

## IMPACT OF COMMUNITY HEALTH WORKERS MOTIVATIONS ON MATERNAL AND NEWBORN HEALTH SERVICES PERFORMANCE, KIGALI CITY –RWANDA.

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### CHAPTER I: INTRODUCTION

#### 1.1BACKGROUND OF THE STUDY

Over 95% of global maternal and child deaths occur in 75 low-and middle-income countries and remote populations within these countries end bear the greatest burden.

Many countries are exploring strategies to scale up community health worker(CHW)-based program, which have been demonstrated to improve health in the domains of maternal and child health, access to family planning and prevention of human immuno-deficiency virus (HIV) infection, malaria and tuberculosis.

In Rwanda, a national plan to Accelerate the Reduction of Maternal and Infant Mortality was adopted by the Rwandan Ministry of Health in 2008. The roadmap outlines approaches to reducing maternal and newborn mortality, and includes strategies for improving the quality of the facility based primary and referral care unit.

According to the Roadmap builds on the National Reproductive Health Policy and the National Child Health Policy (2008), and the Strategic Plan for Acceleration of Child Survival (2008-2012), all program activities are implemented in the context of the Economic Development and Poverty Reduction Strategy of Rwanda (EDPRS 2008-2012) and the National Health Sector Strategic Plan (Rwanda HSSPII 2009-2012).

General approaches to implementing community-based activities are outlined in the National Community Health Policy of Rwanda (2007). The health system in Rwanda is decentralized to the district level. The country is divided into 4 provinces and the City of Kigali, 30 districts, 416 sectors, around 9,000 cells and 15,000 Imidugudu (villages). A system of community-based health insurance in the form of mutual health insurance was established in 1996. Since 2006 Rwanda has implemented a Performance Based Financing (PBF) model to provide incentives to facility-and community-based health workers. The PBF approach provides quarterly remuneration to health workers based on performance measured by defined indicators (MOH Rwanda, 2012).

In order to improve the performance of CHWs and obtain good results on agreed upon indicators especially the maternal and infant mortality, payments are made when proof of an agreed level of performance is attained. Every month at the Hospital level data is collected from reports on

indicators and entered into a web-based database (SisCom). The Sector Steering Committee oversees the evaluation of different indicators during a quarterly meeting and approves the payment to the CHW Associations. This quarterly C-PBF accompanied with monthly top ups and trainings are the major and in some cases the sole incentives provided to CHWs as a motivation to achieve their different and important tasks (MOH, Rwanda 2009).

The maternity benefits for workers provided under the Labour Code are consistent with the UN Convention on the Elimination of All Forms of Discrimination against Women and the ILO Maternity Protection Convention (ILO Convention no. 183). Specifically, a pregnant employee is entitled to a paid leave of 12 weeks, of which 2 are obligatory before the presumed date of delivery and 6 are obligatory after delivery. A woman on maternity leave can extend the leave by an additional 6 months following medical certification of her inability to resume work. During the maternity leave, a woman is entitled to receive 2/3 of her usual salary. A new draft Labour Code under consideration would make some changes to these rules, but largely leave them intact.

Rwanda's maternal, neonatal, and child health indicators are among the poorest in the world. As will be discussed further in Section IV, maternal mortality in the country is approximately 1,071 per 100,000 live births, an increase over pre-genocide levels. Infant and child mortality rates have actually increased since 2000 according to UNICEF and DHS data and currently stand at 118 and 203 per 1000 respectively (UNICEF 2005, DHS 2000).

## **1.2 STATEMENT OF THE PROBLEM**

Community health workers (CHWs) are progressively recognized as a critical link in refining access to services and achieving the health-related sustainable development goals(SDGs). Yet the financial and human resources remain constraints in developing countries, CHWs are expected to excel to their work without automatically receive the needed support to do their jobs well. Although the Ministry of health in Rwanda(MOH) provides different incentives such monthly top up, Community PBF, Trainings, Provision of materials and equipment's to Community Health

Workers in order to increase the maternal and newborn health services, the vision of MOH are not yet achieved:

For the past decades, Rwanda was faced with a shortage of HRH especially as evidenced by the following ratios: Doctor/Pop Ratio: 1 /50.000; Nurse / Pop Ratio=1 /3.900; Midwives / Pop Ratio=1 / 100.000 (DHS 2005). The HRH crisis is worst in rural areas: only 17% of nurses serve the rural areas whereas Kigali City, with only 10% of the population, is served by 75% of doctors and 60% of nurses (Basinga, 2009).

To cover the gap and provide a rapid response, the Ministry of Health (MOH) introduced a policy on CHW and inspired by the success of clinical performance-based financing (PBF), the MOH initiated the community PBF (CPBF) as a way to motivate CHW. PBF concept is based on the assumption that linking incentives to performance will contribute to increases in health care utilization and quality of services

In 2008, with the introduction of community based maternal and newborn health implemented by motivated CHWs in charge of maternal and newborn health up to now we are observing the improvement in maternal health where the current statistics shows 210/100,000 lives birth (Rwanda, DHS 2014/2015) and our study is assessing if there a contribution of CHWs in charge of MNH on improving maternal and newborn health services. Rwanda is observing also an improvement in fertility ration where 6.1(DHS2005), 5.5(RIDHS200-2008), 4.6(DHS2010) and 4.2(DHS2014/2015) since the past ten years. Birth occurred in health facilities by skilled provider have been improved in last fifteen years from 27% in 2000 to 91% in 2018. The figures before 2008 and after 2008 with an introduction of community based maternal and newborn health implemented by motivated CHWs in charge of maternal and newborn health shows 27% (RDHS2000), 28% (RDHS2005), 45% (RIDHS2007-2008), 69% (RDHS2010) and currently 91% (RDHS2014-2018).

By 2018, Millennium Development Goal 5 (MDG 5) sets a target of 75 percent reduction in maternal mortality, from 400/100,000 live births to 100/100,000 between the 1990 baseline and 2015. Although progress has fallen short of achieving this MDG by 2018, every region of the world has made important gains, and globally, maternal mortality has fallen by 45 percent over the past two decades (WHO, 2014).

In April 2014, the World Health Organization, Maternal Health Task Force, United Nations Population Fund, USAID and the Maternal Child Health Integrated Program, and representatives from 30 countries agreed on a global target for a maternal mortality ratio (MMR) of less than 70/100,000 live births by 2030, with no single country having an MMR greater than 140. This will require that we collectively build on past efforts, accelerate progress and ensure strong political commitment from all stakeholders (WHO, 2014).

### **1.3 RESEARCH QUESTIONS**

The study attempted to answer the following questions.

1. What are the Socio-demographic status of community health worker interest in maternal and newborn health?
2. Does Community Health Worker both monetary and non-monetary incentives induce performance of maternal and newborn health services?
3. Does Community Health Worker's association membership encourage performance of maternal and newborn health services?
4. What are relationship between community health worker's motivation and maternal and newborn health performance?

### **1.4 RESEARCH OBJECTIVES**

The general objective was to assess the relationship between Community Health Workers(CHWs) in charge of Maternal and Newborn Health services incentives to performance of maternal and newborn health services.

### **1.5 SPECIFIC OBJECTIVES**

1. To define Socio-demographic status of community health worker interest in maternal and newborn health

2. To determine the Community Health Worker both monetary and non-monetary incentives and performance of maternal and newborn health services.
3. To found out Community Health Worker's association membership and performance of maternal and newborn health services
4. To examine the relationship between community health worker's motivation and maternal and newborn health services performance?

## **1.6 HYPOTHESIS**

There is no relationship between community health worker's motivation and maternal and newborn health services performance.

## **1.7 SIGNIFICANCE OF THE STUDY**

The study is significant to the community, CHWs and health providers within Kigali city. The overall health sector (Ministry of Health, NGOs and the Rwandese Government) will be benefit from the results in Kigali City, Rwanda.

## **1.8 SCOPE OF THE STUDY**

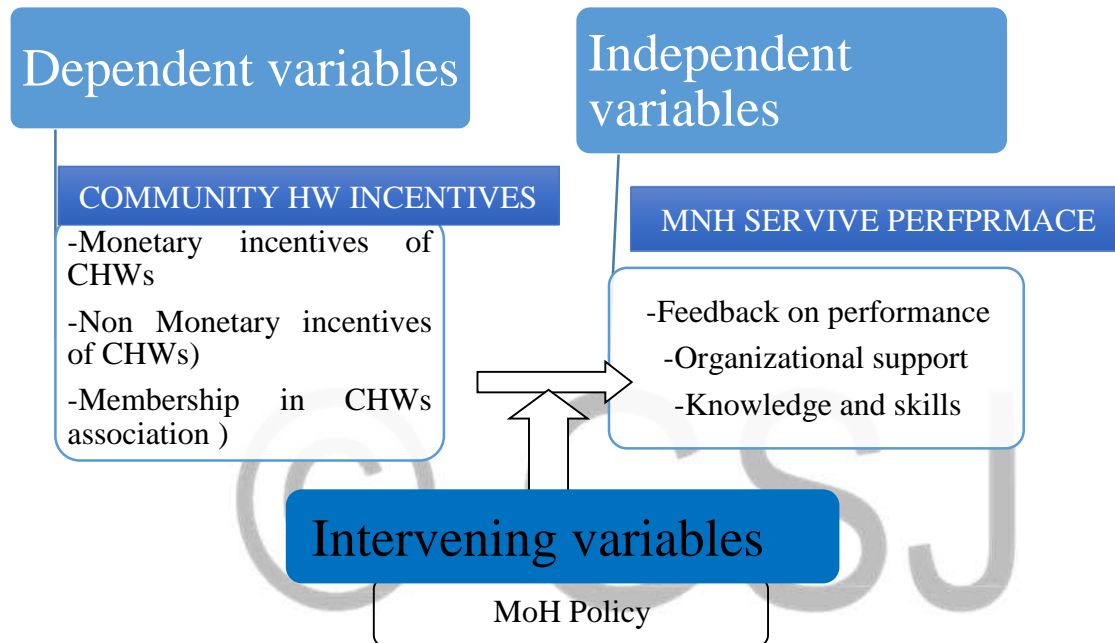
Kigali city, it has 8public hospitals (Rwanda HMIS, 2018). They study target was conducted in 8 hospitals which are: CHUK, Kacyiru, Muhima, Kibagaba, Kanombe Military, Kingfaisal,Ndera and Masaka Hospital.

## **1.9 LIMITATION OF THE STUDY**

The major limitation of this study was the unwillingness of some respondents to give true information during data collection as it was intended to investigate the contribution of incentives they receive on improvement of services they deliver to mothers and newborns. Probing and encouragement was done by the researcher to divulge the necessary information to respondents. insufficient funds.

## 1.10 CONCEPTUAL FRAMEWORK

The diagram below represents the independent and dependent variables. Since there are many variables, the researcher shall concentrate on three most important variables such as Independent variable, Dependent variable, and Intervening variables. This conceptual framework interlinks those three types of variables.



**Diagram1:** Conceptual framework

**Source:** Researcher

## **CHAPTER II: LITERATURE REVIEW**

### **2.1 INTRODUCTION TO LITERATURE REVIEW**

Review of literature is basis for the research study in nearly every academic. Review of literature is defined as broad, comprehensive in depth, systematic and critical review of scholarly publication, unpublished scholarly print materials, audiovisual material and personal communication. Review of literature was done in order to make a theoretical support for conceptual framework of this study. The main purpose of literature review is to develop a thorough understanding and insight about the research problem that is going to be studied, by reviewing different sources that related to the present topic. Literature review was done from book, articles, online journals, newspaper, websites, organizational reports and unpublished thesis reports etc.

### **2.2 THE CONTEX OF COMMUNITY HEALTH WORKERS**

The global policy of providing primary level care was initiated with the declaration of Alma-Ata in 1978s. The countries signatory to Alma Ata declaration considered the establishment of CHW program as synonym with Primary Health Care approach (Mburu, 1994; Sringernyung Hongvivatana,&Pradabmuk, 1995). Thus in many developing countries PHC approach was seen as a mass production activity for training CHWs in 1980s (Matomora, 1989). During these processes the voluntary health workers or CHWs were identified as the third workforce of «Human resource for Health» (Sein, 2006). Following this approach CHWs introduced to provide PHC in 1980s are still providing care in the remote and inaccessible parts of the world (WHO, 2006a). The CHWs have evolved with community based healthcare programme and have been strengthened by the PHC approach. However, the conception and practice of CHWs have varied enormously across countries, conditioned by their aspirations and economic capacity. This review identified seven critical factors that influence the overall performance of CHWs which are discussed in this section. In discussing these issues, our aim is to (a) highlight certain empirical

knowledge and (b) point out, if any, gaps in the design, implementation and performance of CHWs(Prasad BM, Muraleedharan VR2007).The above review highlights several aspects to be kept in mind in designing and implementing effective CHW schemes. The review emphatically shows that (a) the selection of CHWs from the communities that they serve and (b) population coverage and the range of services offered at the community levels are vital in the design of effective CHW schemes. It should be noted that smaller the population coverage, the more integrated and intensive the service offered by the CHWs(Prasad BM, Muraleedharan VR2007). Despite advances in reaching remote communities, there are many opportunities for improvement and expansion of CHW programs, especially related to the development of new tools and evidencebased policy to «guide global health policy and implementation. » This is where the One Million Community Health Workers (1mCHW) Campaign comes into play. By coordinating existing CHW programs with African governments, and making it clear where the core interests of local and global organizations fit into national frameworks, 1mCHW is developing the tools necessary to guide CHW policies. Moreover, 1mCHW is developing an «Operations Room, » an online dashboard to provide comprehensive information about CHW activities on the ground. The «Operations Room» will chart progress in different countries and contain the compiled evidence demanded by the article's authors to deepen our understanding of CHW programs and of the most effective means of implementation. We know the plan works: a comprehensive review of CHW literature conclusively conveys the effectiveness of CHW programs, especially given the recent access to mobile technologies. 1mCHW will help turn this promising literature into life-saving results on the ground (One million community health workers campaign2013).

In the study conducted by USAID (2010) on Community Health Worker Programs: A Review of Recent Literature, the research concluded that key components were identified as central to the design and implementation of functional and sustainable CHW programs: defined job description with specific tasks or responsibilities for volunteers, recognition and involvement by local and national government, Community involvement (especially in recruitment and selection, by making use of existing social structures, consider cultural appropriateness, address needs of community, etc.), resource availability (funding, equipment, supplies, job aids, etc.).



Monitoring and evaluation of programs, linkages with formal health care system training (including refresher trainings), supervision and feedback, incentives or motivational component and advancement opportunities which are all similar to this research.

### **2.3 COMMUNITY HEALTH WORKER' INCENTIVES IN RWANDA**

Performance-Based Financing is thoroughly embedded in the Rwandan Health system. It is practiced in Hospitals and district hospitals nationwide using common approaches. Ministry of Health Performance-Based Financing has started at the central ministerial level (Basinga, 2009).

Performance-Based Financing systems are being designed for the national Community Based Health Insurance system, and for the CDLS. A national model for Community Performance-Based Financing has been developed, using a broad consultative process. The model is based on experience gained during the implementation of the Hospital and hospital Performance-Based Financing models, and benefits from a close fit with these models. The purpose of this Community Performance-Based Financing (PBF) Guide is to document the tools and processes used in Community PBF. This guide is primarily meant as a background document for trainers, sector PBF Steering Committee members, and the Community Health Worker Associations. However, it will be used by all working in the Rwandan Health System (Basinga, 2009).

The community PBF is not for individual performance remuneration. The purpose of the incentive is for community health workers to increase the capital of their Associations. The Associations on their turn will then start income generating activities to the benefit of the individual members. The remuneration of individual community health workers will be from the profit of the Association activities (MOH Rwanda, 2009).

Resource poor countries, particularly in sub-Saharan Africa, face many challenges improving maternal health due to financial and human capital constraints, lack of motivation among health providers and lack of physical resources. One of the key policies implemented in Rwanda in response to these issues is Performance Based Financing (MOH Rwanda, 2009).

PBF provides bonus payments to providers for improvements in performance measured by indicators of specific types of utilization (e.g. prenatal care) and quality of care. While the approach promises to improve health system performance, there is little rigorous evidence of its effectiveness, especially in low-income settings.

This study examines the impact of the incentives in the Rwandan PBF scheme on prenatal care utilization, the structure and process quality of prenatal care, institutional delivery, and modern contraceptive use. The analysis uses data produced from a prospective quasi-experimental design nested within the program's rollout. The rollout was implemented in two phases: in 2006, 86 facilities (treatments) in rural areas enrolled in the PBF, and another 79 facilities (control) enrolled two years later.

In order to isolate the incentive effect from the resource effects, the control facilities were compensated by increasing their traditional budgets with an amount equal to the average PBF payments to the treatment facilities. Baseline and end line data were collected from all of the facilities and a random sample of 14 households in each facility's catchment area.

Using a different approach, PBF had a large and significant impact on the quality of prenatal care measured by process indicators of the clinical content of care and deliveries in facilities. However, no such effect was found on prenatal care visits or on the use of modern contraceptives (MOH, Rwanda2009).

The results provide evidence to support the hypothesis that financial performance incentives can improve both the use and quality of maternal health services. Policy recommendations include increasing incentives for prenatal care service, complementary training to increase quality and combining PBF with a demand-side intervention such as conditional cash transfer involving community health workers (Basinga, 2009).

In the study conducted by JSI (2009), on the "Non-financial incentives for voluntary community health workers" they concluded the following: Community acceptance for voluntary CHWs and their own attitudes to their work is generally positive. Nevertheless, continual efforts to enhance recognition and understanding of their voluntary work in the community are needed to maintain their morale. Their work was also found to be very 'doable' and expectations from them quite clear. The teaching materials and the support provided to them by HEWs in the form of monthly meetings and work visits can be further strengthened however.

The motivations of voluntary CHWs, in terms of their reasons for being involved in their work and the benefits they expected, were strongly characterized by their desire to promote health in their community including themselves and their families. Steps taken to enhance their efficacy in this regard will therefore have a positive impact on their motivation levels. Volunteers were also

strongly motivated by the responsibility and acceptance they received from the community, as well as the recognition, respect, credibility and political status they have gained. Conversely, they were sometimes discouraged by misunderstanding of their voluntary role on the part of the community. CHWs can therefore be further motivated by promoting community understanding and recognition of their work. Their aspirations for learning and employment opportunities can also be considered in relation to ways of sustaining volunteerism.

## 2.4 PROVISION OF EQUIPMENT

The community health workers are provided with different tools and materials from government of Rwanda and different partners local and international which help them to accomplish their tasks. They have ArtemetherLumefatrin (Primo) for treatment of Malaria and rapid diagnosis test (RDT) to confirm Malaria; they have amoxicillin for pneumonia with a timer to count respiratory frequency, zinc and oral rehydration solution (ORS) against diarrhea and RUTF for malnutrition. They are equipped also with monitoring and evaluation tools for data recording and reporting with innovation of Rapid SMS with cell phones for tracking the first 1,000 days of life, preventing unnecessary mother and new born death in Rwanda. They have also boots, torches and radios. The cell coordinator has bicycles, MOH, Rwanda (2011).

Community health workers need access to the proper equipment and supplies to deliver expected services. This requires procurement of supplies on a regular basis to avoid any substantial stock out periods. Community must be equipped with a steady stock out of supplies and commodities needed for their day to day operations.

Community health workers also need materials to support their mobility, with reliable and safe transportation between households (such as an umbrella or bicycles as appropriate in a given context) and backpacks for supplies (Lehmann et al. 2007).

Community health training and deployment without immediate continuous and reliable supplies to accomplish task is inefficient demotivating and damaging to community health workers' credibility (Lehmann et al. 2007).

Therefore, a functional community health workers' system requires a robust supply management chain, with a keen eye to transport and drug supply, as well as reliable supply chains for all other equipment required by community health workers to perform their job functions. Reliable and sustainable supply chain systems are a challenge for large scale primary health care and community health programs in general (WHO, 2010).

In Pakistan, each lady health worker should have a supply kit that includes contraceptives and essential drugs in order to perform her work. These community health workers are resupplied each month at their local clinics (Muhamood et al. 2010).

A research conducted in Rwanda on community based provision of family planning services revealed that one of the major barriers mentioned by CHWs and supervisors was the difficulty of keeping all the required materials in stock. CHWs reported that since they receive only 2 - 3 units of each method of family planning that they sometimes quickly ran out of stock. CHWs often live far from the HC that resupplies them. CHWs are required to go to the HC to retrieve commodities and consumables but they are not given a means of transport (Rwanda Ministry of Health, 2011). In Zambia, a large community health worker program in Kalabo District almost completely collapsed. Key reasons identified were a shortage of drugs and community health workers' selection criteria. Furthermore, the authors found that the community members in charge of CHWs selection knew little about selection criteria. Further quality of supervision was poor and in 50% cases nonexistent (Stekelenburg et al. 2003).

## **2.5 COMPENSATING CHWs AND PERDIEM AS AN INCENTIVE**

This an amount most of the time paid by partners to strengthen the self-motivation based on monthly home visits, daily accompaniment and key maternal health activities, timely completion of a monthly report form and participation at monthly training. This perdiem is between 10 to 20\$ depending on performance of community health workers qualitatively and quantitatively (MOH, Rwanda 2011).

Compensating CHWs has a number of important benefits for both the health care program and the communities it serves. First payment for meaningful work provides a needed income for those in resource limited setting.

Secondly, compensating CHWs can strengthen their roles as an essential member of the clinical team, thereby creating a stronger bridge between the community to the clinic or hospital based setting. Third, payment particularly when it is a fair wage and paid on time can serve as a source of motivation for CHWs in performing their work reliably and effectively. Fourth, payment can also increase the amount of time CHWs are available on a weekly basis, can prevent turnover, and can promote program consistency.

Finally, investment in CHWs can potentially increase uptake in medical services, promoting adherence to HIV and TB medication and resulting in long term improved health outcomes in the community (MOH, Rwanda 2011).

Compensation structures will vary by country and program. Find out whether there are labor regulations that affect compensation in addition to any minimum or maximum wage requirements or other regulations, when budgeting for the CHWs program. Some programs either choose to or are mandated to cap salaries at the same level as those paid to schoolteachers or other civil servants. In some contexts, CHWs are paid a baseline salary and are then given an incentive bonus for each sick community member they see. In other places, CHWs receive compensation through association, whose members pool their funds to support it and equal control over its operation. Additionally, many systems involve performance based financing, in which CHWs receive compensation following the completion of certain responsibilities such as monthly home visits or the accurate collection of household data (MOH, Rwanda 2011).

CHWs who have a higher skill level, such as those that work with patients with MDR/TB may receive a higher monthly salary compared with CHWs who are responsible for more general outreach (MOH, Rwanda 2011).

In Haiti, women's health workers are compensated more than the typical CHW due to the greater knowledge base necessary to carry out their work. When planning a compensation structure, consider if and how CHWs will be paid, whether or not they will receive bonuses, top - up, or other financial incentives. If CHWs receive payment, determine how much they will receive and the schedule of payment (Healthy villages 2002). Types of payment may include: money for meals,

transportation, income from the sales of products, monthly stipend, monthly salary, performance based financing, cash for task, access to membership in association (Healthy villages 2002).

## 2.6 MEMBERSHIP IN CHW’s ASSOCIATIONS

CHWs associations membership: All CHWs organized are in associations to ensure income generation and accountability of expected results. Community PBF payments used for Association income generating projects include: poultry, cattle/goat/pig rearing, crop farming, basket making, etc that improves performance of CHWs by motivating them to rise agreed upon performance indicators, the payments made when proof of the agreed level of performance. The Sector Steering Committee oversees the implementation and approves payment to the CHW Association (MOH, Rwanda, 2011).

The study done by Havard School (2011), on CHWs in Zambia entitle" **incentives design and management it shows incentives and disincentives**”summarized in below:

Table 1: Showing Incentives and Disincentives CHWs

Motivation factors	Incentives	Disincentives
Monetary incentives that motivate CHWs	Satisfactory numeration, materials incentives, financial incentives Possibility of future payment	Inconsistent remuneration Change in tangible incentives Inequitable distribution of incentives among different CHWs
Nonmonetary incentives that motivate CWHs	Community recognition Acquisition of valued skills Personal growth and development Accomplishment Peer support Preferential treatment Clear role	CHWs from outside of the country Inadequate refresher training Inadequate supervision Lack of respect from HFs a staff

Community factors that motivate CHWs	Community involvement selection Community organizations that support CHWs Community involvement in CHWs training Community information system	Inappropriate selection of CHWs Lack of community involvement in CHWs selection, training and support.
Factors motivate communities to support and sustain CHWs	Visible change Contribution to the community empowering CHWs associations Successful referral to health facilities	Unclear role and expectation (preventive versus curative care) Inappropriate CHWs behavior Failure to take community need into account
Factors that motivate MoH staff to support and sustain CHWs	Policy and legislation to support Visible change Government community finding for supervisory activities	Inadequate staff and supply

Source: Havard School (2011),

## 2.7 MATERNAL AND NEW BORN HEALTH SERVICES

Community Health Workers identify and register women of reproductive age (encourage family planning,), identify pregnant women and encourage ANC, birth preparedness and facility based deliveries, identify women and newborns with danger signs and refer them to health facility for care, accompany women in labor to health facilities, encourage early postnatal facility checks for both newborns and the mothers and report those activities by using Use Rapid SMS (MOH, Rwanda 2011).

## **2.8 RELATIONSHIP BETWEEN CHWs INCENTIVE AND IMPROVE MATERNAL AND NEWBORN HEALTH**

Working with the community gives health workers a platform from which to strengthen their relationship with the community and receive community feedback, as well as a structure for regular interaction with health facility staff. Community participation is an integral part of CHWs' incentives. Without involvement, communities lack interest and expectations, leaving CHWs without a support system we can't achieve MDGs 4 and for improving maternal and child health (MOH, Malawi, 2014).

The rate of decline in child mortality is too slow in most African countries to achieve the Millennium Development Goal of reducing under-five mortality by two-thirds between 1990 and 2018. Effective strategies to monitor child mortality are needed where accurate vital registration data are lacking to help governments assess and report on progress in child survival. They present results from a test of a mortality monitoring approach based on recording of births and deaths by specially trained community health workers in Malawi (MOH, Malawi, 2014).

Results from systematic reviews of CHW program confirm that CHWs provide critical links between rural communities and the formal health system and have been shown to reduce child morbidity and mortality when compared to the usual healthcare services (MOH, Sierra Leone 2013).

With appropriate support and sufficient training, CHWs can potentially play a pivotal role in strengthening health systems in areas with poor human resources for health. More specifically, they are an important resource for implementing interventions targeting reductions in neonatal mortality and tracking women throughout their pregnancy while simultaneously promoting appropriate maternal and newborn care practices (MOH, Sierra Leone 2013)..

Their potential however, is hampered by inadequate supervision, lack of locally relevant incentive systems, loss of motivation, insufficient recognition and community support, poor connectivity to health facilities, and knowledge retention problems. Moreover, higher attrition rates are often observed in programs where CHWs are asked to volunteer.

The motivation of CHWs and the risk of high attrition rates therefore have important implications for the effectiveness, success, cost, credibility and continuity of CHW-based programs, (MOH, Sierra Leone 2013).



## 2.9 SUMMARY OF IDENTIFIED GAPS

We now know that CHWs can play a crucial role in broadening access and coverage of health services in remote areas and can undertake actions that lead to improved health outcomes, especially, but not exclusively in the field of child and maternal health. CHWs represent an important health resource whose potential in providing and extending a basic health care to underserved populations must be fully tapped. Despite the experience with community health workers worldwide, the research gap remains in community health worker literature especially in terms of Incentives strategies and maternal and infant mortality improvement (MOH, Rwanda 2011).

Despite the availability of Rwandan community health policy and strategies there is no study conducted on contribution of CHWs' incentives on the improvement of maternal and infant health services. The evaluation done by MOH, Rwanda (2011), where the main objective was to assess the quality of services provided by the CHWs and their access to necessary supplies. This was mainly assessing what CHWs do and how they give services but this didn't relate to the quality of services provided in terms of maternal and infant health with incentives they get.

The researcher mentioned the results in terms of knowledge/practices the family with CHWs might have but didn't relate the incentives given to CHWs to their contribution on infant and maternal health (MOH, Rwanda 2011).

The study conducted by Winch et al., (2001) was assessing the contribution of CHWs on improvement of health system including drug availability and the skills of Community Health Workers to assess, classify, and treat children accurately. This included the three following elements: improving partnerships between health facilities and services and the communities they serve, increasing appropriate and accessible care and information from community-based providers, integrating promotion of key family practices critical for child health and nutrition but they didn't assess the relationship between CHWs' incentives and maternal and infant health improvement.

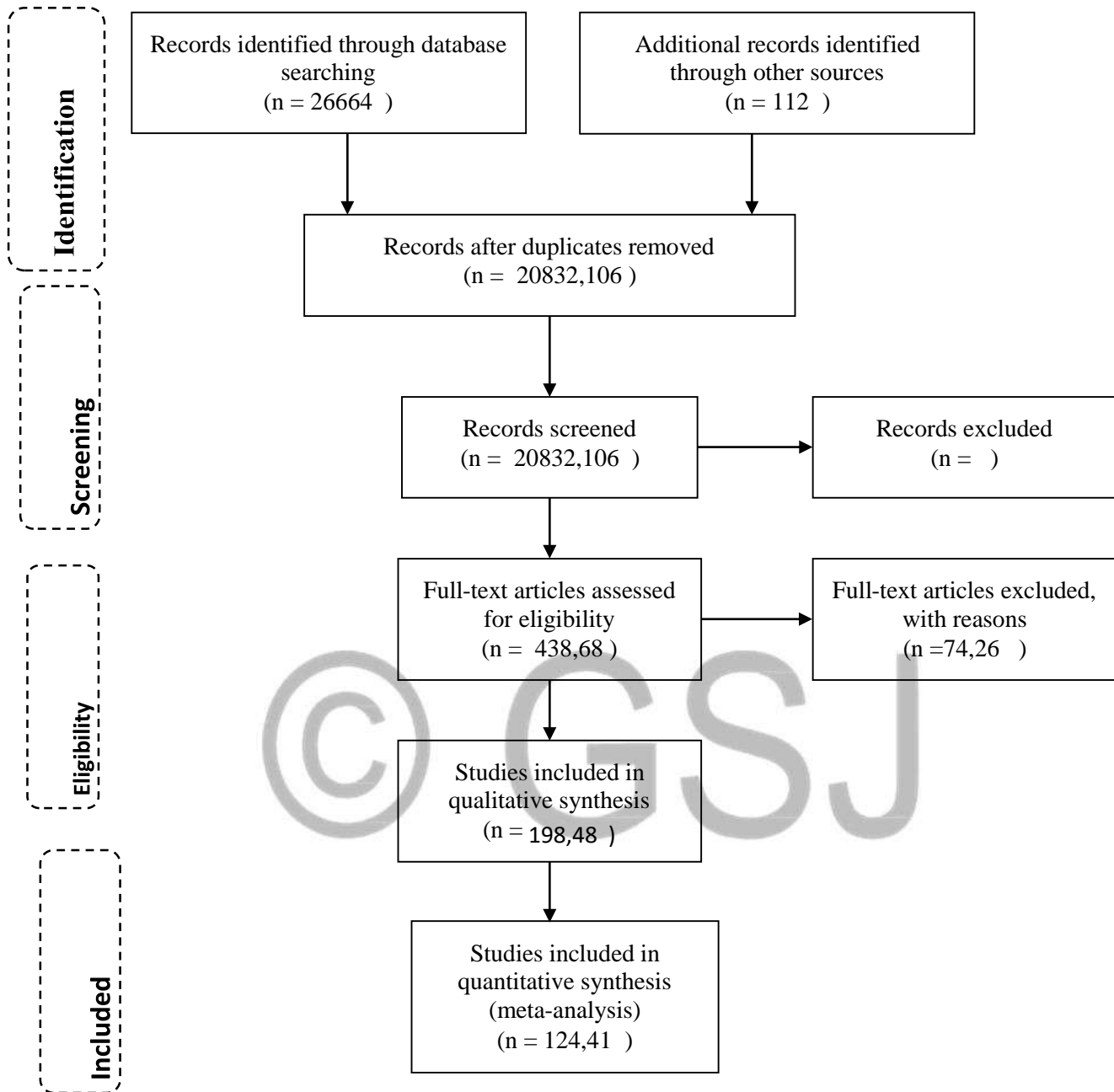
In all the literature above there is no specific research, which explains well the assessment of incentives given to CHWs to their contribution on improving maternal & newborn health. Hence,

for the purpose of this study, the research intends to assess the relationship between CHWs' in charge of maternal and newborn health incentives on improvement of maternal and newborn health services. Child health intervention that warrants considerably more attention, particularly in Africa and South Asia. (Oxford University Press, 2005).

## 2.10 PRISMA 2009 FLOW DIAGRAM

**Fig 1. The Data Extraction Process**





Source: doi:10.1371/journal.pmed.1001419.t001

Systematic Reviews and Meta-Analysis (PRISMA) guidelines. The search algorithm is based on two main topics: Community Health Workers' motivation and Maternal health, Newborn health services performance.

### CHAPTER III: RESEARCH METHODOLOGY

This Chapter gives the procedure that was used in this research so as to achieve the set of the study objectives. The researcher adopted cross-sectional survey design. The researcher adopts both qualitative and quantitative approach. The researcher also adopted correlational research design to find the relationship between the two variables.

### **3.1 POPULATION AND SAMPLE AND SIZE**

Population is the entire set of individuals of interest to research. Although the entire population usually does not participate in a research study, the results from the study are generalized to the entire population the “population” in statistics includes all members of a defined group that we are studying on, collecting information for data driven decisions. (Forzano & Gravether, 2003).

### **3.2 SAMPLING TECHNIQUE**

Sample size can be defined as a group of representative selected from the entire population in order to be tested. The researcher selects a sample to serve a specific purpose, even if this makes a sample less than fully representative (Zikmund, 2003). The researcher has decided to apply convenience sampling method to select 88 respondents to represent the survey population. A convenience sampling technique also known as grab sampling or accidental sampling, is a type of no-probabilistic sampling that involve the sample being drawn part of the population that is close to hand. That is a sample population selected because is readily available and convenient as researchers are drawing on relationships or networks to which they have easy access (Boxil Claudia, & wint, 1997).

### **3.3 POPULATION OF STUDY**

The study was conducted by respondents interested in eight Hospitals in Kigali City -Rwanda which are: CHUK, Kacyiru, Kibagaba, Kanombe Military, Kingfaisal, Ndera and Masaka Hospital.

The total target population of this study was 100 CHWs in charge of MNH working in Hospital region in Kigali city.

### 3.4 SAMPLE SIZE

The sample consisted of eight Hospitals and the selection was based on the number of CHWs in charge of MNH in Hospital catchment area of Kigali City.

Alan Bryman and Emma Bell (2003), Considering the number of CHWs in charge of MNH the sample was drawn to be 100 population and the sample size calculation is based on the simple propulsive sampling method because all population was subject of the study; this was used because it is applicable for academic research and it is more helpful when data collected for the whole population is available. The formula for calculation of sample size from a population is below

$$\text{Sample size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N}\right)}$$

Where N = population size as the total number of people in the group you are trying to study e = Margin of error as A percentage that tells you how much you can expect your survey results to reflect the views of the overall population

z = z-score as percentage that reveals how confident you can be that the population would select an answer within a certain range, a 99% confidence level means that you can be 99% certain the results lie between x and y numbers.

Therefore, sample size is 88 where confidence level is 99%, margin error is 5% and population size is 100.

### 3.5 SAMPLE PROCEDURE

The target population of the study was 100 respondents. Alan Bryman and Emma Bell (2003), recommend that if a researcher has a target population of 100, the sample size for the study is 88. Therefore, the study sample size was 88 respondents, the probability methods gave us simple

random sampling to be applied because the whole population is available and easily participated in responding to the questionnaire given by the researcher.

### 3.6 RESEARCH INSTRUMENTS

The data can be obtained from primary or secondary. Questionnaire, interview, news conferences, brainstorming, voice vote, observation, and experimentation are primary data but books, journals, research publications, newspapers, magazines, television, radio, internet and report provided by secondary data. The researcher used primary in order to obtain response and views of respondents on the research study, questionnaires were distributed amongst respondents. In this view, questionnaires are set of related questions developed from hypothesis, objectives of the research under study. In the research, the researcher used questionnaires to collect the information related to the research study (Saunders *et al*, 2003).

The researcher used Self structure questionnaire divided into three parts. Part one is the respondents demographic profile where the respondents were requested to tick the appropriate information, Part two is the perceptions of the respondents towards the community health incentives on maternal and newborn health services performance, Kigali-Rwanda by circling the proper number as described below: 4= strongly agree, 3= agree, 2= disagree and 1= strongly disagree. The respondents used the following interpretation of scales when answering questionnaire as indicated below in the table 1.

**Table 1**

*Interpretation of scales*

<b>Weight Scale</b>	<b>Interpretation of the scale</b>
1	Strongly Disagree (SD)
2	Disagree (D)

3	Agree (SA)
4	Strongly agree (SA)

---

Source: (Saunders, Philps, & Adrian , 2003)

Table 1 show that the lowest scale is one and the highest is four. The respondents were requested to circle their best option. In this study the data obtained through the questionnaires, were analyzed using the Statistical Package of Social Science (SPSS) and presented in chapter four. The questionnaire used in data collection was translated in Kinyarwanda for some respondents might not understand English.

### **3.7 DATA GATHERING PROCEDURES**

There are two main types of data gathering: primary data and secondary data. Primary data are data that are gathered and assembled specifically from the field for the research project at hand (Williams, 2003).

For the current study, the main source was primary data. The researcher after designing the questionnaire it was given to the advisor for verification, after the approval of questionnaire by the advisor to be used for data collection, through structured questionnaires were given to the selected employees for data gathering.

### **3.8 STATISTICAL TREATMENT OF DATA**

With this research, SPSS (Statistical Package for the Social Science) version 20 was used in the presentation of findings, analysis and interpretation. The presentation focused on the research questions and research hypotheses. Descriptive-correlation statistics were used in the research. Means, standard deviation, and Pearson correlation were taken into consideration to make ease analysis

### Mean (M)

The best known and frequently used measure of the center of a distribution of a quantitative variable is well known as the mean. The mean refers to “averaging adding up the data points and dividing by how many there are” (Aggesti&Franklin, 2009).By formula, Mean  $\bar{X} = \frac{1}{n} \sum_{i=1}^n x_i$

**Table 2**

*Evaluation of mean*

Mean	Evaluation
Mean = 1.50 – 2.49	Weak
Mean = 2.50 – 4.00	Strong

### Standard Deviation (σ)

The standard deviation helps to measure how far or near from the mean. A measure of the center is not enough to describe a distribution well. It tells the researcher about the spread of the data. In summary, we have σ is typical distance from the mean, larger values of σ represent greater spread, and σ =0 means that all observations take the same value.  $\bar{x} - \sigma$  denotes the value one standard deviation below the mean.  $\bar{x} + \sigma$  denotes the value one standard deviation above the mean, and  $\bar{x} \pm \sigma$ , denotes the values that are one standard deviation from the mean in their

direction. By formula,  $SD = \sqrt{\sum_{i=1}^n \frac{1}{n} (x_i - \mu)^2}$

**Table 3**

*Evaluation of standard deviation*



Standard deviation	level of spreading
SD=0.5	Moderate
SD<0.5	homogeneity
SD>0.5	heterogeneity

Source: (Aggresti&Franklin, 2009)

### Pearson Correlation

Pearson correlation is the tool of correlation analysis developed to study and measure the statistical relationship that exists between two or more variables. When three or more variables are considered, the study deals with multiple correlations. According to Sander, (2000), correlations analysis, the purpose was to measure the strength and closeness of the relationship between each independent variable to dependent variable.

**Table 4**

*Evaluation of correlation*

Correlation coefficient (positive)	Label: positive/Negative
<b>r=1</b>	Perfect linear correlation
<b>0.9&lt;r&lt;1</b>	Positive strong correlation
<b>0.7&lt;r&lt;0.9</b>	Positive high correlation
<b>0.5&lt;r&lt;0.7</b>	Positive moderate correlation
<b>0&lt;r&lt;0.5</b>	Weak correlation
<b>r=0</b>	No relationship

Source: (Barret & Morgan, 2006)

### 3.9 ETHICAL CONSIDERATIONS

Research ethics concern the responsibility of researchers to be honest and respectful to all individuals who may be affected by their research studies or their reports of studies' results. Researchers are usually governed by a set of ethical guidelines that assist them to make proper decisions and choose proper action (Gravetter and Lori-Anni, 2003).For that reason this research work was conducted without any person harmed or faced any consequences from the research

activities. The literature used were from authors and this research was not copied from existing academic work, instead the ideas of scholars were synthesized into a comprehensive document to deepen the researcher and readers' understanding on the impact of community health incentives on maternal and newborn health services performance, Kigali-Rwanda. The data were collected from field and only used for academic purpose.

### **3.10 RESEARCH INSTRUMENTS**

Data collection was carried out by using a questionnaire; that questionnaire will be designed in English and the researcher translated directly into Kinyarwanda to avoid that language become barrier. The questionnaire is divided into three sections: Section A which includes Socio-demographic status of respondents, section B is based on the closed ended question which is in accordance with the second objective by materials or equipment received and section C is questions related to the third objective evaluating the rate of accomplishment of target. The objectives one was measured using descriptive statistics and was interpreted using percentages. Objectives one and two was measured and interpreted using mean and standard deviation while objective four was interpreted using simple linear regression.

### **3.11 DATA COLLECTION PROCEDURE**

The researcher obtained a letter of introduction from University of Rwanda, the researcher submitted the letter in person to the office of each public hospital of Kigali upon authorization; the researcher made an appointment through the community health workers in charge of Hospital level to confirm when he could visit to collect data as community health workers involved in this study. The questionnaire was given to the respondents after ensuring them that the information given will be kept confidentially and would be used only for academic and research purpose.

The researcher ensured voluntary participation of respondents to be clearly informed about the objective and benefits of the study, the confidentiality of records was protected and no name of respondents were asked during the data collection.

### **3.12 DATA ANALYSIS**

After successful data was entered, coded and analyzed using Excel software and the computer package, SPSS. The frequency of continuous and categorical variables, means and standard deviation of age were calculated. Chi-square test was used to test statistical associations and pvalue at 5% significance level. Descriptive statistic including frequency and percentage was used to answer objectives one, the mean and standard deviation was used to answer the objective two and three. Linear regression logistic was used to analyze the objectives four that was to establish the influence of incentives on improving maternal and newborn health services. Descriptive statistics allowed the researcher to reduce bias and estimate sampling errors and precision of the estimates derived through statistical calculation. Data collected from the document analysis was analyzed manually and results were used to supplement and support the findings from the main instrument.

## CHAPTER IV: PRESENTATION OF FINDINGS ANALYSIS, AND INTERPRETATIONS

### 4.1 INTRODUCTION

Chapter four of the study the impact of community health workers' motivations on maternal and newborn health services performance emphasizes on presentation, analysis and interpretations of findings under study. This is a part of statistical answers to the research questions written in chapter one of this research work. In this study the findings are data collected from 100 respondents interested in maternal and newborn health services across Kigali city including health workers and academicians. The statistical analysis was done using statistical package for social sciences, (SPSS, Version 20). The presentations of data are in form of tables. The chapter is classified into four sections: the first section is the demographic status of the respondents, the second section is the perceptions of respondents on Community Health Workers incentives, the third section is the perceptions of respondents on maternal and newborn health service performance, and the fourth section is the hypothesis verification between independent and dependent variable of the study.

#### 4.1.1 DEMOGRAPHIC PROFILE OF RESPONDENTS

This section contains the demographic profile in terms of Gender, Age group, marital status, academic qualification of respondents as summarized below in the table six.

Table 5 demonstrates the statistical information on demographic profile of respondents under study  
Table 5: Demographic profile of respondents

Variables	Frequency	Percentage
<b>Gender</b>		
Male	43	48.9%

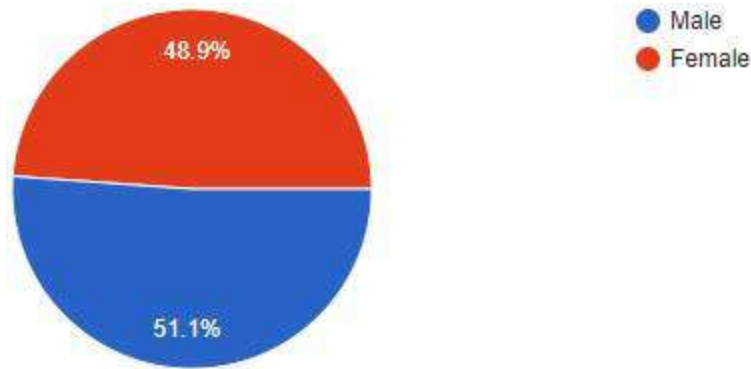
Female	45	51.1%
<b>Age Group</b>		
Under 19 years	3	3.4%
From 20-35years	32	36.3%
From 36-50years	44	50%
51-60 years	8	9%
60 Plus	1	1.1%
<b>Marital Status</b>		
Single	12	13.6%
Married	67	76.1%
Window	6	6.8%
Divorce	3	3.4%
<b>Educational level</b>		
A2	2	2.2%
A1	27	30.6%
A0	41	46.5%
Masters	14	15.9%
Others	4	4.6%

Primary data,2020

**Gender:**

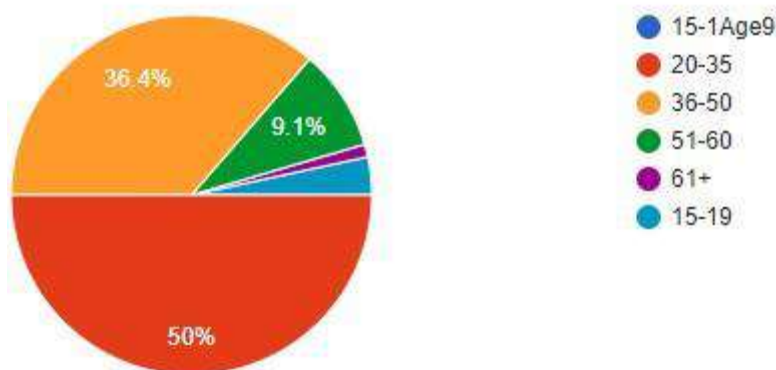
The respondent s were 45 to 48 men and women respectivel y and majority were female gender of 51.1% to

48.9% of  
respondent  
s' men.



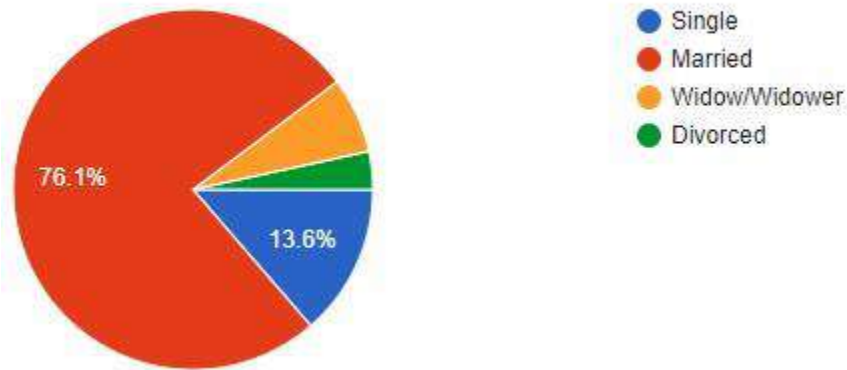
**Graph 4.1**

**Age:** the findings on age range of CHWs in charge of maternal and newborn health revealed that the majority of them 44 (50%) are those in age range of 36 to 50 years followed by those of 20 to 35 represented by 32 (36.3%), the respondents range of 51-60 years is 8(9%), under 19 is 3(3.4) and finally respondents whose years is above 60 is 1(1.1%)



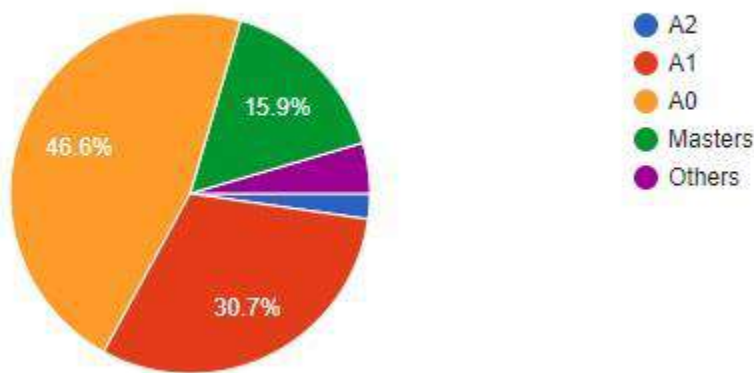
### Graph4.2

**Marital status:** the marital status in this table shows that the married are the predominant among other represented by 67 (76.1%), single of respondents were 12(13.6), then widow/Widower 6 (6.8%), one was divorced and 3(3.4) .



### Graph 4.3

**Education:** the level of education was assessed in other to test the knowledge of the respondents where we have found that the majority of respondents 41 (46.5%) have A0, 27 (30.6) represent those who have accomplished A1, 14 (15.9%) had done Masters and only 4(4.6) who had others qualification



Graph 4.4

### 4.1.2 Perceptions of respondents on Community monetary incentives

Table 6 illustrates the findings from respondents on monetary incentives as an indicator of maternal and newborn health services performance variable of this study.

**Table 6** Perceptions of respondents on monetary incentive

Item	Mean	CM	SD	CstD
<b>Community monetary incentives</b>				
Receiving sufficient salary after monthly target visits	4.39	S	0.69	HE
Receiving incentive of monthly bonus	2.64	S	1.04	
Receiving quarterly incentive of Based Performance Finance	2.89	S	0.72	HE
I receive a bag	2.49	W	0.70	HE
I receive umbrella	2.77	S	1.12	HE
I receive rain coat	2.45	W	0.88	HE
Register book for monthly reporting	2.91	S	1.15	HE
Register book for pregnant women/productive age	2.02	W	0.20	HO
Register of follow up for pregnancy women	2.04	W	0.25	HO
Receiving training and follow-up	2.23	W	0.70	HE
Conducting monthly inventory based on my store card	3.27	S	1.33	HE
Advice to clients (referral) to use health facility services	2.04	W	0.35	HO
<b>Overall mean and SD</b>	<b>2.67</b>	<b>S</b>	<b>0.76</b>	<b>HE</b>

**Source: primary data, 2020.** Key: S- Strong, W-Weak, HO-Homogeneity, HE- Heterogeneity

The statistical analysis from table 7 indicates the highest mean of 2.02 while the lowest mean is 4.39. The respondents further declared that to receive sufficient salary after monthly target visits will contribute much on CHW performance. This is presented with a mean of ( $\bar{X}$  =2.04) and standard deviation of (SD=4.39) interpreted as strongly agree indicating that the respondents were collectively in the same understanding.

The majority of the respondents indicate that to receiving sufficient salary after monthly target visits, it will lead to maternal and newborn health services performance. This is presented with a



mean of ( $\bar{X}=4.39$ ) and standard deviation ( $SD=0.69$ ) interpreted as strongly agree, showing that respondents shared common insights.

In general all variables of Community monetary incentives have scored a strong overall mean of ( $\bar{X}=2.67$ ) with a standard deviation of ( $SD=0.76$ ). This means that in generally monetary incentive motivate is the catalyst of satisfaction to the community health worker’s performance in charge of maternal and newborn health service performance.

### 4.1.3 Perceptions of respondents on non-monetary incentives

Table 7 illustrates the findings from respondents on non-monetary incentives as an indicator of maternal and newborn health services performance independent variable of this study.

CHWs' non-monetary incentives (equipment and materials)	Mean	CM	SD	CstD
Timer equipment for respiration count	2.28	S	0.78	HE
Mobile Phone equipment	4.22	S	2.72	HE
Thermometer equipment	2.74	S	1.24	HE
Weighing scale equipment	1.85	W	0.35	HO
Measurement of upper arm circumference equipment	2.06	W	0.56	HE
Continuous training	3.1	S	1.6	HE
Development of training material	1.87	W	0.37	HO
Training of CHW in general	2.5	S	1	HE
<b>Aggregate mean and SD</b>	<b>2.5775</b>	<b>S</b>	<b>1.0775</b>	<b>HE</b>

Source: primary data, 2020. Key: S- Strong, W-Weak, HO-Homogeneity, HE- Heterogeneity

The statistical evidences in the table 7 indicate the highest mean of 3.57 with the lowest mean of 2.38. The respondents believe that the non-monetary enable health community workers to perform better.

In general all variables of non-monetary incentives to the community workers have scored a strong overall mean of ( $\bar{X}=2.5775$ ) with a standard deviation of ( $=SD1.0775$ ). This means that in generally community health workers in charge of maternal and newborn services appreciate nonmonetary incentives to be catalyst of satisfaction

#### 4.1.4 Perceptions of respondents on membership association

**TABLE 8** illustrates the findings from respondents on membership association as an indicator of maternal and newborn health services performance variable of this study.

<b>Membership in CHW's associations</b>	<b>Mean</b>	<b>CM</b>	<b>SD</b>	<b>CstD</b>
Receive quarterly supervision from health facility	2.01	W	0.97	HE
Receive per-diem during the monthly meetings	2.53	S	1.05	HE
Member of community health workers' association	3.45	W	0.49	HE
Receive 30% of quarterly PBF from my association	2.92	S	0.9	HO
Access loans from my association	2.61	S	1.14	HE
<b>Aggregate mean and SD</b>	<b>2.704</b>	<b>W</b>	<b>0.91</b>	<b>HE</b>

**Source: primary data, 2020.** Key: S- Strong, W-Weak, HO-Homogeneity, HE- Heterogeneity

The statistical evidences in the table 8 show the highest mean of 3.45 with the lowest mean of 2.01.

In general the given overall mean was ( $\bar{X}=2.704$ ) with a standard deviation of ( $SD=0.91$ ) on all variables of membership association indicating that in community worker's association is key in forms of cooperative and trade union so that they can perform health workers in charge of maternal and newborn service they performance better

#### 4.2 Perceptions of respondents on the maternal and newborn health services performance

This section presents the customers' perceptions towards the maternal and newborn health services performance as a dependent variable of this study. The variables analyzed are Feedback on performance, Organizational support, Knowledge and attitude as demonstrated from table 9 to 12.

### 4.2 .1 Perceptions of respondents on Feedback on performance

Table 9 illustrates the findings from the respondents on feedback on performance as an indicator of Feedback on performance of this study a dependent variable of this study.

**Table 9** Perceptions of respondents on Feedback on performance

Item	Mean	CM	SD	CstD
<b>Feedback on performance</b>				
I expect to continue contractions in child birth and the ripening of fruit	4.39	S	0.69	HE
I think you did a great job during delivery.	2.64	S	1.04	
I am encouraged to use Innovation and Creativity during delivery	2.89	S	0.72	HE
I will keep using Collaboration and Teamwork in maternal and newborn health services department	2.49	W	0.70	HE
<b>Overall mean and SD</b>	<b>2.67</b>	<b>S</b>	<b>0.76</b>	<b>HE</b>

**Source: primary data, 2020.** Key: S- Strong, W-Weak, HO-Homogeneity, HE- Heterogeneity

Table 9 indicates the highest mean of 4.39with the lowest mean of 2.49.

In general, the given overall mean was ( $\bar{X}=2.67$ ) with a standard deviation of ( $SD=0.76$ ) on all variables of feedback on performance indicating that the maternal and newborn health services performance

### 4.2 .2 Perceptions of respondents on Organizational support

Table 9 demonstrates the findings from the respondents on Organizational supports as an indicator of Organizational support a dependent variable of the study.

**Table 9** Perceptions of respondents on Organizational support

Item	Mean	CM	SD	CstD
<b>Organizational support</b>				
I would recommend to use high level prenatal care.	3.19	S	0.59	HE
Organizational structures in the maternal and newborn health team are well organized	2.54	S	1.06	HE
organizational cultures and styles in maternal and newborn health is high level.	2.87	S	0.72	HE
Effective organizational communication,	2.42	W	0.41	HO
<b>Overall mean and SD</b>	<b>2.755</b>	<b>S</b>	<b>0.695</b>	<b>HE</b>

**Source: primary data, 2020.** Key: S- Strong, W-Weak, HO-Homogeneity, HE- Heterogeneity

Table 9 demonstrates the highest mean of 3.19with the lowest mean of 2.42.

In general, the given overall mean was ( $\bar{X} = 2.755$ ) with a standard deviation of (SD=0.695) on all variables of Organizational supports indicating that the maternal and newborn health services performance, Kigali-Rwanda

### 4.2 .3 Perceptions of respondents on Knowledge and skills

Table 10 demonstrates the findings from the respondents on Knowledge and skills as an indicator of Knowledge and skills a dependent variable of the study.

**Table 10** Perceptions of respondents on Knowledge and skills

Item	Mean	CM	SD	CstD
<b>Knowledge and skills</b>				
High level of deontology of material and newborn health workers	4.22	S	0.89	HE
Parent behavior and parenting level of qualification	2.64	S	1.04	HE
Nutrition literate and practice of parent	2.19	S	0.42	HO
Socioeconomic obligation of community health workers culture	2.79	W	0.71	HE

<b>Overall mean and SD</b>	2.96	S	0.765	HE
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**Source: primary data, 2020.** Key: S- Strong, W-Weak, HO-Homogeneity, HE- Heterogeneity  
Table 10 demonstrates the highest mean of 4.22with the lowest mean of 2.19

In general, the given overall mean was ( $\bar{X}=2.96$ ) with a standard deviation of ( $SD=0.765$ ) on all variables of Knowledge and skills indicating that the maternal and newborn health services performance, Kigali-Rwanda

### 4.3 HYPOTHESIS VERIFICATION

The research hypothesis was tested using Pearson Correlation to find out if relationship exists between community worker’s motivation (independent variable of the study) and maternal and newborn health services performance (dependent variable of the study) and the results are demonstrated below in Table 9.

Table 11: Hypothesis verification between independent and variable

	<b>Community health worker’s motivations</b>	<b>Maternal and newborn health services performance</b>
<b>Community health worker’s motivations</b>		
Pearson Correlation	1	0.847
Sig. (2-tailed)		.000
N	88	88
<b>Maternal and newborn health services performance</b>		
Pearson Correlation	0.847	1
Sig. (2-tailed)	.000	
N	88	88

Source: primary data, 2020 **Correlation is significant at the 0.01 level (2-tailed). \* p < 0.05**

The hypothesis examined the correlation between Community health worker’s motivations (independent variable) and Maternal and newborn health services performance (dependent variable) of the study in Kigali as shown in the table 11. The evidences from table 11 show a correlation between Community health worker’s motivations and Maternal and newborn health services performance equal to 0.847 which falls in intervals of  $0.8 < r < 0.9$  interpreted as a positive

high correlation. Therefore, the null hypothesis  $H_0$  saying that there is no significant relationship between Community health worker's motivations and Maternal and newborn health services performance is rejected. Therefore, the conclusion is that Community health worker's motivations influence Positively Maternal and newborn health services performance in Kigali city.

## CHAP V: SUMMARY, CONCLUSION AND RECOMMNDATIONS

This chapter gives a summary, conclusion and recommendation generated from the discussed finding and directed to relevant studies. This was directed from objectives of this research.

### 5.1 SUMMARY

The study was carried out on 'Impact of community health incentives on maternal and newborn health services performance, Kigali-Rwanda'. Researcher want to contribute in improvement of CHWs in charge of maternal and newborn health program with enhanced monetary and nonmonetary incentives and association of CHWs. To evaluate that, researchers took 100 respondents population closely related to CHWs from digital questionnaire during 1month

**The first specific objectives** were to determine the demographic characteristics of respondents; the research used the descriptive statistics;

**Gender:** The respondents were 45 to 48 men and women respectively and majority were female gender of 51.1% to 48.9% of respondents' men.

**Age:** the findings on age range of CHWs in charge of maternal and newborn health revealed that the majority of them 44 (50%) are those in age range of 36 to 50 years followed by those of 20 to 35 represented by 32 (36.3%), the respondents range of 51-60 years is 8(9%), under 19 is 3(3.4) and finally respondents whose years is above 60 is 1(1.1%)

**Marital status:** the marital status in this table shows that the married are the predominant among other represented by 67 (76.1%), single of respondents were 12(13.6), then widow/Widower 6 (6.8%), one was divorced and 3(3.4).

**Education:** the level of education was assessed in other to test the knowledge of the respondents where we have found that the majority of respondents 41 (46.5%) have A0, 27 (30.6) represent those who have accomplished A1, 14 (15.9%) had done Masters and only 4(4.6) who had others qualification

**The second objective** to determine the Community Health Worker both monetary and nonmonetary incentives and performance of maternal and newborn health services.

The study shows that result of both monetary and non-monetary incentives induce performance of maternal and newborn health service by a strong overall mean of  $X = 2.67, 2.5775$ , and overall mean standard deviation of (ST)  $= 0.76, 1.0775$  respectively.

**The third objectives determine** to found out Community Health Worker's association membership and performance of maternal and newborn health services.

The study show that Community Health Worker's association membership encourages performance of maternal and newborn health services by overall mean was ( $\bar{X} = 2.704$ ) with a standard deviation of (SD=0.91) on all variables of membership association indicating that in community worker's association is key in forms of cooperative and trade union so that they can perform health workers in charge of maternal and newborn service they performance better

**The fourthly objective** was examining the relationship between community health worker's motivation and maternal and newborn health services performance. Pearson Correlation: a correlation between Community health worker's motivations and Maternal and newborn health services performance equal to 0.847 which falls in intervals of  $0.8 < r < 0.9$  interpreted as a positive high correlation.

## 5.2 CONCLUSION

The main objective of this study was to examine the impact of community health workers' motivations on maternal and newborn health services performance, Kigali-Rwanda. After analyzing data collected, the research findings revealed that respondents appreciate community health workers' motivations in terms of monetary incentives, non-monetary incentives and membership association. The investigation also found that maternal and newborn health services performance stimulate the satisfaction of respondents in terms of feedback on performance, Organizational support, Knowledge and attitude. As a result, it was concluded that Community health workers' motivations influence positively Maternal and newborn health services performance in Kigali city.

## 5.3 RECOMMENDATIONS

After conducting a research study, a researcher has to recommend on some points for improvement.

The researcher recommends community health workers in charge of maternal and newborn services; they should get sufficient incentive scheme such as monetary incentives, non-monetary incentives, independent management of their associations in order to perform better.

Maternal and New born health service workers should get feedback on performance for what they work, they should also get organization support in terms of organization values, contributions and cares about MNH well-being and fulfill socioemotional needs and finally MNH they should have sufficient skills as well as attitude to be highest level catalyst of work performance



## REFERENCES

- Afsar, H., & Younus, M. (2010). Recommendations to strengthen the role of lady health workers in the national program for family planning and primary health care in Pakistan: the health workers' perspective.
- Bagonza, J. et al. (2014). Performance of community health workers in managing Malaria, pneumonia and diarrhea under community case management in central Uganda.
- Baqi, A.H, et al. (2008). Effect of community-based newborn-care intervention package implemented through two service-delivery strategies in Sylhet district, Bangladesh: a cluster-randomized controlled.
- Basinga, Paulin. (2009). Impact of performance -based financing on the quantity and quality of maternal health services in Rwanda, Tulane University.
- Bhattacharyya, K, et al.(2001): Community health worker incentives and disincentives: how they affect motivation, retention and sustainability. Arlington, VA, BASICS/USAID.
- Bhutta, ZA., Lassi ,ZS. Pariyo G, & Huicho L(2010) Global experience of community health workers for delivery of health related Millennium Development Goals: a systematic review, country case studies, and recommendations for integration into national health systems. Geneva, WHO/Global Health Workforce Alliance.

- Catherine, Mugeni Murasa. ( 20110). Rwanda first international summit on community health, Rwanda community health system »Evidence to policy« Kigali-Rwanda.
- Center for Community health, Massachusetts. (2010). Community health Worker: essential to improve health in Massachusetts.
- Creanga, A.A, et al.(2007). Does the delivery of integrated family planning and HIV/AIDS services influence community-based workers' client loads in Ethiopia?
- Crigler, L. Hill, K., Furth, R., & Bjerregaard, D. (2011). Community Health Worker Assessment and Improvement Matrix (CHW AIM): A Toolkit for Improving Community Health Worker Programs and Services. USAID Health Care Improvement Project, Bethesda, MD;University Research Co.,LLC (URC).
- Edward, A. et al. (2007) . Examining the evidence of under-five mortality reduction in a communitybased program in Gaza, Mozambique. Transactions of the Royal Society of Tropical Medicine and Hygiene.
- Gilroy, K.E., & Winch, P. (2006). Management of sick children by community health workers: intervention models and program examples. Geneva, WHO/UNICEF.
- Glenton, et al. (2010). the female community health volunteer program in Nepal: Decision makers' perceptions of volunteerism, payment and other incentives. Social Science & Medicine.
- Global Health Work force Alliance (2010). Community health workers: key messages. Global Consultation on Community Health Workers, Montreux, Switzerland.
- Haines, A, et al (2010). Achieving child survival goals: potential contribution of community health workers.
- Haq, Z. Iqbal Z & Rahman A (2008): Job stress among community health workers: a multi-method study from Pakistan.International Journal of Mental Health Systems.

Howard, G., Bogh, C., Goldstein, G., Morgan, J. Pruss, A. Shaw, R. Teuton, J. (2002)

Healthy villages: A guide for communities and community health workers Geneva, World Health Organization.

Justice, J. (2003). A Study of the Concept of Volunteerism: Focus on Community-Based Health Volunteers in Selected Areas of Nepal.

Kothari, (2004). Research Methodology: Methods and Techniques.

Krejcie, Robert, V., Morgan & Daryle, W. (1970). Determining sample size for research activities: educational and psychological measurement.

Lehmann, U., & Sanders, D (2007). Community health workers: what do we know about them? The state of the evidence on programmes, activities, costs and impact on health outcomes of using community health workers. Geneva, WHO Department for Health.

MCHIP/USAID (2013). Integrated Community Case Management Report.

Mukherjee, J.J & Eustache, E. (2007) community health workers as a cornerstone for Integrating HIV and primary health care. AIDS Care.

MOH, Rwanda. (2010). Health management of information systems.

MOH, Rwanda. (2009). Rwanda Community PBF guidelines.

MOH, Rwanda. (2011) Rwanda ICCM training module.

MOH, Malawi. (2014). Monitoring Child Mortality through Community Health Worker Reporting of Births and Deaths.

National Institute of Statistics of Rwanda. (2018). Demographic and health survey.

Mahmood, S, & Ayub M, A. (2010) Accuracy of Primary Health Care statistics reported by community based lady health workers in District Lahore. Journal of the Pakistan Medical Association.

Association.

One million community health workers campaign, (2013). A Literature Review: The Case for  
Community Health Workers

Ojofeitimi, E.O, Jinadu, M.K, & Elegbe, I. (1988). Increasing the productivity of community health  
workers in rural Nigeria through supervision. Socio-Economic Planning Sciences.

Palazuelos, D. (2010) . Community participation: who participates? Who decides?

Havard college , Global Health Review.

Perry, H., Freeman, P., Gupta S, & Rassekh B. M (2009). Community-Based Primary Health Care  
Working Group, International Health Section. American Public Health Association, Washington,  
DC.

Prabhjot, Singh. (2011). One Million Community Health Workers.

Prasad, B. M & Muraleedharan., V. R (2008). A review of concepts, practice and policy concerns.  
CREHS, London.

Stekelenburg, J. Kyanamina S. S &, Wolffers I (2003). Poor performance of community health workers in  
Kalabo District. Zambia Health Policy.

Strachan, D., (2010). Health focused community based agents: motivation and incentives.

Swider S (2002). Outcome effectiveness of community health workers: an integrative literature reviews  
Public Health Nursing.

UNFPA, 2010. Maternal mortality reduction. Rwanda.

WHO, 2006. Working together for health. Geneva.

WHO. (2010). Global Experience of Community Health Workers for Delivery of health related  
Millenium Development Goals Global Health Workforce Alliance. WHO.

(2014). Targets and Strategies for Ending Preventable Maternal Mortality

Worley, H. (2018). Rwanda's Success in Improving Maternal Health.

## APPENDICES

### Appendix 1: Questionnaire

**Researcher: Dr. IVANG Andrew e-mail: andyivang2018@gmail.com**

**Date: \_\_\_\_\_ Dear respondent,**

This questionnaire is designed for obtaining data necessary for my research topic **“Impact of community health worker’s motivations on maternal and newborn health services performance, Kigali City-Rwanda”** The purpose of this questionnaire is purely academic. I request you to spare 5 minutes of your precious time to answer this questionnaire. Your responses will be treated with confidentiality that they deserve as academic material. I thank you in anticipation of your cooperation because you aid my research education through your responses. Your cooperation will be highly appreciated.

Please provide below your personal and professional information according to the scaling system provided by picking one of the given answers below.

**SECTION A:** Social - Demographics status of the respondents: Please to tick (✓) your answer on the following demographics information

1.Hospital name	Hospital.....									
2. Age	19		20-35		36-50		51-60		61+	
2. Gender	Male <input type="checkbox"/> Female <input type="checkbox"/>									
3. Marital Status	Single <input type="checkbox"/> Widow/Widower <input type="checkbox"/> Married <input type="checkbox"/>						Divorced <input type="checkbox"/>			
4. Educational Level	A2		A1	<input type="checkbox"/>	AO	<input type="checkbox"/>	Masters		Others	<input type="checkbox"/>

**SECTION B.** The statements below look at factors of community health worker’s motivations. Please indicate your level of agreement with each of the statement below by circling the appropriate number (1, 2, 3, or 4). The value of each number is presented in KEY below as follow:

KEY:

<b>1 = SD: Strongly Disagree</b>	<b>3 = A: Agree</b>
<b>2 = D: Disagree</b>	<b>4 = SA: Strongly Agree</b>

Statements		Strongly Disagree	Disagree	Agree	Strongly Agree
<b>CHWs Monetary incentives (Tick one option only -per row)</b>		<b>SD</b>	<b>D</b>	<b>A</b>	<b>SA</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	Receiving sufficient salary after monthly target visits				
2	Receiving incentive of monthly bonus				
3	Receiving quarterly incentive of Based Performance Finance				
4	I receive a bag				
5	I receive umbrella				
6	I receive rain coat				
7	Register book for monthly reporting				
8	Register book for pregnant women/productive age				
9	Register of follow up for pregnancy women				
10	Receiving training and follow-up				
11	Conducting monthly inventory based on my store card				
12	Advice to clients (referral) to use health facility services				
<b>2.Non CHWs Monetary incentives ( Tick one option only -per row)</b>		<b>SD</b>	<b>D</b>	<b>A</b>	<b>SA</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

21	Timer equipment for respiration count				
22	Mobile Phone equipment				
23	Thermometer equipment				
24	Weighing scale equipment				
25	Measurement of upper arm circumference equipment				
24	Continuous training				
27	Development of training material				
28	Training of CHW in general				
<b>3. Membership in CHWs associations</b> ( <i>Tick one option only -per row</i> )		<b>SD</b>	<b>D</b>	<b>A</b>	<b>SA</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
31	Receive quarterly supervision from health facility				
32	Receive per-diem during the monthly meetings				
33	Member of community health workers' association				
34	Receive 30% of quarterly PBF from my association				
35	Access loans from my association				
36	Receive quarterly supervision from health facility				

**Section C:** factors influence the maternal and newborn health services performance.

Statements		Strongly Disagree	Disagree	Agree	Strongly Agree
<b>Feedback on performance</b> ( <i>Tick one option only -per row</i> )		<b>SD</b>	<b>D</b>	<b>A</b>	<b>SA</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
41	I expect to continue contractions in child birth and the ripening of fruit				
42	I think you did a great job during delivery.				
43	I am encouraged to use Innovation and Creativity during delivery				
44	I will keep using Collaboration and Teamwork in maternal and newborn health services department				
<b>Organizational support</b>		<b>SD</b>	<b>D</b>	<b>A</b>	<b>SA</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
45	I would recommend to use high level prenatal care.				
35	Organizational structures in the maternal and newborn health team are well organized				
47	organizational cultures and styles in maternal and newborn health is high level.				
48	Effective organizational communication,				
<b>Knowledge and skills</b> ( <i>Tick one option only -per row</i> )		<b>SD</b>	<b>D</b>	<b>A</b>	<b>SA</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
49	High level of deontology of material and newborn health workers				
50	Parent behavior and parenting level of qualification				
51	Nutrition literate and practice of parent				
52	Socioeconomic obligation of community health workers culture				

After filling every question indicated above, please ensure to return this paper to the under mentioned address.



## PUBLIC HOSPITALS OF KIGALI MAP

