		
Yes	189	30.9
No	423	69.1
Counseling on danger Signs in pregnancy		
Yes	63	10.3
No	549	89.7
Others*		
Yes	56	9.2
No	556	90.8

*Others included Child health, Environmental and sanitation and Filariasis related services.

4.5.2 Accessibility of health services

Two third (65.5%) of pregnant women were residing more than a kilometer from a health facility. There was no statistically significant difference in utilization of services provided by CHW between those residing less than a kilometer to those residing more than a kilometer from health facility. The mean travel time to a nearby health facility was 48 ± 41 minutes and half of the pregnant women travel for 15 to 60minutes to a nearby health facility (IQR, 15-60). Majority (53.8%) of these pregnant women walked to a nearby health facility, more than one third (37.7%) rented motorcycle or car or used public transport and only 52 (8.5%) used their own bicycles. Two hundred and eight nine (47.2%) study participants reported that travelling to health facility involves cost. Among the pregnant women who reported that traveling to health facility involves cost two third (213) rated the cost as cheap or affordable and about a quarter (76) rated it as expensive.

Majority (90.4%) of pregnant women did not know the residence of CHW and only 9.6% knew where it was; among them 59% resided less than a kilometer from a CHW residence and 41% more than a kilometer. The mean travel time to the nearest CHW was 34 ± 33 minutes and half of the respondents would use 30 to 60 minutes to travel to a nearby CHW residence, (IQR, 60-30).

On responding to whether there are costs involved in accessing community health worker's services only 46 (7.5%) reported that there are costs involved and of them three quarters (75%) said the cost was cheap. On responding to preference on sex of CHW two thirds (67.8%) chose a female CHW worker to be preferable and the remaining preferred male or both sex.

4.6 Utilization of services provided by CHWs among HIV positive and HIV negative pregnant women.

Proportions of maternal health services utilization by HIV serostatus as provided by CHW to pregnant women are shown in **table 6** below. In all services provided by Community health workers; proportion of HIV positive pregnant women who utilize the services was higher compared to HIV negative pregnant mother and the difference was statistically significant.

On logistic regression analysis as shown in **table 4** above there was no statistically significant association between HIV serostatus and utilization of maternal health services provided by CHWs to pregnant women.

Table 6: Utilization of CHW services by HIV status among pregnant women

HIV Status	Utilization of CHW Service		P value
	Yes	No	
Family Planning Counseling			0.01
HIV Positive	17(35.4)	31(64.6)	
HIV Negative	101(6.9)	415(93.1)	
Early ANC booking			0.01
HIV Positive	18(37.5)	30(62.5)	
HIV Negative	110(21.3)	406(78.7)	
Importance of Delivering at Health Facility			0.029
HIV Positive	15(31.2)	33(68.8)	
HIV Negative	94(18.2)	422(81.8)	
Importance of HIV serostatus disclosure			0.00
HIV Positive	11(22.9)	37(77.1)	
HIV Negative	9(1.7)	507(98.3)	
Recommended Breastfeeding practices in HIV			0.00
HIV Positive	12(25)	36(75)	
HIV Negative	10(1.9)	506(98.1)	
Importance of ART Use			0.00
HIV Positive	14(29.2)	34(70.8)	
HIV Negative	23(4.5)	493(95.5)	

CHAPTER FIVE

5. DISCUSSION

Maternal mortality has been an area of focus globally for decades. A number of innovative interventions for preventing maternal mortality have been tested for effectiveness ranging from clinical based to community based ones.

Global initiatives have designed a number of interventions for the aim of improving maternal health. Tanzania being a part of the global community is also pursuing some of these interventions in the same intent. These efforts are still undertaken in the midst of severe global shortage of human resource for health which is an essential catalyst in realizing this international goal. Human resource for health crisis is severe in developing countries including Tanzania; a part of the world with an enormous burden of diseases. This situation has compelled the global community to embark on a task shifting model which involves a process of delegation whereby tasks are moved, where appropriate, to less specialized health workers (WHO). Task shifting model includes the Community Health workers approach which is largely implemented as a lever for health promotion and increasing access to health services.

This study assessed utilization of maternal health services provided by community health workers and factors influencing it, in Mkuranga District of Tanzania.

Less than one third (27.5%) of pregnant women who participated in the study utilized maternal health services provided by CHW in their current pregnancy and of these 63.6% reported to have been visited by CHWs. In studies conducted in rural setting in Kenya and Uganda on utilization of CHW in community case management of fever in children; Proportion of CHW Utilization was 57%(Uganda) and 35% (Kenya) higher than the one reported in this study^(38, 41) This might have been due to different designs of interventions where in the studies Kenya and Uganda involved diagnostic and treatment services.

Comparing the utilization to more than two third (67.2%) of pregnant women who reported to be aware of CHWs services provided in their locality rises questions on acceptability.

Among the factors which showed to influence utilization of maternal health service provided by community health workers included marital status whereby married or cohabiting pregnant women were three times more likely to utilize maternal health services provided by CHW as compared to single women even after adjustment for other factors. This finding is in line with a study conducted in Kenya on utilization of health services where married women were more likely to seek ANC as compared single ones.⁽³¹⁾ This finding also reveal robustness of marital status as a predictor in utilization of maternal health services provided by CHWs and highlight on possibility that partner involvement might be beneficial in utilization of CHW services.

Maternal education and Husband education are known factors that influence utilization of maternal health services.⁽³³⁾ Pregnant women with a partner's without formal education were more likely to utilize the services as compared to those with primary education the relationship remained after adjusting for other factors. This is contrary to other studies of health care utilization where increase in partner education was associated with increased utilization of health services by pregnant women.^(28,31) This study did not reveal any relationship in CHW services utilization with maternal education.

Partners and pregnant women occupation have shown to be important predictors of health service utilization in a number of studies.^(41,42) Employed pregnant women and those married to employed partners have shown an increased likelihood of utilizing health services as compared to those who are not employed.⁽²⁸⁾ This study demonstrated that pregnant women with a Civil servant partner were more likely to utilize maternal health services provided by community health workers as compared to those with a Peasant partner. Pregnant women who were peasants were also more likely to utilize maternal health services provided by community health workers as compared to those who were housewives. In contrary to other studies civil servants pregnant women were less likely to utilize maternal health services

provided by community health worker as compared to housewives. This might be explained by the fact that housewives spent most of their time at home hence increased likelihood of being found at home when a community health worker pay a visit.

Social economic status (SES) is documented to be one of the important factors of health services utilization whereby utilization is less likely to those with low SES and vice versa.^(31,35) Owning property, a car, or having a flush toilet and higher standards of living have also shown a positive association with health service utilization.⁽³¹⁾ This study showed increase in proportion of utilization of maternal health services with increase in wealth status; though the direction of association was not demonstrated in logistic regression analysis. Studies should be conducted to explore this relationship as CHW approach is best designed to targets the underserved people in rural settings presumably those with low SES. A study conducted in Bangladesh revealed that the CHW model to be pro-poor and relatively wealth households had a proclivity of utilizing modern health services compare to relatively poor households.⁽⁴¹⁾

Accessibility parameters including affordability (in all the costs i.e. traveling), distance and travel time from a nearby CHW or Health facility showed no significant association with utilization of CHW maternal health services provided by CHW. While a number of studies demonstrated these factor to have influence of health service utilization.^(33,38) This might also be explained by difference in designs of interventions

Community health workers in this study were reported to perform a range of tasks ranging from Malaria related services, family planning counseling, counseling on danger signs in pregnancy, HIV counseling , child care including immunizations related services, and those related to environmental sanitation and hygiene and filariasis related. CHW were trained to provide a range of these services. Only one fifth of the pregnant mothers reported to have been counseled on family planning, importance of delivering in health facility and importance of early antenatal care booking. In the Pwani region 73% of pregnant women deliver in health

facility while 41.6% uses any method of family planning this was shown in Tanzania demographic health survey of 2010.

Eight percent (48) of pregnant women who had documented HIV serostatus results in their antenatal card were found to be HIV positive; this finding gave an estimate which is a little higher than the country estimate which stands at 6.9% shown by national aids control program statistics estimates in 2008 and other study conducted in northern Tanzania in 2006⁽⁴³⁾. HIV positive pregnant women utilization of maternal health services proportion was appreciably higher (37.5%) as compared to HIV negative pregnant women (27.1%). When comparing for specific type of service offered by community health worker; utilization was estimated at 22.9% (Counseling on HIV status disclosure) to 37.5% (Counseling on early antenatal care booking) for HIV positive pregnant women. Among HIV negative pregnant women utilization of maternal health services was estimated at 1.7 % (Counseling on HIV status disclosure) to 21.3% (Counseling on early antenatal care booking); this difference was shown to have a statistically significant association. Studies on utilization of health services also have shown to be influenced by perceived illness by respondents.^(23,44,45) Pregnant women HIV status demonstrated to have no relationship with utilization of maternal health services provided by community health worker logistic regression analysis. This finding might be due to possible confounding factors needed to be explored further such as HIV and AIDS stigma which have been demonstrated to pose barrier to access of health services.

Ninety three CHWs for a district with 121 villages and population of total population of 222,921 seem to be very inadequate. In Tanzania local government establishment stipulates that a village should have not less than 250 households. On average if one Community health worker is serving one village it means 28 villages have no CHW, or viewing aspect of ratio per household it means that one CHW serves 325 households. Considering the rural settings and the geographical distance they will be expected to cover this number is not adequate at all, in terms of workload.

5.1 Limitations and strengths of the study

Study limitations in this study included, Bias in recall whereby in minimizing it respondents were asked on their experience of utilizing CHW service in the current pregnancy. Level of illiteracy was also an issue as number respondents had difficulty in answering relatively simple questions. For example some failed to complete simple arithmetics such as giving number of household members. HIV stigma might have also deterred some respondent into giving correct information of their HIV status, there is anecdotal evidence that some pregnant women when tested positive and results documented in their antenatal cards buys a new antenatal card and documents it differently to conceal their HIV status. This was minimized by recruiting nurses working at antenatal clinics as research assistants, because in rural settings the service providers tend to know most of their clients.

The study is highly representative of the Mkuranga community in spite being facility based because in Pwani region is estimated that 99.5% of all pregnant women attend to antenatal clinic at least once during their pregnancy. Thirty seven health facilities were involved in the study to robustness in representativeness. These results can still be representative of huge part of Tanzania as big proportion of the Tanzanian population resides in rural areas which share many common characteristics with the study area.

CHAPTER SIX

6.0 CONCLUSION

Generally Community health worker interventions have been studied and demonstrated appreciable effectiveness in improving maternal health globally.^(14,46,47) This study was conducted in the settings which are generally representative of the Tanzania rural settings. Majority of CHW providing services in Mkuranga included the common cadre found in all districts in Tanzania known as Village health workers (VHW). Village health worker cadre has been in practice in Tanzania for years now and they provide a range of services. In Mkuranga, Village health workers have been receiving a number of trainings in maternal and child health care, HIV and AIDS including management of chronic diseases. Therefore these VHWs perform a number of tasks. The practice of Multitasking CHWs has also shown to affect effectiveness of interventions⁽⁴⁸⁾ and this might be contributing to the low proportion of utilization in this study.

There is still paucity of evidence regarding utilization services provided by CHWs. This study attempted to bring to light pregnant women utilization of CHW services and possible influencing factors by greatly relying on literatures of modern health service utilization in making comparison to utilization of CHW services. CHW services utilization dynamics have shown to be more or less the same as to utilization of modern health care services. A number of factors studied demonstrated resembling relationship. Though some parameters (e.g. Partner education and pregnant women occupation specifically those worked as civil servant) demonstrated had different relationship with utilization of CHW services, this phenomenon need to be studied further.

However, CHW services utilization of more than a quarter is encouraging but it underscores the need to strengthen the program by addressing issues that might be affecting.

6.1 RECOMENDATIONS

The fact that CHWs in this study are playing a crucial role in reaching significant number of pregnant women, having a guideline for a community health worker cadre is of paramount importance. The guideline should explicitly stipulate range of tasks they should play, how and who should provide supervision so as to increase the CHW effectiveness.

Deployment of adequate number of CHWs and providing them with supportive environment so that more pregnant women can be reached and ultimately improving maternal health should be considered. This shall include provision of means of transport because households in rural areas are sparsely located and CHW have to walk long distance to reach more pregnant women. This was also suggested by number of pregnant women participated in the study who also appreciated the work of CHW. A study to assess factor that interfere with CHW effectiveness, community acceptability of CHWs and a qualitative study to explore CHW competency and effectiveness in executing the tasks assigned to them is recommended.

This study gives a picture of the situation on ground pertaining to CHWs programs in Tanzania. More advocacy of the program is recommended so as to increase community awareness and acceptability. Likewise, efforts in improving health care services in health facilities should be in tandem with efforts in strengthening the CHW program which is geared in increasing Health care services demand in the district.

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APPENDICES

Appendix I: Consent form (English version)

RESEARCHING UTILIZATION OF MATERNAL HEALTH SERVICES PROVIDED BY COMMUNITY HEALTH WORKERS AMONG PREGNANT WOMEN, IN MKURANGA DISTRICT, TANZANIA

Dear Participant my name is, from the Muhimbili University of Health and Allied Sciences carrying out a research on ‘‘Utilization of Maternal Health Services Provided by Community Health Workers among Pregnant Women, In Mkuranga District, Tanzania’’.

I would like to interview you on services offered by Community health workers in your area as you might have already heard or received already. This interview is for a research study that is being done by Muhimbili University of Health and Allied Sciences (MUHAS). The interview will include questions on you recent contact (if any) with CHWs, socio demographic questions and services received. On average the interview will take most people about 20 minutes to answer all the questions.

This research is expected to gather information on how pregnant mothers in Mkuranga district utilize the PMTCT related services offered by community health workers. The finding of this research will be used to put forth recommendation on to improve these kinds of services in efforts to eliminate transmission of HIV from mother to Child.

Your participation is voluntary, and there is no penalty for refusing to take part. You may refuse to answer any question in the interview or stop the interview at any time.

All the information gathered will be strictly confidential and used for research purposes only. In case of any concerns about the study, feel free to contact Prof. Mainen J Moshi the chairperson of the Research and Publication Committee at Muhimbili University of Health and Allied Sciences (Tel :2150302); P.O. Box 65001, Dar-es-salaam or Principal Investigator Dr. Isihaka Mwandalima, Mob no 0713 68 79 54

I therefore ask for your participation in this study by responding to my questions, thank you.

I agree/ don't agree

Name Signature.....

Appendix II: Consent form (Swahili version)**UTAFITI KUHUSU HUDUMA ZITOLEWAZO NA WAHUDUMU WA AFYA WA JAMII KWA AKINA MAMA WAJAWAZITO KATIKA WILAYA YA MKURANGA TANZANIA.**

Habari yako ndugu mimi naitwa, kutoka chuo kikuu cha sayansi shirikishi na tiba cha Muhimbili Nafanya utafiti kuhusu “huduma zitolewazo na wahudumu wa afya wa jamii kwa akina mama wajawazito katika wilaya ya Mkuranga Tanzania”.

Nitapenda kukudodosa kuhusu huduma zinazotolewa na hawa wahudumu wa afya ya jamaa ambao pia wanatambulika kama wahudumu wa afya nyumbani. Udodosaji huu utachukua kama dakika 20 kumaliza maswali yote kwa wastani.

Utafiti huu unategemewa kukusanya taarifa kutoka kwa akina mama wajawazito katika wilaya ya Mkuranga na kuonesha ni jinsi gani wanatumia hizi huduma.

Matokeo ya utafiti huu yatatoa mapendekezo juu ya kuboresha huduma hizi katika juhudi za kutokomeza maambukizi toka kwa mama kwenda kwa mtoto.

Ushiriki wako ni wa hiari na hakutakuwa hakutakuwa na adhabu kwa kutoridhia kushiriki.

Maelezo yote nitakayo yapata toka kwako, itakuwa ni siri na yatatumika kwa ajili ya utafiti huu tu. Na kama una mashaka yoyote kuhusu utafiti huu uwe huru kuwasiliana na Prof. Mainen J Moshi mwenyekiti wa kamati ya utafiti na machapisho Chuo Kikuu cha Tiba na Sayansi Shirikishi cha Muhimbili simu, 2150302) S.L.B 65001 DSM au Mhusika mkuu wa utafiti huu Dr. Isihaka Mwandalima, Mob no 0713 68 79 54

Naomba ushiriki wako kwenye utafiti huu kwa kujibu maswali nitakayo kuuliza.

Asante sana.

Nimekubali/Sikotayari kushiriki

Jina..... Sahihi.....

Appendix III: Questionnaire (English version)**QUESTIONNAIRE FOR INTERVIEWING PREGNANT WOMEN ON UTILIZATION OF MATERNAL HEALTH SERVICES PROVIDED BY COMMUNITY HEALTH WORKERS, IN MKURANGA DISTRICT, TANZANIA**

Division.....Ward.....Village.....

...

Health facility name.....

1. Age(years)

2. Religion

1. Christian

3. Pagan

2. Muslim

4. Other.....

3. What is your duration of a stay at the current residency (village).....years

4. What is your marital status

1. Married

4. Cohabiting

2. Widowed

5. Separated

3. Single

6. Divorced

5. In what type of marriage are you in?

1. Monogamous

2. Polygamous

6. Gestational age (check in the ANC card).....

7. Was this pregnancy intended

1. Yes

2. No

8. Parity (check in the ANC card).....

9. PMTCT status (check in the ANC card and write the

code).....(if positive inquire how much time has elapsed since she was diagnosed for the first timemonths/Years)

10. What is your occupation?

1. Civil servant
2. Small trader
3. Peasant
4. Other (Mention).....

11. What is your husband/partners occupation?

1. Civil servant
2. Small trader
3. Peasant
4. Other (Mention).....

12. What is the highest level education you have attained?

- | | |
|-----------------------|---------------|
| 1. None | 4. Secondary |
| 2. Informal education | 5. College |
| 3. Primary | 6. University |

13. What is the highest level of education your husband/partner attained?

- | | |
|-----------------------|---------------|
| 1. None | 4. Secondary |
| 2. Informal education | 5. College |
| 3. Primary | 6. University |

14. How many people are there in your family/household

.....

15. Have you ever heard of Community health worker/community home based care in your village?

1. Yes
2. No (explain to her then continue)

16. What types of services do these community health workers provide in your area/village?

1. Providing treatment
2. Provide health education
3. Counseling for HIV
4. Family planning Counseling

5. Malaria related services
 6. Counseling on danger signs in pregnancy
 7. Mention others.....
- 17.** During this pregnancy, have you ever used any of these services offered by Community health workers?
1. Yes
 2. No
- 18.** Were you satisfied with the services that were offered to you by the community Health worker?(If no Why)
1. Yes
 2. No (Why).....
- 19.** What was the reason for you to use these services?
1. I was sick
 2. I was visited by CHW at home
 3. Others (Mention).....
- 20.** Have you ever received family planning counseling/education
1. Yes (from whom)
 2. No
- 21.** Who provided you family planning counseling/education
1. Health Service Provider
 2. Close relative(friend)
 3. Community health workers/Community home based care
 4. Others.....
- 22.** Have you ever been counseled/educated on importance of delivering at health facility
1. Yes (Who)
 2. No
- 23.** Who counseled/educated you on importance of delivering at health facility?
1. Health Service Provider
 2. Close relative(friend)

- 3. Community health workers/Community home based care
 - 4. Others.....
- 24.** Have you ever been counseled/educated on the importance of early antenatal booking?
- 1. Yes(who)
 - 2. No
- 25.** Who counseled/educated you on the importance of early antenatal booking?
- 1. Health Service Provider
 - 2. Close relative(friend)
 - 3. Community health workers/Community home based care
 - 4. Others.....
- 26.** Have you ever been counseled/educated on the importance of using antiretroviral therapy to HIV positive pregnant mothers?
- 1. Yes (Who)
 - 2. No
- 27.** Who counseled/educated you on the importance of using antiretroviral therapy to HIV positive pregnant mothers?
- 1. Health Service Provider
 - 2. Close relative(friend)
 - 3. Community health workers/Community home based care
 - 4. Others.....
- 28.** What is the importance of using antiretroviral therapy to HIV positive pregnant women?
- 1. Can prevent HIV transmission from mother to Child.
 - 2. Improves the pregnant women's health.
 - 3. Others (mention).....
- 29.** Have you ever been counseled/educated on the importance of HIV serostatus disclosure?
- 1. Yes(Who)
 - 2. No

30. Who counseled/educated you on the importance of HIV serostatus disclosure?

1. Health Service Provider
2. Close relative(friend)
3. Community health workers/Community home based care
4. Others.....

31. Have you ever been counseled/educated on recommended infant feeding practices for a postpartum HIV positive mother?

1. Yes (who)
2. No

32. Who counseled/educated you on recommended infant feeding practices for a postpartum HIV positive mother?

1. Health Service Provider
2. Close relative(friend)
3. Community health workers/Community home based care
4. Others (specify).....

33. What is the recommended breastfeeding practice to an infant born to HIV positive mother?

1. Exclusive breastfeeding for six months.
2. Replacement feeding without breastfeeding the infant at all.
3. Others
mention.....

34. What is your sex preference for an ideal Community Health Worker?

1. Female
2. Male
3. Any

35. Are there any costs involved in obtaining the services from community health worker?

1. Yes (go to question 35)
2. No
3. Never used(go to 39)

36. How do you rate this cost? (How much on average)

1. Cheap
2. Affordable
3. Expensive

37. What is the average distance from your residence to Community health worker home?

1. Less than a kilometer
2. More than a Kilometer

38. What is the average time spent traveling to community health workers.....Minutes

39. Mode of transportation from home to the health facility/here

- | | |
|---------------------|-----------------------------|
| 1. Walk | 4. Private/ Motorcycle /car |
| 2. Public transport | 5. Other specify..... |
| 3. Hired vehicle | |

40. Are there costs associated with traveling to health Facility (if yes specify)

1. Yes (Cheap, Expensive)
2. No

41. What is the average distance from your residence to the nearest health Facility?

1. Less than a kilometer
2. More than a Kilometer

42. What is the average time spent traveling to nearest health facilityMinutes

43. What type of flooring is used in your house

- | | |
|-----------------|------------------|
| 1. Mud floor | 3. Ceramic Tiles |
| 2. Cement floor | 4. Others..... |

44. What is the main source for drinking water in your household?

- | | |
|-------------------|--------------------------|
| 1. Piped water | 4. Pond / River / stream |
| 2. Open well | 5. Rain water |
| 3. Protected well | |

45. What type of toilet you household uses?

1. Pit Latrine
2. Flush toilet

3. No facility/ Bush/ Field
 4. Shared with neighbor
- 46.** What is the main type of energy used for cooking in your household?
- | | |
|----------------|--------------------------|
| 1. Electricity | 4. Kerosene |
| 2. Gas | 5. Fire wood |
| 3. Charcoal | 6. Others (mention)..... |
- 47.** What is the main source of light you use in your household?
- | | |
|---------------------------|--------------------------|
| 1. Electricity | 4. Firewood |
| 2. Kerosene Lamp(lantern) | 5. Others (mention)..... |
| 3. Candle(wick lamp) | |
- 48.** Does your household own? (cycle all that applies)
- | | |
|-----------------------|------------------------------|
| 1. Electricity | 6. An iron/charcoal/electric |
| 2. Paraffin lamp | 7. Refrigerator |
| 3. A television | 8. Bicycle/motor cycle |
| 4. A radio | 9. Car (motor car/Vehicle) |
| 5. A telephone/mobile | 10. Owns Agricultural land |
- 49.** How often in the last year did you have problems in satisfying the food need of the household?
- | | |
|--------------|-----------|
| 1. Never | |
| 2. Seldom | 4. Often |
| 3. Sometimes | 5. Always |
- 50.** What is the major source of health information pertaining to issues of maternal health?
- | | |
|-----------------------------------|----------------------------|
| 1. At RCH Clinic(Health Facility) | 4. Flyers |
| 2. Radio | 5. Community health worker |
| 3. Television | 6. Friends |
| | 7. Others..... |
- 51.** When do you decide to visit Community health worker.
1. When mildly ill
 2. When severely ill
 3. Never used CHW
 4. Others.....

52. Indicate your first option of health services when you are mildly ill

1. Traditional healer
2. Pharmacy/ADDO
3. Hospital
4. Health centre
5. Dispensary
6. Others...

53. Indicate your first option of health services when you are severely ill

- | | |
|-----------------------|------------------|
| 1. Traditional healer | 4. Health centre |
| 2. Pharmacy/ADDO | 5. Dispensary |
| 3. Hospital | 6. Others..... |

54. In your opinion what is your suggestion regarding the current CHW programs at your area.

.....
.....

Thank you for your Participation

Appendix IV: Questionnaire (Swahili version)

**DODOSO KWA AJILI YA KUDODOSA AKINA MAMA WAJAWAZITO KUHUSU
UTUMIAJI WA HUDUMA ZITOLEWAZO NA WAHUDUMU WA AFYA WA JAMII
KWA AKINA MAMA WAJAWAZITO KATIKA WILAYA YA MKURANGA
TANZANIA**

Tarafa.....Kata.....Kijiji.....

Jina la kituo cha kutolea huduma.....

1. Umri(Miaka)

2. Dini

1. Mkristo
2. Muislam
3. Mpagani
4. Mengine.....

3. Umeishi kwa muda gani katika hili eneo(kijiji).....

4. Nini hali ya ndoa yako?

- | | |
|--------------|------------------|
| 1. Nimeolewa | 4. Ishi Kinyumba |
| 2. Mjane | 5. Tumetengana |
| 3. Pekee | 6. Mtalaka |

5. Upo katika aina gani ya ndoa?

1. Mke mmoja
2. Wake wengi

6. Umri wa mimba (Angalia kadi ya kliniki ya wajawaazito).....

7. Je, ujauzito huu uliupanga?

1. Ndiyo
2. Hapana

8. Umezaa mara ngapi?.....

9. Hali ya maambukizi ya HIV (PMTCT- Tazama kadi ya kliniki na ingiza alama).....(kama mshiriki ana maambukizi ya VVU muulize muda gani umepita tangu apimea kwa mara ya kwanza.....Miezi/Miaka.)

10. Unafanya kazi gani?

1. Mtumishi wa serikali
2. Mfanyabiashara ndogo ndogo
3. Mkulima mdogo
4. Nyingine.....

11. Nini kazi ya mume/mwenzi wako?

1. Mtumishi wa serikali
2. Mfanyabiashara ndogo ndogo
3. Mkulima mdogo
4. Nyingine.....

12. Nini kiwango cha elimu yako?

- | | |
|----------------|---------------|
| 1. Sijasoma | 4. Sekondari |
| 2. Elimu dunia | 5. Chuo |
| 3. Msingi | 6. Chuo Kikuu |

13. Nini kiwango cha elimu ya mume/mwenzi wako?

- | | |
|----------------|---------------|
| 1. Sijasoma | 4. Sekondari |
| 2. Elimu dunia | 5. Chuo |
| 3. Msingi | 6. Chuo kikuu |

14. Familia yako ina watu wangapi?

15. Umeishawahi kusikia kuhusu Wahudumu wa afya wa jamii/wahudumu wa afya nyumbani katika kijiji chako?

1. Ndiyo
2. Hapana (Muelezee na kisha endelea na maswali yafuatayo)

16. Aina gani ya huduma hutolewa na wahudumu wa afya wa jamii katika eneo lako?

1. Huduma za matibabu
2. Elimu ya afya

3. Ushauri/unasihi wa HIV
4. Unasihi/ushauri kuhusu uzazi wa mpango
5. Huduma kuhusu Malaria
6. Vidokezo vya hatari vya ujauzito
7. Taja nyingine.....

17. Katika ujauzito huu umeishawahi kutumia huduma zinazotolewa na wahudumu wa afya wa jamii?

1. Ndiyo
2. Hapana

18. Uliridhika na huduma uliyopata toka kwa muhudumu wa afya wa jamii(kama hapana kwa nini)

1. Ndiyo
2. Hapana (kwa nini).....

19. Nini ilikuwa sababu ya wewe kupata hiyo huduma toka kwa Muhudumu wa afya wa jamii?

1. Nilikuwa mgonjwa
2. Nilitembelewa na Muhudumu wa afya wa jamii nyumbani.
3. Taja zingine

20. Umeishawahi kupata ushauri/unasihi kuhusu uzazi wa mpango?

1. Ndiyo
2. Hapana

21. Nani alikupatia huu unasihi/ushauri kuhusu uzazi wa mpango?

1. Mhudumu wa afya
2. Ndugu wa karibu/rafiki
3. Mhudumu wa afya wa jamii/Mhudumu wa afya nyumbani
4. Taja mwingine.....

22. Umeishawahi kupewa unasihi /ushauri kuhusu umuhimu wa kujifungulia katika kituo cha kutolea huduma za afya?

1. Ndiyo
2. Hapana

23. Nani alikupa huu unasihi/ushauri kuhusu umuhimu wa kujifungulia katika kituo cha kutolea huduma za afya?

1. Mhudumu wa afya
2. Ndugu wa karibu/rafiki
3. Mhudumu wa afya wa jamii/Mhudumu wa afya nyumbani
4. Taja mwingine.....

24. Je ujauzito huu uliupanga

1. Ndiyo
2. Hapana

25. Umeishawahi kupewa unasihi/ushauri kuhusu umuhimu wa kuanza kliniki ya wajawazito mapema?

1. Ndiyo
2. Hapana

26. Nani alikupa unasihi/ushauri kuhusu kuanza kliniki ya wajawazito mapema?

1. Mhudumu wa afya
2. Ndugu wa karibu/rafiki
3. Mhudumu wa afya wa jamii/Mhudumu wa afya nyumbani
4. Taja mwingine.....

27. Umeishawahi kupewa unasihi/ushauri kuhusu umuhimu wa kutumia dawa za kupunguza makali ya virusi vya ukimwi kwa akina mama wajawazito wenye maambukizi ya VVU?

1. Ndiyo
2. Hapana

28. Nani alikupa unasihi/ushauri kuhusu umuhimu wa kutumia dawa za kupunguza makali ya VVU kwa akina mama wajawazito wenye maambukizi ya VVU?

1. Mhudumu wa afya
2. Ndugu wa karibu/rafiki
3. Mhudumu wa afya wa jamii/Mhudumu wa afya nyumbani

4. Taja mwingine.....

29. Umeishawahi kupewa ushauri/unasihi kuhusu umuhimu wa kuwashirikisha jamaa zako kuhusu hali ya maambuzikizi ya VVU (serostatus disclosure)?

1. Ndiyo
2. Hapana

30. Nani alikupa unasihi/ushauri kuhusu umuhimu wa kushirikisha jamaa zako kuhusu hali ya maambukizi ya VVU (serostatus disclosure)?

1. Mhudumu wa afya
2. Ndugu wa karibu/rafiki
3. Mhudumu wa afya wa jamii/Mhudumu wa afya nyumbani
4. Taja mwingine.....

31. Umeishawahi kupewa unasihi/ushauri kuhusu njia zinazoshauriwa katika ulishaji wa mtoto mchanga aliyezaliwa na mama mwenye maambukizi ya VVU?

1. Hapana
2. Hapana

32. Nani alikupa unasihi/ushauri kuhusu njia zinazoshauriwa kuhusu ulishaji wa mtoto mchanga aliyezaliwa na mama mwenye maambukizi ya VVU?

1. Mhudumu wa afya
2. Ndugu wa karibu/rafiki
3. Mhudumu wa afya wa jamii/Mhudumu wa afya nyumbani
4. Taja mwingine.....

33. Mtoto mchanga aliyezaliwa na mama mwenye maambukizi ya VVU hupaswa kulishwa kwa namna gani.

1. Kunyosheshwa maziwa ya mama kwa muda wa miezi sita bila ya kupewa kitu chochote kingine.
2. Kupewa chakula kingine bila ya kumpa mtoto maziwa ya mama kabisa.
3. Nyingine (Taja).....

- 34.** Ungependa kuhudumiwa na muhudumu wa afya wa jamii mwenye jinsi ipi?
1. Kike
 2. Kiume
 3. Yeyote
- 35.** Kuna gharama zozote zinazo hitajika ili kuweza kupata huduma toka kwa muhudumu wa afya ya jamii?
1. Ndiyo
 2. Hapana
 3. Sijawaji kuhudumiwa naye (nenda swali la 39)
- 36.** Kwa wastani unafikiri hii gharama ikoje kwako?
1. Nafuu
 2. Naweza mudu
 3. Ghali
- 37.** Nini umbali kwa wastani toka kwako kwenda kwa muhudumu wa afya wa jamii?
1. Chini ya kilometa moja
 2. Zaidi ya kilometa moja
- 38.** Kwa wastani ni muda kiasi gani unatumia toka kwako kwenda kwa Muhudumu wa afya wa jamii.....Dakika
- 39.** Ni usaafiri wa aina gani unatumia toka kwako kwenda kwenye kituo cha kutolea huduma za afya/hapa?
1. Kutembea
 2. Usafiri wa umma
 3. Nakodi gari
 4. Pikipiki binafsi/gari
 5. Mwingine taja.....
- 40.** Kuna gharama unzutumia kuja kwenye kituo cha kutolea huduma za afya?
1. Ndiyo(Nafuu ,ghali, namudu)
 2. Hapana

41. Kwa wastani kuna umbali kiasi gani toka kwenye makazi yako na hadi kwenye kituo cha afya cha karibu?

- | | |
|---------------------------|---------------------------|
| 1. Chini ya kilomita moja | 2. Zaidi ya Kilomita moja |
|---------------------------|---------------------------|

42. Kwa wastani unatumia muda kisai gani kutoka nyumbani kuja kwenye kituo cha karibu cha kutolea huduma za afya.....dakika.

43. Nyumba yako imepigwa sakafu ya aina gani?

- | | |
|--------------|-----------------------|
| 1. Ya matope | 3. Vigae |
| 2. Saruji | 4. Nyingine Taja..... |

44. Nini chanzo chako kikuu cha maji ya kunywa katika kaya yako?

- | | |
|-------------------------|-----------------|
| 1. Maji ya bomba | 4. Bwawa/mto |
| 2. Kisima cha wazi | 5. Maji ya mvua |
| 3. Kisima kilichokingwa | |

45. Ni aina gani ya choo kaya yako inamiliki?

1. Cha shimo
2. Cha maji
3. Hatuna/Vichakani
4. Tunatumia na jirani

46. Nini chanzo kikuu cha nishati katika kaya yako?

- | | |
|----------|-----------------------|
| 1. Umeme | 4. Mafuta ya taa |
| 2. Gesi | 5. Kuni |
| 3. Mkaa | 6. Nyingine taja..... |

47. Nini chanzo kiukuu cha nuru/mwanga katika kaya yako?

- | | |
|---------------------|-------------|
| 1. Umeme | 4. Kuni |
| 2. Kandiri | 5. Nyingine |
| 3. Mshumaa/kibatari | taja..... |

48. Kaya yako inamiliki nini kati ya vifuatavyo(zungushia vyote ambavyo ni sahihi)

- | | |
|------------|---------------------|
| 1. Umeme | 4. Redio |
| 2. Kandiri | 5. Simu/ya mkononi |
| 3. Runinga | 6. Pasi /mkaa/umeme |

7. Jokofu

9. Gari

8. Baiskeli/Pikipiki

10. Ardhi ya kilimo

49. Ni mara ngapi katika mwaka uliopiata ulishindwa kuwa na chakula cha kukidhi mahitaji ya kaya yenu?

1. Kamwe

2. Nadra

3. Mara chache

4. Mara nyingi/mara kwa mara

5. Daima

50. Nini chanzo chako kikuu cha taarifa za afya kuhusu taarifa za afya ya uzazia kwa akina mama wajawazito?

1. Kliniki ya uzazi

2. Redio

3. Runinga

4. Vipeperushi

5. Wahudumu wa afya wa jamii

6. Marafiki

7. Wengine taja.....

51. Ni katika kipindi gani wewe huamua kutafuta msaada wa muhudumu wa afya wa jamii.

1. Nikiwa mgonjwa kiasi

2. Nikiwa mgonjwa sana

3. Sijawahi kuhudumiwa na muhudumu wa afya wa jamii

4. Nyingine taja.....

52. Nini chaguo lako la kwanza kwa huduma ya afya pale unapokuwa mgonjwa kiasi?

1. Mganga wa jadi

2. Duka la dawa

3. Hospitali

4. Kituo cha afya

5. Zahanati

6. Nyingine taja

53. Nini chaguo lako la kwanza kwa huduma ya afya pale unapokuwa unaumwa sana?

1. Mganga wa jadi

2. Duka la dawa

3. Hospitali

4. Kituo cha afya

5. Zahanati

6. Nyingine taja

54. Nini maoni yako kuhusu huduma zinazotolewa na wahudumu wa afya wa jamii katika eneo lako(kijiji).....

Asante sana kwa ushirikiano wako.