

**ASSESSMENT OF COMMUNITY HEALTH WORKERS' CONTRIBUTION TO
THE UTILISATION OF MATERNAL HEALTH SERVICES AMONG
WOMEN IN KAKUMIRO DISTRICT, UGANDA**

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DECLARATION

I hereby declare that the work presented in this book is original and has never been presented anywhere either partially or in total in any form unless otherwise acknowledged. I therefore present the book for the award of the Master of Science in Public Health Degree at International Health Sciences University.

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APPROVAL

The submission of this dissertation for examination has been approved by the researcher's supervisor

Signed.....

PROF.ROBERT BASAZA

SUPERVISOR

Date.....

DEDICATION

My dedication for this thesis goes to my beloved: Mrs Sepiranza Nangoma Bigobe, Mrs. Bernadette Kumalirwa, Dr. Katende Kaliruga, Job Nanyiri, my siblings, friends and children for the total support you rendered to me through this academic struggle. May the Almighty bless you abundantly.

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LIST OF ACRONYMS ABBREVIATIONS

| | |
|--------|---|
| ANC | Antenatal care |
| CBDs | Community based distributors of contraceptives |
| CDD | Community Drug Distributors |
| CHW | Community Health Workers |
| DHMTs | District Health Management Teams |
| FGD | Focus Group Discussions |
| HEWs | Health Extension Workers |
| HIV | Human Immunodeficiency Virus |
| HRH | Human resource for health |
| IHSU | International Health Sciences University |
| LHWs | Lady Health workers |
| MDG | Millennium Development Goal |
| MNCH | Maternal, newborn and child health |
| MoH | Ministry Of Health |
| NGOs | Non-Governmental organizations |
| PHC | Primary Health Care |
| PMTCT | Prevention of Mother to Child Transmission of HIV |
| PNC | Postnatal care |
| PPH | Postpartum hemorrhage |
| TB | Tuberculosis |
| TBA | Traditional Birth Attendants |
| TTBAs | Trained Traditional birth attendants |
| UBOS | Uganda Bureau of Statistics |
| UNICEF | United Nations International Children's Fund |
| VCT | Voluntary counseling and testing |
| VHTs | Village Health Teams |
| WHO | World Health Organization |

OPERATIONAL DEFINITIONS

Maternal health: Refers to the health of a woman during pregnancy or within 42 days of termination of pregnancy, due to pregnancy related issues.

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. They are also known not to be employed in a formal health system with no formal education and qualification.

Maternal health services: This is a collection of services aimed at improving the general health of women of reproductive age. In this study, they will include; antenatal clinic attendance, delivering in health facility, and postnatal care service utilization at the health facility excluding community case management by CHW.

Utilization: A woman was said to have utilized maternal health services health if she reports to have used any of the maternal health services during the previous pregnancy and in the post partum period

ABSTRACT

Background: Improving maternal, newborn and child health (MNCH) remains an important global health objective, particularly in developing countries with high rates of maternal and neonatal mortality. In several countries in Africa, CHWs have played generalist health roles and findings show that they have widened the coverage of many health services. Community health workers (CHWs) enhance access, and increase the use of health care services (PHC) acting as a conduit between patients in need and the required health care services

Objective: To assess the contribution of community health workers to the utilization of maternal health services among women in Bugangaizi West county, Kakumiro District, Uganda

Methods: The study was a cross sectional quantitative study supplemented with qualitative inquiry, conducted among postpartum mothers in Kakindo sub-county, Bugangaizi West county, Kakumiro District. Kakindo sub-county in Bugangaizi West county was purposively selected. In the household sampling process, the researcher used the EPI “30x 7” cluster sampling method to select them. Structured interviews were used to obtain primary data from the post partum mothers. For the qualitative approach key informant interviews were conducted to help to solicit for more in depth first hand information and opinions were, Quantitative data was cleaned, edited, and entered onto Epidata version 3.2 and exported to SPSS version 16 statistical software for analysis. The key informant data was then coded into themes independently. They were then analyzed using Nvivo 7 software.

Results: The results showed that ANC first visit attendance was universal (100%) but four ANC visits were attended by less than half but most of them (n = 153, 39.8%).

As for delivery service utilization, majority of the women delivered in the health facility (n= 349, 90.9%). As for postnatal care service utilization, the greater proportion of the women had not gone for postnatal care after child birth (n= 229, 59.6%). Overall, the level of maternal health service utilization, was found to be 57% (n = 219).

Community health workers had educated more than half of the women on child birth and its complications in the area, on the importance of giving birth in a health facility was acknowledged by majority of the women (n = 201, 52.3%), and on antenatal care and its importance (n = 224, 58.3%).

Exactly half of the women sampled in Kakindo sub county (n = 192, 50%) denied ever being educated on how to prepare for birth by a community health worker. Majority of the mothers disagreed with the statement that CHWs had come to their area and educated them about postnatal care services available after child birth (n = 199, 51.8%) and the holding of general health education sessions with all women and educating them about the advantages and disadvantages of TBAs by CHWs (n = 208, 54.2%).

More than half of the women reported that they had been offered general counseling by the community health workers on how to manage the pregnancy period in terms of health seeking behavior (n = 288, 64.6%). About half of the women sampled mentioned that they had never been registered and encouraged to go to health facilities for care during pregnancy by the community health workers (n = 200, 52%), whereas the same proportion (n = 192, 50%) agreed that CHWs had been to their area promoting healthy behaviors during pregnancy and

the postpartum period. More than three quarters of the women in Kakindo sub county disagreed that CHWs in the area accompanied women in labor from their homes to the health facility (n = 303, 78.9%), and still majority disagreed that CHWs in Kakindo sub county visited mothers who had just given birth early enough to identify danger signs and refer them to health facilities as needed (n = 249, 64.8%). Majority of the women in Kakindo Sub County denied being immunized while pregnant with the tetanus vaccine when the CHW came to the community (n = 224, 58.3%), and also disagreed to the statement that community health workers carried out assessments of the women like weight and height (n = 257, 66.9%).

Seven community health worker activities had a statistically significant contribution to the utilization of maternal health services. They are; education of women on antenatal care and its importance ($X^2 = 18.290$, $p = 0.001$), education of the women about postnatal care services available after child birth ($X^2 = 10.835$, $p = 0.028$), promotion of healthy behaviors during pregnancy and the postpartum period ($X^2 = 10.092$, $p = 0.039$), and the accompaniment of women in labor from their homes to the health facility ($X^2 = 13.220$, $p = 0.010$), visits of mothers who have just gave birth early enough to identify danger signs and refer them to health facilities as needed ($X^2 = 16.881$, $p = 0.002$), holding of general health education sessions with all women and educate them about the advantages and disadvantages of TBAs ($X^2 = 11.001$, $p = 0.027$), and assessments of pregnant women for example their weights, heights ($X^2 = 15.514$, $p = 0.006$).

Conclusion; Generally, the measured level of maternal health service utilization in this study is average however with approximately 6 out of every ten mother utilizing the three major maternal health services (ANC, SBA, and PNC). There is very low utilization of the four ANC visits and postnatal care services among the women in Kakindo Sub County. By and large, community health worker activities have a significant but moderate contribution on the utilization of maternal health services. It is only the activities related to reproductive health education, health promotion, accompaniment to the facility for delivery and home visits and assessment.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter elicits the introductory sections of this paper; it highlights the background to the study, a statement of the problem, study objectives, research questions, study justification and significance, the study scope and a conceptual framework. The thesis is in 6 chapters. Besides Chapter 2 is on; Literature review, Chapter 3; Methodology, Chapter 4; Results, Chapter 5; Discussion of results and Chapter 6; Conclusions and recommendations.

1.1 Background to the study

Improving maternal, newborn and child health (MNCH) remains an important global health objective, particularly in developing countries with high rates of maternal and neonatal mortality (Darmstadt, 2010; World Health Organization, 2014). Implementing such interventions presents a challenge to the global health community primarily due to weak health systems and human resource constraints (Travis, 2014). Particularly in Africa, the health worker crisis affects coverage and quality of health services as nurses, midwives, and doctors are being asked to provide an ever-growing, complex package of services with minimal support (Chen, 2004).

Since the 1978 Declaration of Alma-Ata, the World Health Organization (WHO) has promoted the wider use of community health workers (CHW) to provide selective clinical interventions and to promote healthy behaviors at the community-level (WHO, 1978).

WHO defines the role of a CHW as an activist/outreach specialist, educator, and a person who is able to provide care while the United States defines it as an activist/outreach specialist and educator (WHO, 2011). Promoting the commitment of health care workers equally at the

public and facility level remains central to the initiative of promotion accessibility and efficiency of health services, as it contributes to higher quality of care, increased productivity and lower rates of attrition (Wellins, 2005).

Sustainable Development Goal 3 will ensure the wellbeing and health for all people at every stage of life. This goal addresses the major health priorities that include: reproductive, maternal and child health; on communicable, environment and communicable diseases; universal health coverage and access for all to safe, effective, quality and affordable medicines and vaccines. It also is also calling for more research and development, financing, capacity strengthening of all countries in health reduction and management. Between 2000 and 2015, the globally the MMR reduced by 37 per cent, to an estimated ratio of 216 per 100,000 live births in 2015. And almost all maternal deaths occur in low-resource settings and can be prevented. Globally, 3 out of 4 births were assisted by skilled health-care personnel in 2015 (Division for Sustainable Development, UN-DESA, 2015)

Maternal health services utilization is an efficient approach to reducing the risk of maternal morbidity and mortality, especially in places where the general health status of women is poor (Mpembeni, 2007; Anya, 2008). ANC attendance and delivery in a health facility under the supervision of doctors and nurses can contribute significantly to the reductions in maternal morbidity and mortality through early detection and management of potential complications (Igberase, 2009).

There is sufficient evidence indicating the possible efficiency of interferences, such as access to access to skilled care at delivery neonatal care, in reducing maternal and neonatal mortality rates respectively (Campbell, 2006; Bulatao, 2013; Knippenberg, 2005).

Maternal and Child health service is among the area of focus targeted by Community health workers programs globally since its inception. 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 (Kasolo, 1993). Community health workers reach underserved or at-risk populations through outreach, basic health education, case management, advocacy, home visits, and referral (WHO, 2007). Through outreach, they are able to increase the vulnerable population access to health care and services. Through basic health education, including topics such as substance abuse, family planning, and nutrition, one goal is to increase knowledge and awareness in the community to improve the odds that adverse outcomes will be prevented. Case management, advocacy, home visits, and referrals are ways to develop and maintain relationships with the at-risk populations (WHO, 2007).

The WHO, in 2011, estimated a total of 1,300,000 CHWs worldwide (World Health Organization, 2011). The United States Bureau of Labor Statistics showed that approximately 83,000 CHWs employed in the United States (United States Department of Labor, 2010). Both statistics show that CHWs have a large presence in the field of community and public health. The probability of a community-based strategy in successfully lowering neonatal mortality in settings of feeble health systems with very low health service utilization and high neonatal mortality has been established in trials and exhibition projects in Asia (Kumar, 2008; Baqui, 2009; Bhutta, 2011, Waiswa, 2014). In trials done in Asia, home visits by trained CHWs to advance preventive care and additionally to give therapeutic care decreased neonatal mortality by around 30% (Waiswa, 2012). Be that as it may, there is little information on encounters of coordinating CHWs into wellbeing frameworks to enhance

maternal and infant results in settings in sub-Saharan Africa. In numerous African nations, CHWs have satisfied generalist wellbeing capacities, and confirmations propose that they have expanded the scope of a scope of health service coverage (Waiswa, 2012).

Home visits by CHWs and other group based wellbeing projects, for example, group based regenerative wellbeing correspondence mediations and group based conveyance projects to advance maternal and child health wellbeing and also contraceptive education, have been established in various nations and have demonstrated empowering comes about (Daniel, 2008; Tawye, 2005; Grosso, 2011). The requirement for group level access to care is most elevated in low-pay nations. In Uganda, almost all women (96%) get to antenatal care (ANC) for the primary visit, health facility deliveries, albeit expanding, have remained low (53%) (Annual Performance report, 2015).

A study that assessed the location of neonatal deaths in eastern Uganda, found that 54% of newborns died outside a health facility (Waiswa, 2010). Uganda experienced a significant reduction of the MMR in the period ranging from 1990 till 2010. It decreased by 47%: from 600 towards 360 deaths per 100 000 live births in 2014 (MOH, 2015). However, the total number of maternal and neonatal deaths annually is still unnecessarily high. The lack of access to effective, quality care throughout entire Uganda is a major cause for this problem

1.2 Statement of the problem

The challenge of severe shortage of trained midwives and other health workers still exists in Uganda; with 14 health workers per 10,000 people, substantially lower than the WHO recommended number of 23 per 10,000 (CEHURD, 2012). To counter this, in 2001, the Uganda Health Sector Strategic Plan 1 recommended the establishment of Village Health Teams to bridge the gap and increase equity in access to health services in all districts,

Kakumiro being one of them. Kakumiro district has over 1078 Community Health Workers / VHTs who are charged with the responsibility to empower communities to take control of their own health and wellbeing, increase health service access and to participate actively in the management of the local health services (Burdett trust for Nursing, 2015).

Notwithstanding, the burden of maternal morbidity and mortality due to facility based maternal health services underutilization by the women in especially Bugangaizi West County is still eminent. The district still grapples with poor maternal health indicators; although the antenatal care utilization is high at over 90%, only 47% of the women have the recommended four ANC visits and skilled birth attendance stands at only 31% (DHS, 2015). Further still, some pregnant women in the district die on their way to seek medical attention (Kisembo, 2016). These challenges underscore critical gaps in maternal healthcare access in Kakumiro district.

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 yet CHW / VHT interventions in maternal health have been implemented for years in Kakumiro.

1.3 Objectives of the study

1.3.1 General objective

To assess the contribution of community health workers in the utilization of maternal health services among women in Kakindo sub-county, Kakumiro District, Uganda

1.3.1 Specific objectives

- I. To establish the level of maternal health care services utilization among women of reproductive age in Kakindo sub-county, Kakumiro District, Uganda

- II. To assess the maternal health care activities done by community health workers in Kakindo sub-county, Kakumiro District, Uganda
- III. To determine the contribution of community health worker activities to the utilization of maternal health service utilization among women in Kakindo sub-county, Kakumiro District, Uganda

1.4 Research questions

- i. What is the level of maternal health care services utilization among women of reproductive age in Kakindo Sub-county, Kakumiro District?
- ii. What are the maternal health care activities done by community health workers in Kakindo sub-county, Kakumiro District?
- iii. What is the contribution of community health worker activities to the utilization of maternal health service utilization among women in Kakindo sub-county, Kakumiro District?

1.5 Justification and significance of the 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. The implementation of the CHWs concept in Uganda is marked by unanswered questions of long term sustainability and program effectiveness.

Despite the vast experience with CHWs, relatively little scientific evidence is available to answer basic questions notably their contribution in the utilization of maternal health services in the communities where they operate. There are few studies that have investigated the

linkage between CHW activities and facility based maternal health service utilization. The inadequacy of evidence regarding utilization of maternal health services as a result of CHW activities to pregnant women at national and local level shows the necessity of this study.

Study findings will guide policy makers to put in place strategies to ensure that CHWs' status concerns are addressed adequately in the facilities they use or through organizations that they work for. The results and recommendations made in this study will add valuable information to the Ministry of Health, Kakumiro District and other stakeholders to address issues of Community health workers.

This study is critical in assessing the role for CHWs as they assist women during labor and birth.

The study will contribute to improved maternal and newborn health services and subsequent reduction on maternal and child mortality and eventually socio-economic growth.

The findings will contribute to efforts for the leaders of Kakumiro District, Ministry of Health and NGOs to advocate the way of incentivizing CHWs which may promote income generating activities of CHWs cooperatives and sustainability of the program. It will make recommendations to the district, Ministry of Health and partners involved in national maternal and newborn health to improve their policies and guidelines.

The findings will stimulate the interest of other researchers to carry out more empirical studies on the contributions of community health workers in the improvement of maternal and newborn health

1.6 Scope of the study

This section presents the scope of the study that is the limits that this study entitled its self to in terms of geography (study site) and content.

1.6.1 Geographical scope

The study was done in Bugangaizi West County – Kakumiro district. Kakumiro district It is made up of 2 counties in which there are 8 sub-counties, 1 town council, 41 parishes including wards in town councils and 432 official LC 1s.

The 2014 national population census reports that, Kakumiro District has an estimated population of 146,454. Kakumiro district has been carved out of Kibaale district and it began effective 1st July, 2016 it has the following sub counties; Birembo, Bwanswa, Kakindo, Kasambya, Kisiita, Mpasana, Nalweyo, Nkooko and Kakumiro Town Council .

1.6.2 Content scope

The study only covered community health worker activities oriented towards maternal health and how these have contributed towards the utilization of maternal health services specifically antenatal care services, delivery care and postnatal care services.

1.6.3 Time scope

It is anticipated that the study was done to completion between the months of July and September 2016

1.7 Conceptual framework

The interrelationships between the variables that were studied are presented in figure I. The independent variable is the activities of the community health workers aligned towards maternal health promotion including; (1) Maternal health education (2) Maternal health counseling (3) registering all women of reproductive age and identifying those who are pregnant in the community to encourage prenatal care attendance and facility-based deliveries; (4) promoting healthy behaviors during pregnancy and the postpartum period; (5)

accompanying women in labor to the health facility; and (6) making early postpartum home visits to identify danger signs and refer women to the health facility as needed and (7) provision of basic maternity equipment(Maama kit).The dependent variable is the utilization of maternal health services conceptualized as 1. *Antenatal care (ANC) utilization*: whether the woman attended a health facility for antenatal care (ANC) at least once in her last successful pregnancy. 2. *Health facility delivery service utilization*: whether the woman gave birth at a health facility for her youngest child. 3. *Postnatal care (PNC) service utilization*: whether the woman visited a health facility within 24 hours of the birth of her youngest child

Independent variables

Dependent variable

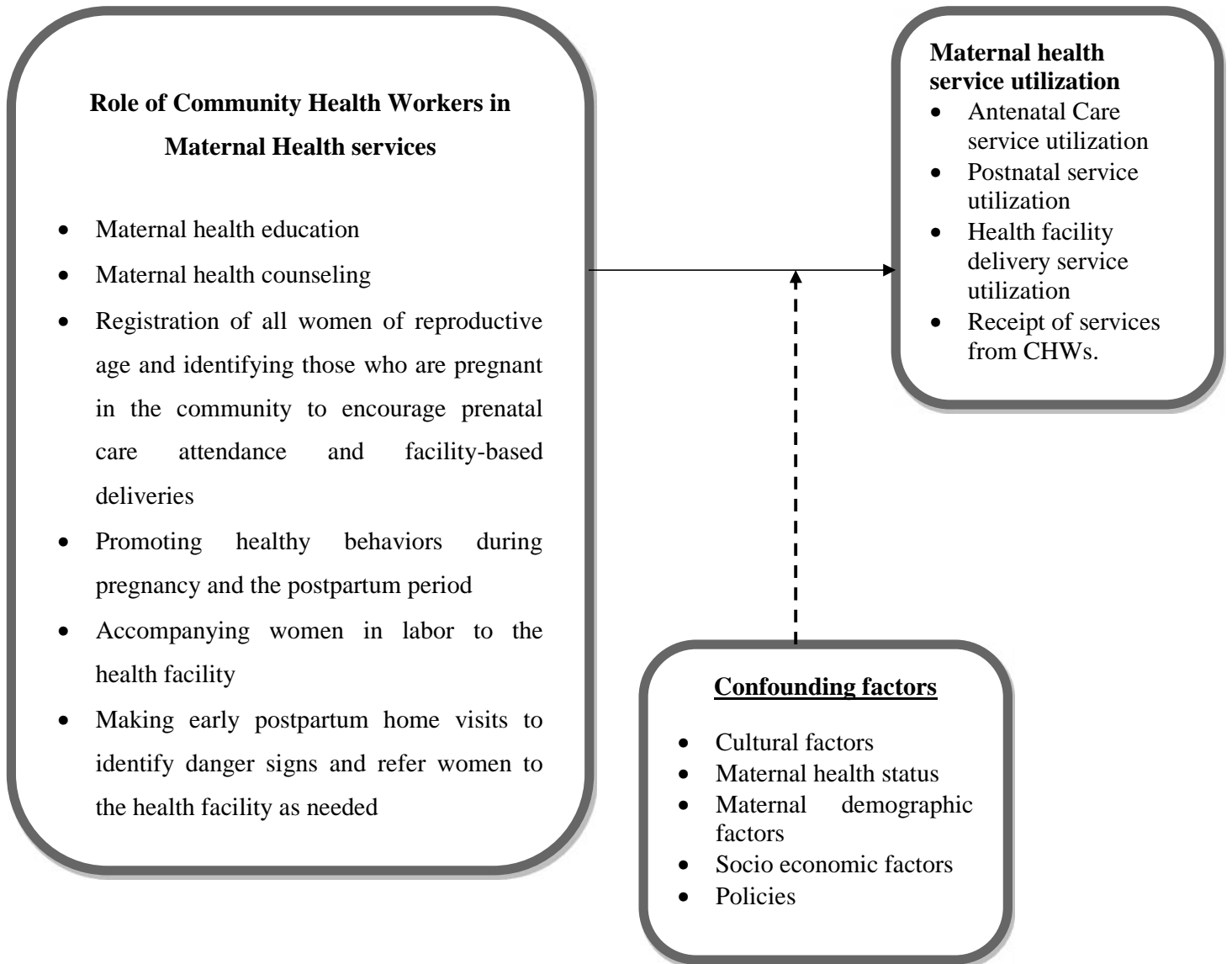


Figure 1: The interrelationship between variables in assessment of contribution of CHWs to the utilisation of Maternal Health Services

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter presents a systematic review of literature that is related to the study. In the literature search, the following databases were searched: CINAHL, BioMedCentral, Embase, Ovid Nursing Database, PLOSone, PubMed, Scopus, Web of Science and POPLINE. In addition, the Google and Google Scholar search engines, as well as The World Health Organization's website.

2.1 Level of Utilization of maternal health services

Maternal health refers to the health of women during pregnancy, childbirth and the post-partum period (WHO, 2012). A rewarding and fulfilling experience is how motherhood is viewed, with negative feelings breeding among some women because of the suffering, ill health, and post-partum experiences sometimes associated with it; especially in environments with less developed healthcare facilities. The main aim of maternal healthcare services is to reduce maternal and infant mortality. For that reason, understanding the factors that affect or motivate an at-risk mother's decision to seek antenatal care is crucial (Babalola&Fatusi, 2005).

With a variety of factors having been identified as the cause of poor utilization of healthcare services. These include the following: availability of affordable yet quality services, cultural beliefs, and socio-demographic status (Chakraborty, 2003; Shaikh & Hatcher, 2005). In the present study, maternal healthcare is analyzed under the following three categories: antenatal care practices, delivery practices, and postnatal care practices.

According to Carroli 2001, ANC visits institute one of the few times in which women in poor communities pursue care for their individual health and provides an key opportunity to detect and treat conditions such as anemia and infections and for deterrence services like prevention of mother to child transmission of HIV (PMTCT), and help mothers prepare for birth and any possible pregnancy-related difficulties, and the rewards of skilled delivery care with at least four ANC visits being recommended for a normal pregnancy (Campbell, 2006; Lindmark, 1998; MoH, 2006).

At least 90% of mothers attending ANC agreed to HIV VCT in the rural health facilities in Malawi, with approximately one-quarter were HIV-positive and enrolled into the PMTCT programme (Manzi, 2005). Skilled birth attendance is more likely to be taken up by women who attended ANC (Stanton, 2007; Yanagisawa, 2006) All the same, 20% of all women who attend ANC four times or more in sub-Saharan Africa, do not seek skilled delivery attendance (WHO & UNICEF, 2013).

There is no difference between disabled women and those that are not disabled in the timing of first contact with a health worker about their pregnancy care both were (94% and 95% by 12 weeks) or in their booking appointment (88% and 90% by 12 weeks). However, the disabled women had significantly more contacts with ANC during the pregnancy: over a third had 10 or more antenatal checks compared to non-disabled women (34% vs. 21%); half had four or more ultrasound scans in comparison with a third of non-disabled women (Maggie, 2013)

Delivery care

The reduction of maternal mortality has been associated with the delivery location of a health facility (UNICEF, 2003). Thaddeus and Maine (1994) and De Bernis, (2003) found that when

places of delivery are adequately equipped and appropriate skilled care is provided, maternal morbidity and mortality are effectively reduced. Conditions necessary for a safe delivery include a skilled attendant at every birth, such as a midwife, nurse trained as midwife, or a doctor. Mpembeni et al. (2007) stated that “The proportion of births attended by skilled health personnel was used as one of the important indicators to monitor progress towards the achievement of the millennium development goal of reducing maternal mortality rate”.

Home birth as a woman’s preference and lack of planning for delivery are toughened by the failure of health care providers to consistently communicate the importance of skilled delivery and immediate post-partum care for all women during routine antenatal visits. In a rural district in Tanzania, deliveries with a skilled attendant increased from 34.1% to 51.4% following engagement of community based safe motherhood promoters (SMPs). The improvement being attributed to, the close collaboration with existing community structures and health services as well as targeting of individual women, home visits by SMPs and involvement of influential people within the communities.

Postpartum care

It is comprehensively perceived that postnatal care is essential in keeping up and advancing the strength of the lady and the infant, while giving a chance to wellbeing experts to distinguish, screen and oversee wellbeing conditions that may create in the mother and infant amid the postnatal period. Likewise, postnatal care furnishes health care workers with the chance to advance exclusive breastfeeding, individual cleanliness, proper nourishing practices, and family planning guidelines and benefits to mothers. Besides, postnatal care allows for the provision of postnatal vitamin A and iron supplementation to the mother and immunization of newborns to provide them with optimal start to life (WHO, 2010).According

to the World Health Organization (2010), the postnatal period begins immediately after childbirth and lasts six weeks.

Postpartum care is given to a mother within the six-week period after childbirth and is critical to a mother's health (Cheng, 2006; Dhakal, Chapman, Teijlingen, 2007). In addition, effective postpartum care is essential to maximize the survival of both the mother and newborn (Hishamshah, 2011). Strangely enough, about 70% of women in the developing countries do not receive any type of postpartum care (Hishamshah et al, 2011). A survey data conducted in Bla, Mali in 1990 found that only 34 percent of women interviewed sought postnatal care (Smith, 2004). In addition, postpartum hemorrhage (PPH) is the leading cause of maternal deaths in sub-Saharan Africa (Khan et al. 2006).

2.2 Community health worker activities

Community Health Workers (CHWs) have taken an interest in the arrangement of essential human services everywhere throughout the world for quite a few years. There is proof demonstrating that Village Health Teams (VHTs) can add altogether to the endeavors of enhancing the health of the populace, especially in those settings with the most elevated deficiencies of spurred and skilled wellbeing experts (WHO, 2014). An audit of CHWs over the globe gives a wide ranging picture of services offered by the CHWs.

The audit shows that an extensive variety of administrations are offered by the CHWs to the people, including arrangement of safe conveyance; advising on breastfeeding; management of uncomplicated childhood illnesses; provision of health education on prevention and treatment of malaria, tuberculosis (TB), HIV and AIDs, sexually transmitted infections, and non-communicable diseases; and rehabilitation of people suffering from common mental health problems.

Services offered by CHWs have helped in the lowering of maternal and child death rates and have additionally helped with diminishing the burden and expenses of TB and malaria. Nonetheless, the scope by such projects and the general advance towards accomplishing the Millennium Development Goal (MDG) targets was moderate (WHO, Report Global Health Workforce Alliance Year).

Community health workers (in Uganda, CHWs are referred to as Village Health Teams, or VHTs) provide education and primary health delivery in many clinical areas, and comprise one of the most effective options for providing primary health care in poor communities around the world. These lay personnel live in rural communities and are trained in the basics of primary and preventive health. In recent years, there has been a surge in interest in community health workers to improve health in some of the world's poorest countries (Omni Med, 2008). A number of studies have found that community health workers have improved health via prevention and treatment of malaria, increased rates of immunization, reduced childhood mortality and morbidity from common childhood infections, increased breast-feeding, and improving TB treatment outcomes, among other interventions (Omni Med, 2008).

In keeping with the goal of an orientation toward primary health care and more broad-based coverage of its population, the Ministry of Health introduced a number of vertical programs in the 1990s with specific targets and strategies, all carried out by community health workers. These various programs trained individuals in only their specific area and each operated independently. Examples included community based distributors of contraceptives (CBDs), Community Drug Distributors (CDD) of pre-packaged antimalarials drugs (branded Homapak), Child Growth promoters, and Counseling aides among others (Omni Med, 2008).

Most of these village (or parish) level health workers were selected through dialogue with the community, and each worker was given a specific set of tools and techniques.

A network of VHTs has been established in Uganda which is facilitating health promotion, service delivery, community participation and empowerment in access to and utilization of health services. The VHTs are responsible for: Identifying the community's health needs and taking appropriate measures; Mobilizing community resources and monitoring utilization of all resources for their health; Mobilizing communities for health interventions such as immunization, malaria control, sanitation and promoting health seeking behaviour; Maintaining a register of members of households and their health status; Maintaining birth and death registration; and Serving as the first link between the community and formal health providers. Community based management of common childhood illnesses including malaria, diarrhoea, and pneumonia; as well as distribution of any health commodities availed from time to time.

An aggregate of 97.3% (n = 109) community health worker who had visited women in their homes in order to keep an eye on their health statuses while 99.1% (n = 111) reported engaging in community mobilizations for issues related to health, 84.8% (n = 95) reported to be involved in basic health promotion and education activities, 75.9% (n = 85) answered to be involved in administration of basic sick wellbeing conditions while 88.4% (n = 99) answered to be involved in following up of pregnant women and post natal moms. Neonatal development and acknowledgment of risk signs was accounted for by 86.6% (n = 97). 80.4% (n = 90) and 77.7% (n = 87) reported to be following up discharged cases from health facilities and those on long term treatment respectively.

Other reported activities of the CHWs found in the study included dispersion of health commodities, community information management, disease close watch, recognition of health problems in the community, immunization activities, giving of fundamental health care messages for behavior change, children growth monitoring, community work such as school cleaning and linking of the community members to the health centers(Kimbugwe, 2014).

One of the real roles executed by the VHT individuals is Home visits at Household level. Routinely going door to door on specific days of the week visiting households they are in charge of. The aims for the home visits include: finding out the health statuses of individuals in these households, delivery of health education and health promotion services with prominence on sanitation, delivery of medications as well as spotting individuals who are sick, who are then referred to health facilities (Kimbugwe *et al*, 2014). It is these home visits that allow for obtaining information regarding households and individuals in the community is obtained and recorded in the health management information systems report forms; they termed these visits “community walks”.

Community health workers likewise do mobilization for health related issues, for example, Vitamin A supplementation, vaccination exercises and other health and outreaches conducted by the health facilities similar to what was reported in the Yumbe district study (Innocent, 2007). Through these mobilizations, solid solutions for the health needs of the groups are built up with investment of all people in the towns for instance by authorizing laws that guide and advance sanitation in the towns they serve and it is through these laws that group individuals subscribe to in order to inspire the group sanitation all in all.

They likewise lead wellbeing advancement and training exercises for instance group refinement about legitimate sanitation, individual cleanliness and HIV anticipation. They instruct people about the significance of having pit toilets furthermore take an interest in building them. They additionally complete wellbeing training sessions with an emphasis on restraint, being reliable and condom use with an end goal to check down the expanding HIV contaminations. They assist urge people to know their HIV statuses taking a gander at it as an establishment in battling the infection. They encourage guarantee cleanliness of open places, for example, water sources/offices keeping in mind the end goal to evade pollution and henceforth forestalling ailment out breaks.

They carry out community based follow ups of pregnant women and post partum mothers and usually, this was cited as an obligation for them to assist in the prevention of mothers from carrying out home deliveries and lower the number of women who are attended to by untrained personnel during labour consequently contributing to the lowering of maternal morbidity and mortality. This is accomplished through the registration of all pregnant women and keeping track of them until they deliver. They sporadically carry out village meeting with pregnant women and their husbands for the period of which antenatal care attendance is emphasized and information relating to family planning is shared with them (Kimbugwe *et al*, 2014).

During post natal follow ups, mothers are encouraged to exclusively breast feed their children up to six months and continue breast feeding up to when the child is at least 2 years of age. For neonatal follow up and recognition of danger signs, they identify danger signs such as excessive vomiting, lethargy, unconsciousness, marked diarrhea and high body temperature and in case the signs and symptoms fail to resolve within 24 hours on the medication they

normally distribute or if they cannot handle such cases, these neonates are referred to health facilities. They also follow up discharged cases from the health facilities and those on long term treatment. Discharged patients are monitored by VHTs and advise them accordingly. Also, individuals on long term treatment such as those on Anti-Retroviral drugs for HIV, cotrimoxazole prophylaxis, anti-Tuberculosis drugs, among others do benefit from VHTs since they offer to them adherence visits (Kimbugwe *et al*, 2014).

Another community health worker approach involves female or ‘lady’ health workers, who organise group sessions at the community to promote antenatal care, use of clean kits at delivery, institutional delivery, newborn care, danger signs identification and promotion of health-seeking behavior (Bhutta, 2011). In Pakistan for example, lady health workers (LHWs) from the communities in Hala and Matiarisub districts are trained for 15 months to be able to identify all pregnant women in their area and provide to them basic antenatal care and maternal health education. They also promote use of clean delivery kits; encourage facility births and immediate newborn care. LHWs work in collaboration with voluntary community health committees and traditional birth attendants (Bhutta, 2011).

2.3 The contribution of community health worker activities to the utilization of maternal health service utilization among women

Community-based programs have gained popularity and are present today in many countries around the world. A community health worker may be “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” (Lewinet *et al* 2005). Generally community health workers function as intermediaries between community and institutional health care services. The training and responsibilities of CHWs can vary widely: some CHWs are volunteers, while others are paid;

some are from within the communities in which they work, while others are not. In some cases, they may be trained to deliver basic health care and implement interventions, while in others; their primary role may be to deliver information about health and how to access health services.

Studies in Latin American countries revealed that PHC through community health worker activities had a strong potential to improve access to health care among the previously marginalized and excluded individuals (Nyasuna, 2011). Komaketch (2007) found out that the VHTs have been active in mobilization of the community for mass and routine immunizations, vitamin A supplementation and child health days as well as monitoring the maternal and neo-natal tetanus situation in their areas (Innocent, 2007)

Most of the existing research on community health work has utilized quantitative methods to analyze pre- and post-CHW intervention statistics to determine whether or not CHWs change health outcomes. A Cochrane meta-review of lay health workers in primary health care in the U.S. and in developing countries concluded that CHWs are successful at improving certain outcomes, such as immunization and the prevalence of breastfeeding (Levin *et al* 2005). Separate studies specific to Northeast Brazil (Macinko, 2007; Edmond, 2002; Cuvino, 2010) similarly found that the presence of CHWs is associated with decreases in maternal mortality, infant mortality rate, post-neonatal mortality, and mortality due to diarrhea, but not with neonatal mortality rates.

After CHW intervention, breastfeeding rates, especially of infants 6 months and older, immunization rates, and the number of women receiving contraceptive advice from a physician all increased. These studies provide evidence for the effectiveness of CHW interventions in improving maternal and child health outcomes. Araya (2011) in his study found that community health worker activities improved family planning services utilization

was in agreement with other studies conducted in Ethiopia (Kitaw, 2007; Abraha, 2009). In Ergano's study (2012), also showed that the proportion of women who had at least one ANC visit had increased considerably. Nevertheless the study showed the proportion of women who had 4 and more ANC visits as recommended by WHO was still low (48%).

Thus concerted effort by HEWs and VCHWs was necessary to educate women about the importance of having four and more ANC visits. Another important achievement observed in that study was the increase in HIV testing. A study on antiretroviral treatment in Ethiopia depicted a similar substantial expansion of access to HIV counseling and testing in Ethiopia (Assefa, 2009). This increase was not totally attributed to HEWs, because nongovernmental organizations (NGOs) and other stakeholders also played a crucial role in HIV testing and education, through different approaches such as campaigns.

HIV programs are highly supported by NGOs and other stakeholders. However, the positive role of HEWs in improving HIV testing and prevention in rural areas was undisputable. In reality, in rural kebeles in Ethiopia, HIV testing and education on HIV prevention is carried out primarily by HEWs. Even HEWs who are not trained for HIV testing organized and coordinated the campaigns for HIV testing. Practically all the health activities including campaigns at rural kebeles in Ethiopia are undertaken and organized by HEWs. In general, the HEWs in that study did not succeed in improving utilization of health facility delivery, PNC check up and use of iodized salt.

Another study by Abraha (2009) also showed no progress in skilled birth assistance and postnatal care coverage due to community health worker activities in Ethiopia since 1998. Contrary to the findings of a cross sectional study among 60 households in Tigray region which was conducted at the earlier stages of the HEP implementation, the study by Araya (2011) revealed the proportion of women who were assisted for birth by trained traditional

birth attendants (TTBAs) is much higher than those assisted by HEWs (Negusse, 2007). This according to Araya (2011) was due to the fact that the number of TTBAs in a kebele was higher than the number of HEWs.

ANC attendance provides an opportunity for assessment of women's health and planning for delivery and is an important level in the improvement of maternal and child health outcomes pregnancy (Campbell, 2006; Lindmark, 1998; MoH, 2006). A community health worker evaluation that was carried out in Tanzania by The rising first ANC attendance in this evaluation is consistent with those in another study conducted in a rural district in Tanzania by Ediau, (2013) showed increased ANC booking following community engagement (Mushi, 2010).

The community engagements in these program interventions also addressed cultural beliefs and barriers which have been shown to influence ANC attendance (Simkhada, 2008). In that evaluation, the fourth ANC attendance was however not impacted much suggesting that more efforts are required for communities to appreciate the need for follow-up visits, and facilities to ensure retention of women after the first visit (Sanjel, 2012).

Skilled delivery care is crucial in saving the lives of mothers and their infants (ICM/FIGO, 2009). Provision of delivery supplies had a significant and fairly sustained impact in terms of increasing health facility deliveries; whether or not these supplies are delivered as mama-kits or other form, ensuring availability of delivery supplies is an important intervention in increasing facility based deliveries. The additional items in the mama kits for the babies may have also acted as an added incentive for facility based deliveries, an area that may require further scrutiny, since it was implemented alongside a myriad of other interventions.

Whereas other interventions such as community mobilization and male partner involvement may have contributed, there was a clear link between the availability of delivery kits and facility based deliveries. As documented in various studies, the availability of mama-kits could have addressed the challenges associated with poor families procuring delivery items as is often required in times of stock outs at facilities, (Collin, 2007; Mwangome, 2012; Simkhada, 2006)

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This was a study to assess the contribution of community health workers in the utilization of maternal health services among women in Kakindo sub-county, Kakumiro district. The research design, the study population and eligibility criteria, sample size determination, a description of the study variables, sampling procedures are described. This chapter also describes the data collection methods and instruments that was used, data quality control techniques, the data analysis plan, the results dissemination plan and ethical considerations.

3.1 Study design

The study was a cross sectional quantitative study supplemented with qualitative inquiry was conducted among postpartum mothers in Kakindo sub-county, Bugangaizi West CountyKakumiro district. The study adopted a cross-sectional study design because by choosing this design, the researcher was able to sample out only a representative sample of targeted respondents and be able to study them for specific period of time without a need for follow up. This was necessary given the time constraints and the very large size of the target population in the county of study (Bugangaizi).

For the quantitative dimension, interviewer administered questionnaires was used to survey categorical variables related to maternal demographic characteristics and practices of CHWs. The approach was considered most appropriate for the study because of its ability to elicit a diverse range of baseline information (Mugenda, 2008). On the qualitative dimension, key informants interviews were used to obtain opinions of the Health unit in charges, VHT team leaders, and the District Community Focal person on the activities of the community health

workers are related to maternal health. The approach was chosen because of its ability to elicit in-depth opinion that qualify quantitative data source from the mothers.

3.2 Data sources

In this study, two data sources were utilized, the primary source being postpartum women in Kakindo sub-county and key informants. The secondary data sources was health records in the district HMIS, Bugangaizi West HSD at Kakindo HC IV and peer reviewed literature.

3.3 Study population

In this study, the study population was postpartum mothers who are residents of Kakindo sub-county. This is a study population from which a sample with definitive features was selected. It is a population to which the findings of the sample were generalized (Bryman, 2008).

3.3.1 Eligibility criteria

Inclusion

- Postpartum mothers who consented to participate in the study
- Mothers who were not more than 2 years postpartum
- Postpartum mothers who had been residents of Kakindo sub-county for at least 1 year

Exclusion criteria

- Postpartum mothers for whom the youngest child was more than 2 years old
- Postpartum mothers who will not consent to participate in the study either verbally or in written
- Mothers who had stayed in Kakindo sub-county for less than 1 year

3.4 Sample size calculation

To estimate the study sample size for this study, a formula for estimating proportions in an infinite population by Kish Leslie (1965) was used as follows;

$$n = \frac{Z^2 \times p(1-p)}{d^2}$$

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%

Therefore;
$$\frac{1.96^2 \times 0.5(1-0.5)}{0.05^2}$$

n = 384 postpartum women

3.5 Sampling procedures

Kakindo sub-county in Bugangaizi West County was purposively selected because it has the highest number of residents, a relatively large number of VHTs and the highest number of home deliveries (DHI, 2009). Simple random sampling was used to sample fifty percent (50%) of the parishes out of those that make up Kakindo sub-county. This was done using the lottery method in which a ruffle was drawn without replacement to avoid bias. It was presumed based on the assumption by Amin (2005) that the parishes (75%), if randomly selected, are substantially representative of the sub counties that make up the county.

In the household sampling process, the researcher will use the EPI “30x 7” cluster sampling method to select them. In this method, 30 communities (clusters) was selected with probability proportional to the most recent census estimate of the community population size, by systematic selection from a list of cumulative population sizes in each parish. In each selected cluster, the researcher and his team started at a central point, and select a random direction from that point, and then choose a household at random among those along the line from the centre to the edge of the community.

In this household, efforts were made to establish whether the household has an eligible respondent (postpartum mothers not more than 2 years postpartum). Starting from this household, the next nearest household is visited in turn until at least seven mothers have been found.

In case of non-response, call-backs were not be implemented; the research team proceeded to the next household. Since clusters are selected with probability proportional to estimated size (PPES), households was selected with approximately equal (but unknown) probability, and all eligible mothers in a household are selected, the overall probability of any mother being selected was roughly equal, and the design is approximately self-weighting (no weighting is needed in the analysis).

Village Health Teams leaders (Key informants)

The VHTs were sampled using the simple random sampling technique. The various units of sampling in the sub-county were parishes. Random sampling was used to select 1parish from each sub county and in each parish the functional health facility therein was included in the sampling frame. In each parish, the village health team leader was identified and interviewed as a key informant.

3.6 Study variables

Independent variables

Community health worker activities related to maternal health

Dependent variables

Maternal health services utilization

3.7 Data collection techniques

Structured interviews were used to obtain primary data from the post partum mothers. These interviews were used because they require less time to conduct and they are not tiresome on the side of the respondent since they require precise responses. The structured interview further helped to guide the researcher and keep the respondents on the subject.

For the qualitative approach key informant interviews were conducted to help to solicit for more in depth information first hand information and opinions were obtained. The KI interviews helped to enrich the research findings by providing more information not obtained through the questionnaires. Five key informant interviews were held in total; four key informant interviews were held with the VHT leaders and one with a maternal health service provider at Kakumiro health center III.

During the key informant interviews, the principal investigator played the major role of moderating the interviews while a research assistant did the audio recording and noting of the opinions of the key informant.

3.8 Data collection tools

The quantitative data was collected using a pretested structured questionnaire while the qualitative data was collected through focused group discussions and key informant interviews. The quantitative data was collected using pretested structured questionnaire. The questionnaire was designed with close ended questions arranged in three sections; (1) Socio

demographic characteristics (2) Maternal health service utilization (3) community health worker utilization.

Key informant interview guides

These were designed with only open ended questions in line with the objectives of the study. These topic guides was designed with open ended questions intended to obtain in-depth opinions from the respondents.

3.9 Data analysis plan

Quantitative data was cleaned, edited, and entered onto Epidata version 3.2 and exported to SPSS version 16 statistical software for analysis. Frequency distribution and cross tabulation was done against the variables of interest. Proportions were reported for categorical data while mean and standard deviation is reported for age. Data was summarized using descriptive statistics such as frequencies and presented by use of frequency tables, bar charts and pie charts, tables, figures and narration.

Bivariate analyses were done to assess the association between explanatory variables and outcome variable of the study. All variables with a p-value of < 0.05 at the bivariate analysis was included into multivariable logistic regression model in which odds ratio with 95% confidence intervals was estimated to identify independent community health worker activities that predict maternal health service utilization among mothers in Bugangaizi West County. P-values less- or equal to 0.05 were employed to declare the statistical significance level.

Modeling strategy

To identify community health worker activities that predict maternal health service utilization among mothers in Bugangaizi West County a multivariate predictive model was built using

the step-wise forward selection method. The Hosmer-Lemshow criterion for statistical significance ($P < 0.05$) was used to identify covariates from the bivariate analysis to add into the model starting with those with the strongest association.

A step-wise approach was used where a covariate was added one at a time, the model with the additional covariate was compared with that without to help determine whether the model with the extra covariate improved the model fit or explained the data better. A likelihood ratio test of < 0.05 was used as the cut-off for determining factors to be retained in the model that predict maternal health service utilization.

Qualitative data

The qualitative data was described, summarized and interpreted for each key informant guide. It was edited for grammar and in line with the interview guide. Similar responses were coded. Summarisation of Data with similar information was done under the same theme, was cleaned and later interpreted. It was then reported descriptively paying attention to the issues and matters mentioned by the majority of the informants and capturing any unique experiences reported. Qualitative data from interviews was transcribed verbatim from the tape recorders. The key informant data was then coded into themes independently. They were then analyzed using Nvivo 7 software (QSR international Pty Ltd 1999 to 2006) for qualitative data analysis.

3.10 Quality control techniques

Training of research assistants

Data collectors were given three day training on the questionnaires and interviewing techniques. Moderators for the key informant interviews were also given two day training on how to chair the interviews and other related issues.

Translation and pretesting

Initially the questionnaires were prepared in and later translated to the local language of Runyoro and again they were translated back into English to check the consistency..Pretesting of the questionnaires was done before the actual data collection. Further modifications were made to the questionnaire considering the terminologies and formatting based on the pretest findings. The pre-test was done on (n=19, 5%) respondents of the study, and the questionnaire was assessed for its completeness, clarity, and length before starting the survey to people outside the selected study parishes. On a daily basis, data quality-check was made during the study, and data was double-entered to minimize error during data processing.

3.11 Plan for dissemination

The results of the study will be compiled into a report / final dissertation that will contain the results, and recommendations. A copy of the report was submitted to the Institute of Public health and Management of International Health Sciences University (IHSU) for academic reasons and approval. Copies of the approved report were disseminated to Kakumiro district, LCs among others. Also, if the results are approved by the research committee, conferences, publications and seminars were used as arenas for disseminating the results to other people / stakeholders so that other interested people can learn from this study.

3.12 Ethical consideration

The researcher obtained an introductory letter from the Dean of Health Science and Management of International Health Sciences University (IHSU), which enable him to embark on the process of data collection. Likewise, a clearance letter was obtained from the local leaders (Appendix), allowing the researcher to conduct research in the area.

The participants were explained about the study purpose, objectives, benefits and risks for informed consent. Informed consent was sought from the study participants. Participation in the study was voluntary and that the respondents had the right to accept or decline to participate, or withdraw from the study anytime.

Confidentiality of the participants' responses was maintained throughout the study by using codes to differentiate the responses and conducting the interviews in privacy. All data collected was analyzed and reported in formats that do not allow participant identification.

The researcher ensured the research subjects' right to self-determination by informing the subjects about the proposed study and allowing them to choose to participate in the study or not. The researcher provided subjects written information that explained the procedures and purpose of the study, and the researcher was available to answer any of the participant's questions about the study. Participants were informed that the services provided from the health workers and health facilities were not to be affected if they decided not to participate in the study.

The researcher ensured that all subjects received fair treatment and were protected from discomfort and harm. Participants were told of risks, side effects or discomforts that could be expected from the research. Care was taken to provide subjects a comfortable, quiet, and private location to complete the questionnaire.

3.13 Study limitations

Study limitations in this study included, recall bias whereby in order to minimize it, the respondents were asked on their experience of utilizing CHW service in the most recent pregnancy. Level of illiteracy was also an issue as number respondents had difficulty in

answering relatively simple questions and this was addressed by simplifying and repeating the questionnaire.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter is presented in three main sub-sections; the first sub-section presents data findings in descriptive terms; the second sub-section shows results of Bivariate analysis, while the third sub-section presents findings on the effect of a combination of various selected variables on the dependent variable obtained using Binary logistic regression analysis. The results are presented in chronology with the objectives of this study.

4.1 Socio demographic profiles of the study respondents

The socio-demographic profile of the respondents including: maternal age, education level, religion, marital status, parity are presented in table 1.

Table 1: Socio demographic profiles of the study

| Profiles | Frequency | Percent |
|------------------------------------|-----------|---------|
| n = 384 | | |
| Present maternal age: years | | |
| 15 – 24 | 152 | 39.6 |
| 25 – 34 | 190 | 49.5 |
| 35 – 49 | 42 | 10.9 |
| Education level | | |
| No school | 49 | 12.8 |
| Primary school | 232 | 60.4 |
| Secondary school | 78 | 20.3 |
| Tertiary institution | 25 | 6.5 |
| Religion | | |
| Catholic | 244 | 63.5 |
| Protestant | 63 | 16.4 |
| Muslim | 14 | 3.6 |
| Born again | 56 | 14.6 |
| Seventh day Adventist | 7 | 1.8 |
| Marital status | | |
| Single | 48 | 12.5 |
| Married | 333 | 86.7 |
| Divorced | 2 | 0.5 |
| Widowed | 1 | 0.3 |
| Parity | | |
| One | 80 | 20.8 |
| Two | 120 | 31.2 |
| Three | 56 | 14.6 |
| Four | 65 | 16.9 |
| More than four | 63 | 16.4 |

This study sampled women of reproductive age in Kakindo sub-county, Kakumiro District, their demographic characteristics were distributed in such a way that majority of their ages fell within the range of 25 – 34 years (n = 190, 49.5%); The highest education achievement of the majority was primary education (n = 232, 60.4%), more than three quarters of them said they were married (n = 333, 86.7%), and were Catholics (n = 244, 63.5%).

4.2 Utilization of Maternal health services

4.2.1 Utilization of antenatal care services

The utilization of antenatal care services among the women included: attendance of ANC during pregnancy, time of ANC initiation during the previous pregnancy and number of ANC visits during previous pregnancy in Table 2.

Table 2: Utilization of antenatal care services

| ANC service category | Frequency | Percent |
|--|-----------|---------|
| n = 384 | | |
| Went for antenatal care during pregnancy | | |
| Yes | 384 | 100.0 |
| No | 0 | 0.0 |
| Time of ANC initiation during previous pregnancy | | |
| 1st trimester (first 3 months) | 144 | 37.5 |
| 2nd trimester (4 – 6 months) | 226 | 58.9 |
| 3rd trimester (7 – 9 months) | 9 | 2.3 |
| Don't remember | 5 | 1.3 |
| Number of ANC visits during your previous pregnancy | | |
| One | 16 | 4.2 |
| Two | 64 | 16.7 |
| Three | 144 | 37.5 |
| Four | 153 | 39.8 |
| Don't remember | 7 | 1.8 |

The results in table 2, show antenatal care utilization trends of women of reproductive age in Kakindo sub county – Kakumiro district. It was found that all the women sampled 100%

(384) reported attending antenatal care at least once during their previous pregnancies. However, the attendance was started in the second trimester for majority of these women 226 (58.9%) and four visits were attended by less than half but most of them (n = 153, 39.8%).

4.2.2 Utilization of Delivery care services

The utilization of Delivery care services among the women included: delivery of the last child in a health facility, booking for delivery at any facility two weeks to the birth of their child are presented in Table 3.

Table 3: Utilization of Delivery care services

| Delivery service category | Frequency n = 384 | Percent |
|--|------------------------------|----------------|
| Did you book for delivery at any health facility two weeks to the birth of your child | | |
| Yes | 88 | 25.2 |
| No | 261 | 74.8 |
| Delivered last child in a health facility | | |
| Yes | 349 | 90.9 |
| No | 35 | 9.1 |

As for delivery service utilization, majority of the women delivered in the health facility (n= 349, 90.9%), nonetheless for those who delivered in the health facility, booking was not done at least two weeks before the expected date of delivery (n= 261, 74.8%).

4.2.3 Utilization of postnatal care services

On the utilization of post natal care services among the women included: attendance for post natal care after birth, check up after 7 days and check up after 6 months after birth.

Table 4: Utilization of postnatal care services

| PNC service category | Frequency | Percent |
|---|------------------|----------------|
| Went for postnatal care after child birth | | |
| Yes | 155 | 40.4 |
| No | 229 | 59.6 |
| Total | 384 | 100.0 |
| When did you start going for PNC after birth | | |
| Within first two days | 48 | 31.0 |
| Not within first two days | 107 | 69.0 |
| Total | 155 | 100.0 |
| Went to the health facility for check up 7 days after birth | | |
| Yes | 64 | 41.3 |
| No | 91 | 58.7 |
| Total | 155 | 100.0 |
| Went to the health facility for check up after 6 weeks after birth | | |
| Yes | 56 | 36.1 |
| No | 95 | 61.3 |
| Baby still one week | 4 | 2.6 |
| Total | 155 | 100.0 |

As for postnatal care service utilization, the greater proportion of the women had not gone for postnatal care after child birth (n= 229, 59.6%).After birth, it was found that most of the women had not gone to the health facility for check up after 7 days (n = 91, 58.7%), and further still after birth, most of the women had not gone to the health facility for check up after 6 weeks (n = 95, 61.3%).

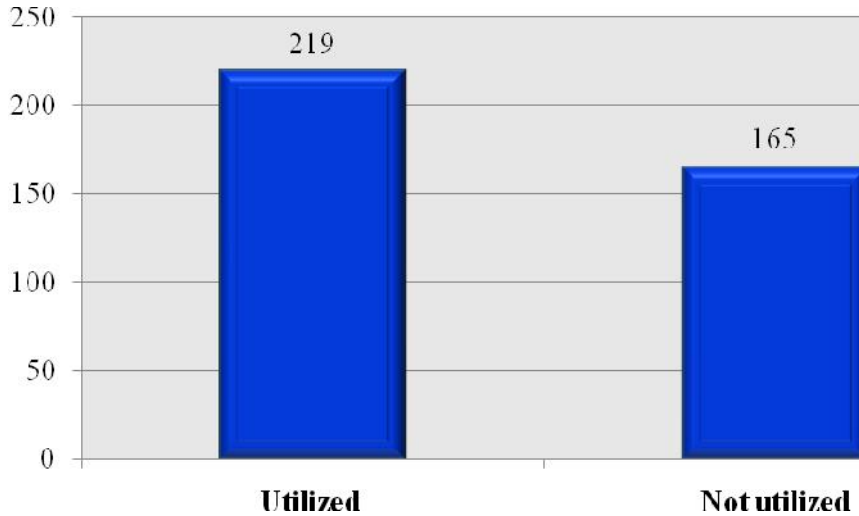


Figure 1: The level of maternal health care services utilization among women of reproductive age in Kakindo sub-county

The results in figure1 show the level of maternal health care services utilization among women of reproductive age in Kakindo sub-county, Kakumiro District, Uganda. The results were obtained by scoring the responses of the women based on three key indicators of maternal health services: these were attendance of 4 ANC visits (Score = 5), delivery in a health care facility (Score = 5) and PNC attendance after birth (Score 5). A mother was considered as having utilized maternal health services if she scored an overall score of 15. Basing on this scale, it was found that slightly above half of the women had utilized these services (n = 219, 57%).

Perspectives on the utilization of maternal health services including: antenatal care, delivery care and postnatal care services had almost the same view points from the key informants. A majority of the key informants applauded the attendance of antenatal care especially the first visit but raised issues with the attendance of the proceeding visits; health facility deliveries

were mentioned as having improved over the last two years whereas postnatal care was mentioned as still being low and requiring some more efforts.

Antenatal care

“Antenatal care attendance is very high in our sub-county, I can say is more than 90% for that first visit at least, the only challenge we still have are the third and fourth visits, these ones are not well attended by the pregnant women”. I think the community health workers are doing good work educating the women out there in the community about the importance of coming here to be checked”(KI, Facility in charge)

“I think if not all, almost all pregnant women seek health facility based care at least once during pregnancy, but few continue going there at least four times”(KI,CHW representative)

Delivery care

“I can affirm that health facility deliveries have recently greatly improved among the women in this sub county, these days they do not deliver so much at home”(KI, service provider)

“When we go to those communities, we endeavor to teach and educate the pregnant women on the importance of delivery by a skilled birth attendant and we also teach about the dangers of delivering under care of traditional birth attendants, so I believe that health facility deliveries have increased and are actually high in this area” (KI, VHT representative)

Postnatal care

“For those how deliver in the health facility they get immediate postnatal care but remember they need to come back after 6 days, most of them do not come back, generally PNC use is still a challenge” (KI, Service provider)

4.3 The maternal health care activities done by community health workers

4.3a: The maternal health care activities done by community health workers

The activities focusing on Health education and general counseling that are done by community health workers contributing to the utilisation of maternal health services in line with; Antenatal care, Skilled Birth attendance in deliveries and post natal care are in table 5.

Table 5: The maternal health care activities done by community health workers

| Activity | Strongly agree | Agree | Neutral | Disagree | Strongly Disagree |
|--|----------------|------------|-----------|------------|-------------------|
| Educated on child birth and its complications in this area | 128(33.3%) | 81(21.1%) | 5(1.3%) | 148(38.5%) | 22(5.7%) |
| Health education on how to prepare for birth | 80(20.8%) | 104(27.1%) | 8(2.1%) | 143(37.2%) | 49(12.8%) |
| Education on the importance of giving birth in a health facility | 80(20.8%) | 121(31.5%) | 6(1.6%) | 106(27.6%) | 71(18.5%) |
| Health education on antenatal care and its importance | 104(27.1%) | 120(31.2%) | 7(1.8%) | 96(25.0%) | 57(14.8%) |
| Education about postnatal care services available after child birth | 56(14.6%) | 112(29.2%) | 17 (4.4%) | 158(41.1%) | 41(10.7%) |
| General counseling on how to manage the pregnancy period in terms of health seeking behavior | 160(41.7%) | 88(22.9%) | 6(1.6%) | 115(29.9%) | 15(3.9%) |

The results in table 5, show the activities of community health workers in Kakindo Sub County as reported by the women that participated in the study. The results obtained in this respect revealed that community Health workers had educated more than half of the women (n =209, 54.4%) on child birth and its complications in the area, exactly half of the women sampled in Kakindo sub county (n = 192, 50%) denied ever being educated on how to prepare for birth by a community health worker. Community health workers educating the women on the importance of giving birth in a health facility was acknowledged by majority of the women (n = 201, 52.3%), and so was education ofthe women on antenatal care and its importance (n = 224, 58.3%).

Nevertheless, majority of the mothers disagreed with the statement that CHWs had come to their area and educated them about postnatal care services available after child birth (n = 199, 51.8%). More than half of the women reported that they had been offered general counseling by the community health workers on how to manage the pregnancy period in terms of health seeking behavior (n = 288, 64.6%).

One of the maternal health service providers at Kakindo health center IV reckoned the services of the CHWs on improving maternal health as follows:

“There is a very big change because now women buy accessories for delivery (apron, baby linen) to use in a health facility, and when you interface with them for a second visit and ask these women to show you the accessories she can show you, what you told her to buy” (KI, Male service provider, urban)

Another one added that; *“Men generally would not to take it seriously but as of now they prepare, and because the community health workers teach them before delivery they save or work hard so that they can buy what is necessary during delivery”*. (KI, Female service provider, Kakindo health center IV)

4.3b: The maternal health care activities done by community health workers

The activities focusing on registration, health promotion, referral of mothers and assessment of danger signs that are done by community health workers contributing to the utilisation of maternal health services in line with; Antenatal care, Skilled Birth attendance in deliveries and post natal care are in table 6.

Table 6: The maternal health care activities done by community health workers

| Activity | Strongly agree | Agree | Neutral | Disagree | Strongly Disagree |
|--|-----------------------|--------------|----------------|-----------------|--------------------------|
| Registration of all women who are pregnant and encouraging them to go to health facilities for care | 96(25.0%) | 80(20.8%) | 8(2.1%) | 151(39.3%) | 49(12.8%) |
| Promotion of healthy behaviors during pregnancy and the postpartum period | 54(14.1%) | 138(35.9%) | 15(3.9%) | 121(31.5%) | 56(14.6%) |
| Accompanying of women in labor from their homes to the health facility | 32(8.3%) | 40(10.4%) | 9(2.3%) | 184(47.9%) | 119(31.0%) |
| Home visits to mothers who have just given birth early enough to identify danger signs and refer them to health facilities as needed | 48(12.5%) | 73(19.0%) | 14(3.6%) | 151(39.3%) | 98(25.5%) |
| Holding of general health education sessions with all women and educate them about the advantages and disadvantages of TBAs | 120(31.2%) | 32(8.3%) | 24(6.2%) | 180(46.9%) | 28(7.3%) |

About half of the women sampled mentioned that they had never been registered and encouraging to go to health facilities for care during pregnancy by the community health workers (n = 200, 52%), whereas the same proportion (n = 192, 50%) agreed that CHWs had been to their area promoting healthy behaviors during pregnancy and the postpartum period.

More than three quarters of the women in Kakindo sub-county disagreed that CHWs in the area accompanied women in labor from their homes to the health facility (n = 303, 78.9%), and still majority disagreed that CHWs in Kakindo sub-county visited mothers who had just given birth early enough to identify danger signs and refer them to health facilities as needed (n = 249, 64.8%). Disagreements on the activity of holding general health education sessions with all women and educate them about the advantages and disadvantages of TBAs by community health workers were common among majority of the women (n = 208, 54.2%).

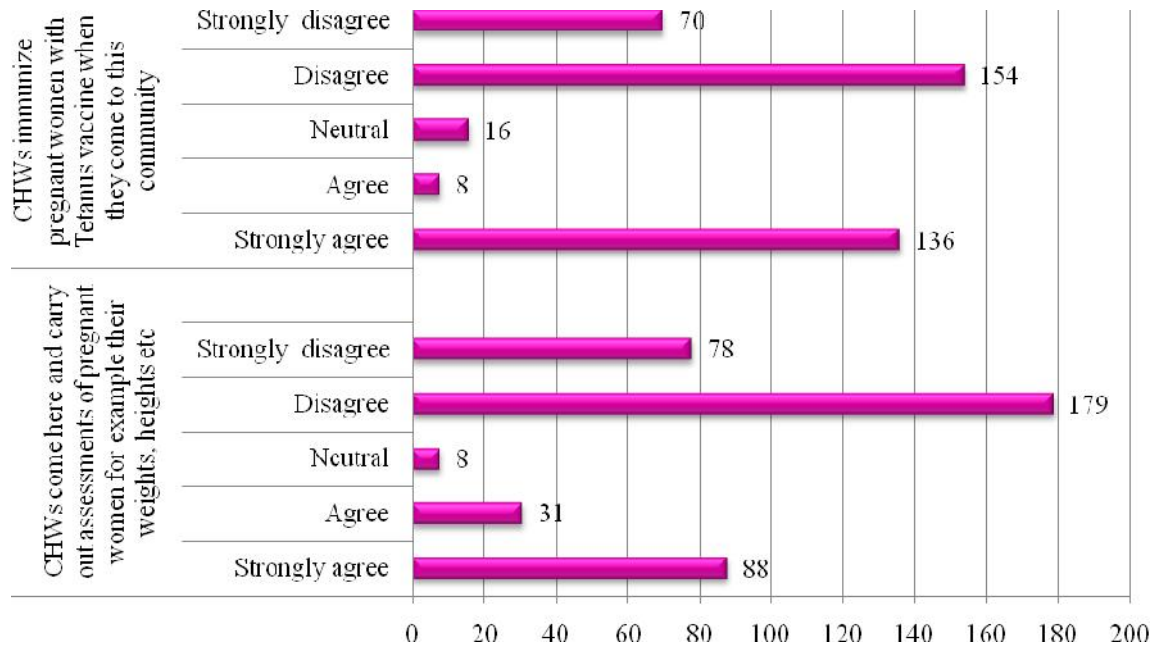


Figure 2: Assessments of pregnant women and immunization of pregnant women

The results in the figure 2, show that majority of the women in Kakindo Sub County denied being immunized pregnant women with the tetanus vaccine when they came to the community (n = 224, 58.3%), and also disagreed to the statement that community health workers carried out assessments of the women like weight and height (n = 257, 66.9%).

When asked about the provision of services including immunizations of pregnant women and their assessment, the key informant mentioned that these activities were not fully carried out by the CHWs because of reasons ranging from systemic ones like the lack of supplies to individual ones attributed to the CHWs themselves.

“Community health workers actually have to do those things [immunization and assessment] but the issues is sometimes they are not supplied to them, now what do you expect them to use, those who receive go and assess but majority do not” (KI, VHT team leader)

She added that;

“Most of the VHTs we have in this sub county have not been trained enough to handle some of those things [immunization of pregnant women and assessment] so even if the supplies were to be there, the training is still low, so the CHWs can execute those activities”

The key informants were also probed to mention some challenges they faced when executing their duties in the community. The following excerpts stood out.

“Looking at the scenario, it is a bit complicated, just like a family talk or a friendly talk as CHWs disseminate information, and the barriers could be the condition they are execution of tasks may not be favourable; some families may seem better off than the volunteer, and they may look at the information they are giving as not worth it regarding to the social status or education status”. (KI, Member, District Health Team)

Many CHWs reported disappointment with the limited possibilities for trainings. Refresher trainings on maternal health were reported to lack practical elements on delivery. Official trainings for upgrading were also a source of disappointment for many CHWs. The selection process was not clear, the entrance exams considered too difficult and promotion after attending the training was not guaranteed.

“Even if we get education opportunity and make improvements in our level, there is no difference to me. Because the CHW who upgrades her status will again be assigned in the [same] parish, no transfer is given to her, just as if she had not joined the school.” (KI, VHT leader)

“Training of VHT is through the district partners but this is not standardized trainings are sometimes different—without a properly laid out approach”.(KI, Facility in charge)

“The Ministry also apart from implementing partners should provide resources for refresher trainings because if a VHT was trained 3 years ago, things are changing. Something should be done in trainings”.(KI, VHT leader, Kakindo Sub County)

“VHTs should have refresher trainings to boost them to carry out their work most efficiently”, (KI, District Community Focal person)

4.4: The contribution of CHW activities to the utilization of maternal health service utilization among women

4.4a: The contribution of CHW activities to the utilization of maternal health services

The utilisation of maternal health services as result of the contribution of community health workers is shown in the cross tabulation for mothers, who utilized and those who never utilized the maternal health services along with indicated chi-square and p-values with respect to: health education on child birth and its complications, on how to prepare for birth and the importance of giving in a health facility in table 7.

Table 7: The contribution of CHW activities to the utilization of maternal health services

| Utilization of services | | | | | |
|---|-----------|--------------|----------------|----|--------|
| Activity | Utilized | Not utilized | X ² | df | pvalue |
| Community Health workers have educated you on child birth and its complications in this area | | | | | |
| Strongly agree | 68(53.1%) | 60(46.9%) | 7.077 | 4 | 0.132 |
| Agree | 39(48.1%) | 42(51.9%) | | | |
| Neutral | 3(60.0%) | 2(40.0%) | | | |
| Disagree | 94(63.5%) | 54(36.5%) | | | |
| Strongly Disagree | 15(68.2%) | 7(31.8%) | | | |
| CHW have come here and educated you on how to prepare for birth | | | | | |
| Strongly agree | 43(53.8%) | 37(46.2%) | 6.573 | 4 | 0.161 |
| Agree | 51(49.0%) | 53(51.0%) | | | |
| Neutral | 6(75.0%) | 2(25.0%) | | | |
| Disagree | 85(59.4%) | 58(40.6%) | | | |
| Strongly Disagree | 33(67.3%) | 16(32.7%) | | | |
| CHW have come here and educated you on the importance of giving birth in a health facility | | | | | |
| Strongly agree | 43(53.8%) | 37(46.2%) | 8.533 | 4 | 0.074 |
| Agree | 62(51.2%) | 59(48.8%) | | | |
| Neutral | 3(50.0%) | 3(50.0%) | | | |
| Disagree | 59(55.7%) | 47(44.3%) | | | |
| Strongly Disagree | 51(71.8%) | 20(28.2%) | | | |

The results in the table 7, show that CHW activities including: education of the women on child birth and its complications, education of women on how to prepare for birth, and education of the women on the importance of giving birth in a health facility did not have a statistically significant contribution on the utilization of maternal health services among women in Kakindo sub county. The p values of the Bivariate relationships between these activities and maternal health service utilization are all above the alpha level of 0.05 that is ($X^2 = 7.077$, $p = 0.132$), ($X^2 = 6.573$, $p = 0.161$) and ($X^2 = 8.533$, $p = 0.074$) respectively.

4.4b: The contribution of community health worker activities to the utilization of maternal health services

The contribution of community health workers to the utilisation of maternal health services is shown in the cross tabulation for mothers, who utilized and those who never utilized the maternal health services along with indicated chi-square and p-values with respect to: education on ANC, Post natal care, counseling on health seeking behaviors, registering of pregnant mothers and health promotion in table 7.

Table 8: The contribution of community health worker activities to the utilization of maternal health services

| Activity | Utilization of services | | | df | p value |
|--|-------------------------|--------------|----------------|----|---------|
| | Utilized | Not utilized | X ² | | |
| CHW have come here and educated you on antenatal care and its importance | | | | | |
| Strongly agree | 62(59.6%) | 42(40.4%) | 18.290 | 4 | 0.001** |
| Agree | 60(50.0%) | 60(50.0%) | | | |
| Neutral | 4(57.1%) | 3(42.9%) | | | |
| Disagree | 47(49.0%) | 49(51.0%) | | | |
| Strongly Disagree | 46(80.7%) | 11(19.3%) | | | |
| CHWs have come here and educated you about postnatal care services available after child birth | | | | | |
| Strongly agree | 32(57.1%) | 24(42.9%) | 10.835 | 4 | 0.028** |
| Agree | 59(52.7%) | 53(47.3%) | | | |
| Neutral | 9(52.9%) | 8(47.1%) | | | |
| Disagree | 85(53.8%) | 73(46.2%) | | | |
| Strongly Disagree | 33(80.5%) | 8(19.5%) | | | |
| CHWs have offered you general counseling on how to manage the pregnancy period in terms of health seeking behavior | | | | | |
| Strongly agree | 82(51.2%) | 78(48.8%) | 9.156 | 4 | 0.057 |
| Agree | 45(51.1%) | 43(48.9%) | | | |
| Neutral | 4(66.7%) | 2(33.3%) | | | |
| Disagree | 78(67.8%) | 37(32.2%) | | | |
| Strongly Disagree | 9(60.0%) | 6(40.0%) | | | |
| CHWs have been to this area registering all women who are pregnant and encouraging them to go to health facilities for care | | | | | |
| Strongly agree | 54(56.2%) | 42(43.8%) | 8.269 | 4 | 0.071 |
| Agree | 35(43.8%) | 45(56.2%) | | | |
| Neutral | 5(62.5%) | 3(37.5%) | | | |
| Disagree | 91(60.3%) | 60(39.7%) | | | |
| Strongly Disagree | 33(67.3%) | 16(32.7%) | | | |
| CHWs have been here promoting healthy behaviors during pregnancy and the postpartum period | | | | | |
| Strongly agree | 38(70.4%) | 16(29.6%) | 10.092 | 4 | 0.039** |
| Agree | 86(62.3%) | 52(37.7%) | | | |
| Neutral | 8(53.3%) | 7(46.7%) | | | |
| Disagree | 60(49.6%) | 61(50.4%) | | | |
| Strongly Disagree | 27(48.2%) | 29(51.8%) | | | |
| CHWs in this area accompany women in labor from their homes to the health facility | | | | | |
| Strongly agree | 25(78.1%) | 7(21.9%) | 13.220 | 4 | 0.010** |
| Agree | 20(50.0%) | 20(50.0%) | | | |
| Neutral | 4(44.4%) | 5(55.6%) | | | |
| Disagree | 93(50.5%) | 91(49.5%) | | | |
| Strongly Disagree | 77(64.7%) | 42(35.3%) | | | |

The results in the table above show that four community health worker activities had a statistically significant contribution to the utilization of maternal health services. They are; education of women on antenatal care and its importance ($X^2 = 18.290$, $p = 0.001$), education

of the women about postnatal care services available after child birth ($X^2 = 10.835$, $p = 0.028$), promotion of healthy behaviors during pregnancy and the postpartum period ($X^2 = 10.092$, $p = 0.039$), and the accompaniment of women in labor from their homes to the health facility ($X^2 = 13.220$, $p = 0.010$).

4.4c: The contribution of community health worker activities to the utilization of maternal health services

The analysis for the relationship between CHW activities and maternal health service utilisation among women including: Post natal visits early enough to identify danger signs and referral to health facilities, education sessions on the disadvantages and advantages of TBAs, assessment of pregnant mothers and immunization with tetanus toxoid is presented in table 8.

Table 9: The contribution of community health worker activities to the utilization of maternal health services

| Utilization of services | | | | | |
|---|-----------|--------------|----------------|----|---------|
| Activity | Utilized | Not utilized | X ² | df | p value |
| CHWs visits mothers who have just gave birth early enough to identify danger signs and refer them to health facilities as needed | | | | | |
| Strongly agree | 28(58.3%) | 20(41.7%) | 16.881 | 4 | 0.002** |
| Agree | 36(49.3%) | 37(50.7%) | | | |
| Neutral | 9(64.3%) | 5(35.7%) | | | |
| Disagree | 74(49.0%) | 77(51.0%) | | | |
| Strongly Disagree | 72(73.5%) | 26(26.5%) | | | |
| CHWs hold general health education sessions with all women and educate them about the advantages and disadvantages of TBAs | | | | | |
| Strongly agree | 68(56.7%) | 52(43.3%) | 11.001 | 4 | 0.027** |
| Agree | 16(50.0%) | 16(50.0%) | | | |
| Neutral | 12(50.0%) | 12(50.0%) | | | |
| Disagree | 98(54.4%) | 82(45.6%) | | | |
| Strongly Disagree | 24(85.7%) | 4(14.3%) | | | |
| CHWs come here and carry out assessments of pregnant women for example their weights, heights etc | | | | | |
| Strongly agree | 49(55.7%) | 39(44.3%) | 14.514 | 4 | 0.006** |
| Agree | 15(48.4%) | 16(51.6%) | | | |
| Neutral | 4(50.0%) | 4(50.0%) | | | |
| Disagree | 92(51.4%) | 87(48.6%) | | | |
| Strongly Disagree | 59(75.6%) | 19(24.4%) | | | |
| CHWs immunize pregnant women with Tetanus vaccine when they come to this community | | | | | |
| Strongly agree | 73(53.7%) | 63(46.3%) | 6.008 | 4 | 0.199 |
| Agree | 5(62.5%) | 3(37.5%) | | | |
| Neutral | 7(43.8%) | 9(56.2%) | | | |
| Disagree | 98(63.6%) | 56(36.4%) | | | |
| Strongly Disagree | 35(50.0%) | 35(50.0%) | | | |

In table 8, it can be seen that three community health worker activities aligned towards maternal health had a statistically significant influence on the utilization of maternal health services. These are; visits of mothers who have just gave birth early enough to identify danger signs and refer them to health facilities as needed ($X^2 = 16.881$, $p = 0.002$), holding of general health education sessions with all women and educate them about the advantages and

disadvantages of TBAs ($X^2 = 11.001$, $p = 0.027$), and assessments of pregnant women for example their weights, heights ($X^2 = 15.514$, $p = 0.006$).

4.4 d: Analysis for the contribution of CHW activities to the utilization of maternal health services

A multivariate analysis of CHW activities to the contribution of the utilisation of maternal health services showed that ,the most significant activities were: education on antenatal care and its importance, education on post natal care services available after child birth, promotion of health behaviours during pregnancy and post partum period, accompanying women in labour from their homes to the health facility, post natal visits to identify danger signs and referral assistance, general health education sessions and the physical assessment of pregnant mothers(table 9).

Table 10: Binary logistic regression analysis for the contribution of CHW activities to the utilization of maternal health services

| Activity | S.E. | Sig. | AOR | 95.0% EXP(B) Lower | C.I.for Upper |
|---|-------------|-------------|------------|-----------------------------------|--------------------------|
| CHW have come here and educated you on antenatal care and its importance | | | | | |
| Strongly agree | .690 | .026 | 4.655 | 1.203 | 18.005 |
| Agree | .590 | .005 | 5.208 | 1.639 | 16.544 |
| Neutral | .918 | .207 | 3.188 | .527 | 19.271 |
| Disagree | .532 | .010 | 3.946 | 1.390 | 11.204 |
| Strongly Disagree | | | 1.000 | | |
| CHWs have come here and educated you about postnatal care services available after child birth | | | | | |
| Strongly agree | .794 | .771 | .793 | .167 | 3.760 |
| Agree | .704 | .878 | .898 | .226 | 3.568 |
| Neutral | .813 | .918 | .919 | .187 | 4.523 |
| Disagree | .590 | .798 | 1.163 | .366 | 3.700 |
| Strongly Disagree | | | 1.000 | | |
| CHWs have been here promoting healthy behaviors during pregnancy and the postpartum period | | | | | |
| Strongly agree | .403 | .949 | 1.026 | .466 | 2.262 |
| Agree | .379 | .143 | .574 | .273 | 1.206 |
| Neutral | .652 | .183 | .420 | .117 | 1.506 |
| Disagree | .378 | .849 | .931 | .444 | 1.952 |
| Strongly Disagree | | | 1.000 | | |
| CHWs in this area accompany women in labor from their homes to the health facility | | | | | |
| Strongly agree | .449 | .670 | 1.211 | .502 | 2.922 |
| Agree | .440 | .023 | 2.723 | 1.150 | 6.451 |
| Neutral | .739 | .287 | 2.196 | .516 | 9.341 |
| Disagree | .318 | .045 | 1.895 | 1.015 | 3.537 |
| Strongly Disagree | | | 1.000 | | |
| CHWs visits mothers who have just gave birth early enough to identify danger signs and refer them to health facilities as needed | | | | | |
| Strongly agree | .460 | .504 | 1.360 | .552 | 3.348 |
| Agree | .419 | .282 | 1.569 | .690 | 3.566 |
| Neutral | .671 | .798 | .842 | .226 | 3.136 |
| Disagree | .338 | .092 | 1.768 | .912 | 3.429 |
| Strongly Disagree | | | 1.000 | | |
| CHWs hold general health education sessions with all women and educate them about the advantages and disadvantages of TBAs | | | | | |
| Strongly agree | .647 | .057 | 3.432 | .966 | 12.191 |
| Agree | .749 | .054 | 4.241 | .977 | 18.399 |
| Neutral | .749 | .061 | 4.069 | .938 | 17.656 |
| Disagree | .619 | .056 | 3.269 | .971 | 11.000 |
| Strongly Disagree | | | 1.000 | | |
| CHWs come here and carry out assessments of pregnant women for example their weights, heights etc | | | | | |

| | | | | | |
|-------------------|------|------|-------|-------|--------|
| Strongly agree | .331 | .033 | 2.026 | 1.060 | 3.874 |
| Agree | .439 | .023 | 2.715 | 1.149 | 6.416 |
| Neutral | .751 | .213 | 2.545 | .585 | 11.082 |
| Disagree | .293 | .004 | 2.302 | 1.297 | 4.086 |
| Strongly Disagree | | | 1.000 | | |

The results table 9 shows, the logistic regression results of the variables that were statistically significant for the study. The results of this study show that women who agreed to having been educated on antenatal care and its importance by community health workers were five times more likely to utilize all the maternal health services compared to the non educated ones (OR = 5.208, CI = 1.639 - 16.544). There was an inverse relationship between community health worker education of the women about postnatal care services available after child birth and maternal health service utilization; the women who were taught about PNC by the CHWs were less likely to utilize the maternal health services (OR = 0.793, CI = 0.167 – 3.760) compared to those who were not taught by the CHWs.

The women who strongly agreed that CHWs had promoted healthy behaviors during pregnancy and the postpartum period were more likely to utilize maternal health services (OR = 1.026, CI = 0.466 – 2.262). Women who were accompanied by CHWs during labor from their homes to the health facility were also more likely to utilize the maternal health services (OR = 3.933) and so were the women who were visited by CHWs after giving birth early enough to identify danger signs and refer them to health facilities as needed (OR = 2.9), and women for whom general health education sessions were held by the CHWs about the advantages and disadvantages of TBAs (OR = 7.6).The same also applied for women who were and assessed for weigh and height during pregnancy, they were four point seven times more likely to utilize maternal health services (OR = 4.7).

4.5: Summary of Key findings

4.5 a: Utilization of maternal health services

- I. All the women attended ANC, with the majority having initiation of ANC in the second trimester (226, 58.65%) and an average number of women attending the fourth ANC visit(153,36.8%).
- II. Most of the women had skilled birth attendance (349, 90.9%), with a minimum number of mothers booking for delivery 2 weeks to the time of birth of their children (88, 25.25%).
- III. A less number of mothers attended Post natal care after birth (155, 40.45%) and the number of mothers who attended the3 consecutive Post natal visits went on reducing.
- IV. Slightly above average of the mothers(219,57%) fully utilized maternal health services with contribution of the community health workers

4.5 b Maternal health services done by community health workers

- I. General counseling on how to manage the pregnancy period interms of health seeking was the most utilized maternal health service during the antenatal period done by community health workers(248,64.7%) as opposed to the less done activity of carrying out assessments(119,30.9%) in Antenatal care.
- II. Health education on birth and its complications and the importance of giving birth at the health facility was the highly accessed maternal services rendered by community health workers in Delivery services for the women (201, 52.3%).
- III. No maternal health service was highly rendered by community health workers in line with Post natal care as reported from the mothers.

4.5 c: Contribution of community health workers to the utilization of maternal health services among women.

- I. The Antenatal care activities done by community health workers that had a significant association with utilization of maternal health services were; education of the women on antenatal care and its importance($x^2=18.290$,p-value=0.001), assessment of mothers for Height($x^2=14.514$,p-value=0.006), Weight and education about the disadvantages and advantages of TBAs($x^2=11.001$,p-value=0.027),.
- II. For the skilled birth attendance and delivery at Health facilities, the activity done by community health workers for accompanying women to labour was significantly associated with the utilization of maternal health services among women($x^2=13.220$,p-value=0.010).
- III. In relation to Post natal care; education on the healthy behaviours during pregnancy and post partum period and education about Post natal care available after birth($x^2=10.835$, p-value=0.028) had a strong significant association with the utilization of maternal health services among mothers.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.0 Introduction

This chapter brings to the fore a discussion of each of the key findings of this study as obtained in each objective. Efforts have been made to compare and contrast the findings of this study and those of other studies where directly possible.

5.1 The level of maternal health care services utilization among women of reproductive age in Kakindo sub-county, Kakumiro District, Uganda

This study found that ANC attendance rate for the first visits was universal at 100%, this finding surpasses the national average of 94.6% (UBOS, 2012; MOH, 2012; WHO, 2010). The difference between the finding of this study and earlier studies is because this study was done in an area with a relatively high concentration of private clinics most of which were found to advertise as providing maternity services and top of this, there existed a public health center IV and other lower health facilities in the area hence there was high accessibility to health facilities in the area. Since the filter on ANC attendance was plainly about whether a woman had gone for antenatal care at any facility be it public or private, it resulted in all women reporting having gone at least once for the service. The very high first ANC attendance in this study is consistent with those in another study conducted in a rural district in Tanzania, which showed increased ANC booking following community engagement (Mushi, 2010).

However, divergent to the WHO recommendations, initiation of ANC visits was done in the second trimester by most of the women (52.7%). This finding has also been obtained by Birmeta (2013), Abor (2011), and Nisar (2003). This could be due to low knowledge and

awareness about the appropriate time of initiation of ANC among the women. On another negative note, majority of the women did not meet the recommendation of four ANC visits, with only about 39.8% attending the four visits, similar to the findings of Coyle (2002) and Signore (2011). This implies that although attendance of the first ANC visit is universal, the subsequent visits are not attended at the same level by the pregnant women in Kakindo sub-county and this therefore poses a risk of pregnancy and childbirth related complications developing among them since their pregnancies are not regularly monitored by skilled service providers.

The presence of a trained health-care worker during delivery is crucial in reducing maternal deaths whereby estimates between 13% – 33% of maternal deaths could be averted by the presence of a skilled birth attendant (Graham 2001, UNICEF 2003, De Bernis 2003). Skilled birth attendance is also correlated with lower maternal mortality rates in SSA (Buor 2004).

Conditions necessary for a safe delivery include a skilled attendant at every birth such as a midwife, nurse trained as a midwife or a Doctor (Mpembeni et al 2007). Tracking the national effort towards safe motherhood is best done by ensuring delivery assisted by skilled providers as one of the most important and proven intervention in reducing maternal mortality and also SDG Number 3 WHO(2009). This study showed that majority of the women sampled had been delivered by a skilled birth attendant in a health facility (90.9%). This is variant to numerous earlier findings including the Ethiopia demographic and health Survey (2011), Bell (2003), Magoma (2010) in Tanzania and the WHO (2003), and even the MOH in Uganda (2012) and even the DHS (2015), where lower health facility deliveries were reported.

The relatively high health facility deliveries in this study are apparent because of a number of reasons; given the universal ANC attendance rate (100%) it is a possibility that all women in

this study had been educated at the first visit about the importance of delivering a child in a health facility setting and its benefits to the mother and baby since it is during this visit that such health education is done. This could have therefore fostered behavioural change among the mothers to extent that even if they did not attend the subsequent visits, they were able to return for delivery in the facility.

The increment in SBA observed in this study might be related to the satisfaction some mothers had on the quality of ANC they received in addition to factors related to increased access. It is also important to note that the level of skilled birth attendance among the women in this study is higher than the reported national average of 54% (WHO, 2010). This could be related to the perceived severity of potential complications that could arise due to child birth for an already physically disabled woman; such perceptions make them seek SBA more than the non disabled women. Despite the fairly high skilled birth attendance among the women in Kakindosub- county, a few of them had booked for delivery at any health facility at least two weeks to the birth of their children, contrary to the recommendation by the World Health Organization. This is symbolic of low birth preparedness among the disabled women a situation that could be brought about by stigma and socio economic barriers at community level.

As for postnatal care service utilization, the greater part of the women had not gone for postnatal care after child birth, confirming that PNC remains highly neglected (WHO, 2008), poorly utilized (Warren, 2008), inadequately recognized (WHO, 2006), and is among the weakest of all reproductive, maternal, and child health interventions (Sines, 2007). However, the proportion in this study was slightly higher than the overall postnatal care utilization rate of 13% observed in most parts of Africa (World Health Organization, 2008), In Nepal, 19% of

women attend postnatal care within 48 hours of delivery (Dhakal, 2007). Conversely, the PNC rate reported in the 2008–2009 Kenyan Demographic Health Survey (7.7%) was much lower than that in the present study.

Generally, the measured level of maternal health service utilization in this study was found to be average however with approximately 6 out of every ten mother utilizing the three major maternal health services (ANC, SBA, and PNC). This average level arose because of the computation of a composite level involving all the three services at once, whereby the very low utilization of the four ANC visits and postnatal care services had negative effects on the overall utilization of maternal health services.

5.2 The maternal health care activities done by community health workers

The activities of CHWs rotate around health education, mobilization, health promotion, registration and referrals. The findings of this study revealed that most of the CHW activities were being executed by the health workers this is to a limited extent, given that for each activity reported to having been done, only about half of the study population of the women acknowledged the CHW contribution in the community. For instance the results showed that CHWs had educated about half of the women on child birth and its complications, the importance of giving birth in a health facility and antenatal care and its importance. This is dissimilar to the findings to the findings by Bhutta (2011) and Kimbugwe *et al* (2014) where up to 80% of the respondents in those studies reported having been educated by CHWs. The findings of this study point to a gap in the one of the main activities that has to be carried out by the community health workers (health education) and this could have contributed to the average overall utilization of maternal health services.

Further evidence of a gap in the activity of health education of the pregnant women by CHWs was based on the findings that exactly half of the women sampled denied ever being educated

on how to prepare for birth by a community health worker. A majority of the mothers disagreed with the statement that CHWs had come to their area and educated them about postnatal care services available after child birth and further still they disagreed on the activity of holding general health education sessions and about the advantages and disadvantages of TBAs. These findings are still contrary to findings from other settings in many countries where a CHW system exists (Jaskiewicz, 2012; Ergano, 2012; Negusse, 2007; Quayyum, 2013).

The seemingly low execution of CHW activities related to the education of women on essentials of maternal health like; PNC and birth preparedness could be related to among other factors; issues to do with the facilitation and support of the CHWs by the authorities (Ministry of Health) in form of finances and training which have in the past been reported to be low (MOH, 2015). Without the necessary training, the CHWs are not empowered to educate the women and without the necessary financial facilitation, the CHWs cannot cover substantial areas in the communities to hold the education sessions.

The results of this study also showed that counseling services were somewhat widely provided by the CHWs to the pregnant women. More than half of the women reported that they had been offered general counseling by the CHWs on how to manage the pregnancy period in terms of health seeking behavior. This is similar to the findings by Mushi (2010) in Mtwara Rural District in Tanzania. Counseling as opposed to health education focuses on giving advice and psychosocial support to women, and this has been reckoned as being one of the main methods of perpetuating behavior change among patients (Goujard, 2003). The counseling activities done by the CHWs could have therefore contributed to positive health seeking behaviors of the women in the study.

According to the Ministry of Health ,Road map for accelerating the reduction of maternal and neonatal mortality and morbidity in Uganda(2015), community health workers are ought to make follow up on pregnant women and post natal mothers as an responsibility for them to assist in preventing mothers from delivering at home and reduce on the number of women attended to by unqualified personnel during labour leading to causal effect to a reduction in maternal morbidity and mortality. This can be achieved in the course of registering all pregnant women and keeping track of them until they deliver. It is considered that, they have a duty to occasionally conduct village meeting with pregnant women along with their husbands during which, antenatal care attendance is encouraged and information concerning family planning is shared with them. However, contrary to this, the findings of this study show that about half of the women sampled mentioned that they had never been registered and encouraged to go to health facilities for care during pregnancy by the CHWs. This means that the CHWs never kept track or followed up the pregnant women in the communities.

Kimbugwe *et al*, (2014) points out that, home visiting of individuals is one of the major roles executed by the CHWs. Aiming at the following objective: finding out the health statuses of individuals in these households, delivering health education and promotion services with much importance on sanitation, delivering medications as well as identifying sick individuals who are then referred to health facilities. It is during these home visits that information pertaining to households and individuals in the community is acquired and recorded in the health management information systems report forms; they termed these visits “community walks”. However the findings of this study showed that more than three quarters of the women in Kakindo sub-county disagreed that CHWs in the area accompanied women in labor from their homes to the health facility and still majority disagreed that CHWs in Kakindo sub-county visited mothers who had just given birth early enough to identify danger

signs and refer them to health facilities as needed. These findings imply that that the activity of home visits was not done by the CHWs, and this could have hampered follow up and utilization of especially skilled birth attendance and postnatal care.

More than half of the women in Kakindo sub-county (n=224,58.33%) denied being immunized pregnant women with the tetanus vaccine when they came to the community and also disagreed to the statement that community health workers carried out assessments of the women like weight and height. These two activities require the supply of commodities, accessories and consumables for example syringes and vaccines for immunization and weighing scales plus height boards or meter rules for anthropometric assessments. The lack of these activities could have affected the execution of these activities in the community by the CHWs.

5.3 The contribution of CHW activities to the utilization of maternal health services

Like other studies (Rosato, 2008; Midhet, 2010; Kendrick, 2000; Medhanyie, 2012; Okeibunor, 2011) the results of this study showed that there was a relationship between CHW activities and utilization of maternal health services (Simkhada, 2008).

There were a total of thirteen activities of CHWs that the mothers were prompted on to find out if they were being done or not. Out the thirteen assessed, it was found that only seven of them had a statistically significant contribution to the utilization of maternal health services. This implied that CHWs activities have a literally modest contribution to the utilization of maternal health services among women in Kakindo sub-county.

The results of this study show that women who agreed to having been educated on antenatal care and its importance by community health workers were five times more likely to utilize all the maternal health services compared to the non educated ones. However, there was an inverse relationship between community health worker education of the women about

postnatal care services available after child birth and maternal health service utilization; the women who were taught about PNC by the CHWs were less likely to utilize the maternal health services compared to those who were not taught by the CHWs. Education about antenatal care basically includes teaching women about the importance of going to hospital or a health facility during pregnancy, the importance of taking iron tablets, and how to care for one's self during pregnancy.

This information is regarded as easy to deliver (Sanjel, 2012) to the extent that a woman finds it imperative to go for ANC during pregnancy; this explains the universal coverage of the first visit of ANC shown in this study. Further still, it is possible that the CHWs hinted on the importance of attending other maternal health services that follow the first visit of ANC, and so the low turn up in especially the fourth visit of ANC and PNC could have been influenced by other confounding factors like socio economic or demographic factors of the women.

The inverse relationship observed however between education on PNC by CHWs and the utilization of maternal health services could be related to the content delivered about PNC by the community health workers. This means that the CHWs did not convince the women they taught about PNC and as a result they did not see a need to go for it because the content taught to them did not probably perpetuate behavior change among them. For those who were not taught about PNC, they probably picked from what was taught during ANC and also Health information from the Health workers at the time of skilled birth assistance leading to the PNC visits out of good hope for better health.

Health promotion is the process that enables people to increase control over their health and also improve on it. It is a process that moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions. Health promotion addresses health determinants such as income, housing, food security, employment, and quality working conditions. In so doing it empowers people to take control of their own health and to mitigate

some barriers to health access, and in the case of women, barriers to utilizing maternal health services. This explains why the women who strongly agreed that CHWs had promoted healthy behaviors during pregnancy and the postpartum period were more likely to utilize maternal health services

Women who were accompanied by CHWs during labor from their homes to the health facility were also more likely to utilize the maternal health services and so were the women who were visited by CHWs after giving birth early enough to identify danger signs and refer them to health facilities as needed. These two activities are inter-related in a sense that both bear an important component of referral of emergency cases by CHWs as mandated by the ministry of health. Referrals at community level increase access to health facility based care and as such increase utilization of the services. In a positive comparison with WHO/GHWA report (16) 2003, the interface between the CHW program and the formal health is important while focusing on engagement and support from higher health facilities. When the formal health systems are left out on supervising the CHWs in program planning or lack of understanding of CHW concept, the program will fail and access to utilisation of health services like; maternal health will be low. The proper linkages between CHWs and the formal health system need to be sustained right from onset of CHW programmes.

Women for whom general health education sessions were held by the CHWs about the advantages and disadvantages of TBAs were seven times more likely to utilize maternal health services. Traditional Birth Attendants are at the helm of birth attendance and child deliveries at community level in many districts in Uganda and contributed to the low skilled birth attendances in many of the districts. Therefore, educating the women on the merits and demerits of the TBAs enables the women to make informed choices of delivering in a health

facility since the demerits actually outweigh the merits of seeking TBA services. This is the reason as to why the level of skilled birth attendance in Kakindo was higher than the national average and the level in many other areas in the country.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

In this chapter, the researcher presents the conclusions of the study based on the study findings from each of the objectives. Recommendations are also given in this chapter.

6.1 The level of maternal health services utilisation

The measured level of maternal health service utilization in this study was found to be average however with approximately 6 out of every ten mother utilizing the three major maternal health services (ANC, SBA, and PNC).

6.2: The maternal health care activities done by CHWs

Seven CHW activities significantly contribute to the utilization of maternal health services among women in Kakindo sub-county. They are; education of women on antenatal care and its importance($\chi^2=18.290, p\text{-value}=0.001$), education of the women about postnatal care services available after child birth($\chi^2=10.835, p\text{-value}=0.028$), promotion of healthy behaviors during pregnancy and the postpartum period($\chi^2=10.092, p\text{-value}=0.039$), and the accompaniment of women in labor from their homes to the health facility($\chi^2=13.220, p\text{-value}=0.010$), visits of mothers who have just gave birth early enough to identify danger signs and refer them to health facilities as needed($\chi^2=16.881, p\text{-value}=0.002$), holding of general health education sessions with all women and educate them about the advantages and disadvantages of TBAs($\chi^2=11.001, p\text{-value}=0.027$), and assessments of pregnant women for example their weights, heights($\chi^2=14.514, p\text{-value}=0.006$),...

6.1.3: The contribution of CHW activities to the utilisation of maternal health services

Of the seven CHW activities, which were more associated with utilisation of maternal health services among the women in the study. They were linked as follows: women educated on ANC were five times more likely to utilize maternal health services(AOR=5.208,CI:1.639-16.544), general education sessions with all women at four times(AOR=4.241,CI:0.977-18.399), assessment of pregnant mothers at two times more(AOR=2.715,CI:1.149-6.416), CHWs accompanying mothers to labour at three times(AOR=2.723,CI:1.150-6.451), visiting post partum mothers at two times and also promoting healthy behaviours and education on post natal care being more likely to utilize maternal health services among women in Kakindo sub-county

6.2 Recommendations

The Ministry of Health, Uganda has to formulate a guideline which will explicitly stipulate range of tasks the CHWs should play, how and who should provide supervision so as to increase the CHW effectiveness. This will enable the CHWs to perform maternal health tasks that are within their mandate diligently.

Kakumiro District Health Services need to deploy an adequate number of CHWs and also the Ministry of Health, Uganda should ensure provision of supportive environment to CHWs, so that more pregnant women can be reached and ultimately improving maternal health services. The Ministry of Health, Uganda should reorganize training and refresher courses for CHWs to ensure quality, equity and equality in capacity building for all CHWs, and control over CHW activities.

Community health workers need to strengthen their home visit activities, this will enable them identify pregnant women who need emergency help and those who need to be accompanied to health facilities for child birth.

The CHWs should also emphasize the need for all mothers to attend all the four ANC visits along with sensitization about its importance among the pregnant women, more so CHWs should conduct follow up on this issue, to ensure that this is being done

Local community representatives including: LC representatives and civil society organizations must be involved in the design and planning of CHW programs to ensure that the program is pertinent to the local epidemiological, geographical and cultural realities and needs.

The Government of Uganda through the Ministry of Health and development partners with concern on CHW programs, financial support and engagement in planning, training and deployment. Planning should not only originate from the central level but also at the regional, district and municipal levels but it ought to promote decentralization in line with funding and operational decisions in the context of a set of uniform national policies.

CHWs should be formally introduced by the Ministry of Health, Uganda to the health system with formal staff in the public health facilities being availed with a clear delineation of their responsibilities and capabilities.

The Ministry of Health through the National Medical Stores needs to avail adequate resources through a proper and sustainable supply chain to ensure that CHWs are properly equipped, supplied and supported; these should include tetanus injections and mama kits.

The fourth ANC attendance and post natal care utilization were seemingly not impacted in the study, suggesting that more efforts are required for CHWs to appreciate the need for follow-up visits, and facilities to ensure retention of women after the first visit.

6.3 Areas for further research

From this study, it was clear that the fourth ANC visit and Post partum visits were not attended by the women at the health facilities; therefore an investigation ought to be carried out to find solutions to the low indicators for these maternal care services.

The same study needs to be carried out in other areas and Uganda at large with different socio-economical, geographic and ethnic factors to generalize the findings of this study.

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APPENDIX I: CONSENT FORM

Introduction

Hello, my name is Bigobe Isaac , Masters Student at International Health Sciences University, and I would like to invite you to take part in a study. In order to be sure that you understand what it means to be involved in this study, please read the information in this consent form. If you agree to participate, please sign this form at the place indicated. If there is anything in this consent form that you do not understand, please ask us and we shall explain.

Reasons for the Study

This study will assess the contribution of community health workers in the utilization of maternal health services among women in Bugangaizi West County Kakumiro District, Uganda

Your Part in the Study

The IHSU Ethics committee and district administration have also granted us permission to conduct the study. If you agree to participate in the study, I will request you to answer some questions that I will ask you. Your name will not be recorded in the questionnaire and/or discussion or demonstration notes. The questionnaires / discussion notes will be marked with numbers for purposes of data analysis only. The information you give will be confidential and nobody will associate it with you personally. Answering questions will take you about 10-15 minutes.

Possible Risks

We do not think that you will be at any risk by helping us with this study. Your responses will be confidential and will be used solely for quality improvement purposes.

Confidentiality

Participant's names shall not be used and instead provided with codes to protect their identity and not linked to the information in the study. No information about the participants shall be shared outside of the research team and information obtained shall be kept private.

Compensation

No incentive monetary or in kind shall be provided to the participants in the study and to the district officials in any form.

Risk

The information obtained may be sensitive and personal since it tackles personal professional habits and participants may feel uncomfortable talking about some topics. In this case explanations shall be provided to the participants and as such they shall be asked not to respond to such sensitive information if it makes them uncomfortable.

Benefits

No direct benefits shall be provided to the participants however an explanation that the information obtained is likely to help find out more on how to improve maternal health service utilization among mothers in this area through the efficient use of the VHT system

Informed consent

Participation shall be obtained by seeking informed consent and those that shall accept to participate in the study shall be interviewed. No pressure or coercion in deciding whether to participate or not. All participation shall be purely based on voluntary consent. There will be usage of written processes of consent and training of interviewees on fundamental concepts such as data collection techniques, obtaining cooperation and monitoring respondent's confidentiality are covered in the training.

Voluntarism

Participants will choose to participate or not in the study and if they choose to participate or not, will not have any effects on their jobs or job related evaluations. Information obtained is purposely for the research only.

Contacts

For any information on the research contact the researcher Bigobe Isaac Araali +256772....., email bigobeisaac@gmail.com,

Consent

I have been given an opportunity to have any questions about the study answered to my satisfaction. I agree to participate as a volunteer.

Date Signature of participant

APPENDIX II; RESPONDENT QUESTIONNAIRE

Part 1; Socio demographic challenges

1. Present maternal age: years

1. 15 – 24
2. 25 – 34
3. 35 – 49
4. >49

2. Education level?

1. No school
2. Primary school
3. Secondary school
4. Tertiary institution
5. Other specify

3. What is your religion?

1. Catholic
2. Protestant
3. Muslim
4. Orthodox
5. Other specify

4. What is your marital status?

1. Single
2. Married
3. Divorced
4. Widowed

5. Parity

1. One
2. Two
3. Three
4. Four
5. More than four

Part 2; Utilization of Maternal health services

ANC services

6. Did you go for antenatal care during pregnancy?

1. Yes
2. No

7. When did you start going for ANC during your previous pregnancy?

1. 1st trimester (first 3 months)
2. 2nd trimester (4 – 6 months)
3. 3rd trimester (7 – 9 months)

8. How many ANC visits did you have during your previous pregnancy?

1. One
2. Two
3. Three
4. Four

Delivery care service utilization

13. Did you delivery you last child in a health facility?

1. Yes
2. No

14. If yes above, did you book for delivery at any health facility two weeks to the birth of your child?

1. Yes

2. No

15. How many days before actual child delivery did you go to the hospital?

1. <14 days

2. > 14 days

PNC services utilization

9. Did you go for postnatal care after child birth?

3. Yes

4. No

10. When did you start going for PNC after birth?

1. Within first two days

2. Not within first two days

11. After birth, did you go to the health facility for check up after 7 days?

1. Yes

2. No

12. After birth, did you go to the health facility for check up after 6 weeks?

1. Yes

2. No

Part 3; The maternal health care activities done by community health workers

The table below, indicate your level of agreement with the statement given by ticking the appropriate option

| | Strongly agree | Agree | Neutral | Disagree | Strongly Disagree |
|--|-----------------------|--------------|----------------|-----------------|--------------------------|
| Community Health workers have educated you on child birth and its complications in this area | | | | | |
| CHW have come here and educated you on how to prepare for birth | | | | | |
| CHW have come here and educated you on the importance of giving birth in a health facility | | | | | |
| CHW have come here and educated you on antenatal care and its importance | | | | | |
| CHWs have come here and educated you about postnatal care services available after child birth | | | | | |
| CHWs have offered you general counseling on how to manage the pregnancy period in terms of health seeking behavior | | | | | |
| CHWs have been to this area registering all women who are pregnancy and encouraging them to go to health facilities for care | | | | | |
| CHWs have been here promoting healthy behaviors during pregnancy and the postpartum period | | | | | |
| CHWs in this area accompany women in labor from their homes to the health facility | | | | | |
| CHWs visits mothers who | | | | | |

| | | | | | |
|--|--|--|--|--|--|
| have just gave birth early enough to identify danger signs and refer them to health facilities as needed | | | | | |
| CHWs hold general health education sessions with all women and educate them about the advantages and disadvantages of TBAs | | | | | |
| CHWs come here and carry out assessments of pregnant women for example their weights, heights etc | | | | | |
| CHWs immunize pregnant women with Tetanus vaccine when they come to this community | | | | | |

APPENDIX III: KEY INFORMANT INTERVIEW GUIDE

1. In general, what is your opinion on the situation of maternal health service utilization among women in this district?

.....
.....
.....

2. Specifically comment on the level of service use for the following maternal health services?

Antenatal care

.....
.....
.....
.....

Delivery care

.....
.....
.....

Postnatal care

.....
.....

3. Do you have community health worker teams active in this district, if yes; please elaborate on the day to day operations

.....
.....
.....

4. Do those community health workers carry out activities focused at improving maternal health conditions of the mothers in Kakumiro district? If yes what are those activities?

.....
.....
.....
.....
.....5

. In your opinion, do you think those activities in some way have affected or influenced the way mothers in this district use maternal health services? If yes, please elaborate?

.....
.....
.....
.....

APPENDIX IV: WORK PLAN

| ACTIVITY | MONTHS | | | | | | | |
|--|--------|-----|-----|------|-----|-----|-----|-----|
| | APR | MAY | JUN | JULY | AUG | SEP | OCT | NOV |
| Proposal presentation & allocation of supervisor | | | | | | | | |
| Proposal writing | | | | | | | | |
| Submission of full proposal | | | | | | | | |
| Data collection | | | | | | | | |
| Data entry& Analysis | | | | | | | | |
| Report writing. | | | | | | | | |
| Thesis submission | | | | | | | | |
| Dissemination of results. | | | | | | | | |

APPENDIX V: BUDGET

| Serial number | ITEM | QTY | UNIT COST | TOTAL COST (SHILLINGS) |
|----------------------|-----------------------------------|------------|------------------|--------------------------------|
| 1 | Stationary (Ream of paper) | 2 | 22,000 | 44,000 |
| 2 | Proposal development and printing | 1 | 50,000 | 50,000 |
| 4 | Research assistants per diem | 3 | 200,000 | 600,000 |
| 6 | Field work transportation | | 300,000 | 300,000 |
| | Accommodation during field work | | 300,000 | 300,000 |
| 7 | Data analysis | 1 | 500,000 | 500,000 |
| 8 | Typing of report | 1 | 30,000 | 30,000 |
| 9 | Printing and binding of report | 3 | 70,000 | 70,000 |
| 10 | Miscellaneous | | | 100,000 |
| TOTAL | | | | 1,894,000 |

APPENDIX VI: INTRODUCTORY LETTER



making a difference to health care

Dean's Office-Institute of Public Health and Management

Kampala, 4th September 2016

*D.H.O - KAKUMIRO DISTRICT.
ADD CHARGESHEET
IN AREA OF STUDY.*

*Recommended.
AHO - met accord him
necessary support*

Dear Sir/Madam,

RE: ASSISTANCE FOR RESEARCH

Greetings from International Health Sciences University.



This is to introduce to you **Bigombe Issac** Reg. No. **2014-MPH-WKND-007** who is a student of our University. As part of the requirements for the award of a Masters Degree of Public Health, the student is required to carry out field research for the submission of a Research Dissertation.

Issac would like to carry out research on issues related to: **Assessment of the Community Health Workers Contribution to the Utilization of Maternal Health Services Among Women in Kakumiro District, Ugandas.**

I therefore request you to render the student such assistance as may be necessary for his research.

I, and indeed the entire University are thanking you in anticipation for the assistance you will render to the student.

Sincerely Yours,

Alege John Bosco
Dean, Institute of Public Health and Management



MICHAEL YUMBO A