

**ROLE OF COMMUNITY HEALTH WORKERS MONETARY
INCENTIVES ON RETENTION AND HEALTH SERVICE DELIVERY IN
KIBWEZI DISTRICT, MAKUENI COUNTY, KENYA.**

BY

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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DEDICATION

To my family for their support, encouragement and prayers which gave me the motivation to work harder during the entire period of the study.

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
AMREF	African Medical Research Foundation
APHIA	AIDS, Population and Health Integrated Assistance
ASHA	Accredited Social Health Activist
BRAC	Bangladesh Rural Advancement Committee
CHEW	Community Health Extension Worker
CHW	Community Health Worker
CORP	Community Owned Resource Person
CU	Community Unit
DHMT	District Health Management Team
FGD	Focus Group Discussions
GOBI	Growth monitoring, ORT, breastfeeding and immunization
GOK	Government of Kenya
HIV	Human Immuno Deficiency Virus
IMCI	Integrated Management of Childhood Illnesses
KEPH	Kenya Essential Package of Health

KDHS	Kenya Demographic Health Survey
MOH	Ministry of Health
MOPH&S	Ministry of Public Health & Sanitation
NGO	Non Governmental Organisation
PHC	Primary Health Care
SPSS	Statistical Package for Social Sciences
VHC	Village Health Committee
VHW	Village Health Worker
WHO	World Health Organisation

ABSTRACT

The global policy of providing primary level care was initiated with the declaration of Alma-Ata in 1978. Kenya is a signatory to the Alma-Ata declaration. Implementation of the Community Health Services is a top priority for the Ministry of Public Health and Sanitation in Kenya. The second National Health Sector Strategic Plan (NHSSP II) defined a new approach to the delivery of Health Care Services to Kenyans, the Kenya Essential Package of Health (KEPH). CHWs are the key agents in the implementation of the community strategy. In Kibwezi District CHWs trained by MOPH&S do not receive monetary incentives while their counter parts trained by other partners (AMREF, USAID-APHIA II and USAID APHIA plus) receive monetary incentives. The study was done to find out the effect of monetary incentives on retention and performance of Community Health Workers in Kibwezi District in Kenya. A Cross-Sectional Comparative study design was used for the study. Qualitative data was collected through Key Informant Interviews and Focus Group Discussions were also conducted, one comprising of Community Health Committee members. Quantitative data was collected by the use of a structured questionnaire. Multi stage, purposive and simple random sampling were used to select 4 Community Units receiving incentives and 4 Community Units not receiving monetary incentives for comparison purposes. A total of 282 CHWs were interviewed 140 from Community Units receiving monetary incentives and 142 from CUs not receiving monetary incentives in Kibwezi District. Chi-square was used to establish the relationship between the research variables. Association between the variables was analyzed using chi-square tests and cross tabulations. Data was presented in form of figures, tables and narration. Age, [OR 3.6327 P= 0.022], marital status [OR 3.306 P= 0.018], education level [OR 2.901786 P= 0.002], and occupation [OR 2.901786 P= 0.002] were significantly associated with performance of CHWs. Subsequent training [OR =2.7469, P value= 0.008], supervision [OR =5.95522, P= 0.0001], training partner [OR 3.97, P= 0.023] were significantly associated with performance. CHWs receiving monetary incentives were better performers. There was a significant difference in the number of women referred for antenatal care (P =0.022), number of women with newborns who had been counseled on exclusive breastfeeding (P =0.043) and the participation of CHWs in community dialogue days. (P=0.005) between the two groups. CUs receiving monetary incentives had better key health indicators in CUs receiving monetary incentives. There was a significant difference in the proportion of children below 5 years who were fully immunised (P= <0.0001), proportion of women who had attended 4 ANC visits (P=0.028) and the proportion of pregnant women delivering with a SBA. (P=0.003). CUs not receiving monetary incentives had higher attrition rates of CHWs (13%) than CUs receiving monetary incentives (4%). (P=0.013). There is a need for government and partners to explore sustainable performance based financial incentives which will ensure all the CHWs receive monetary incentives. Findings from this study will be used by the policy makers as a guide to decision making on improvement of performance and retention of CHWs and which will in turn improve health indicators of the communities at large.

CHAPTER ONE: INTRODUCTION

1.1. Background of the study

The global policy of providing primary level care was initiated with the declaration of Alma-Ata in 1978. The countries signatory to Alma Ata declaration considered the establishment of Community Health Worker program as synonym with Primary Health Care approach. Thus in many developing countries PHC approach was seen as a mass production activity for training CHWs in 1980s. During these processes the voluntary health workers or CHWs were identified as the third workforce of “Human resource for Health”(Prasad, 2007). Following this approach CHWs introduced to provide PHC in 1980s are still providing care in the remote and inaccessible parts of the world (WHO, 2006). However over time, and under pressure of fiscal reform, the commitment of governments to CHW programmes faltered and, in many cases, their management and funding shifted to the non-state sector. As a result, CHW programmes of varying types, qualities, aims and standards proliferated, and doubts were raised about the potential of CHWs to deliver quality care. In the current era, CHWs are again being promoted as a key to scaling up health services in the face of both scarce human resources for health and limited financial resources. (Celleti F,*et .al.*, 2010)

Kenya is a signatory to Alma Atta Declaration, the international declaration for achieving health for all by the year 2000 held in 1978. The efforts to achieve the goals of this declaration and that of the Bamako initiative of 1988 are yet to be realized. This comprehensive broad-based PHC approach was abandoned for being too costly- due to a global recession and shrinking health budgets. It was replaced by the cost-effective “selective PHC” in form of vertical disease-specific interventions such as growth

monitoring, ORT, breastfeeding and immunization (GOBI), mainly targeting reduction in child mortality. The situation was further worsened by the introduction of World Bank and IMF austerity policies popularly known as the Structural Adjustment Programmes (SAPs) during the 1980s. This was mainly because of the introduction of 'cost sharing' whereby the beneficiaries had to pay some amount of money in the health facilities. Health records in Kenya have shown that when cost-recovery was introduced, the use of primary health care facilities by high-risk groups dropped. (Opiyo R. *et.al.*, 2009)

This led to adoption of a new approach to the way the sector intended to deliver health care services, the Kenya Essential Package for Health (KEPH). Implementation of the Community Health Services is a top priority for the Ministry of Public Health and Sanitation in Kenya (MOH 2006). The second National Health Sector Strategic Plan (NHSSP II) defined a new approach to the delivery of Health Care Services to Kenyans, the Kenya Essential Package of Health (KEPH). One of the main innovations of KEPH is the recognition and introduction of Level 1 services which are aimed at empowering the households to take charge of improving their own health. The intention of the Community strategy is to strengthen the capacity of communities to assess, analyze, plan, implement and manage health related development initiatives so that they can contribute effectively to the country's socio economic development.

The overall goal of the community strategy is to enhance community access to health care in order to improve productivity and thus reduce poverty, hunger, and child and maternal deaths, as well as improve education performance across all the stages of the life cycle. This will be accomplished by establishing sustainable community level

services aimed at promoting dignified livelihoods throughout the country through the decentralization of services and accountability. The workforce involved in implementation of the Community Strategy includes Community Health Workers, Community Health Extension Workers and Community Health Committees. A Community Unit which serves approximately 5, 000 people consists of 50 Community Health Workers who serve 20 households, and 2 Community Health Extension Workers who supervise and support the CHWs. In Kenya CHWs work, as volunteer part time workers, are reimbursed for direct costs incurred in Community Health Service provision and provided with protective clothing, bags to carry working materials, and an essential care package supplied and replenished by the CHEWs. (MOH,2005).

The establishment of CU and the training of Community Health Workers is mainly through the MOPH&S although other stakeholders are involved including AMREF, USAID-APHIA II, APHIA Plus, Kenya Red Cross Society and other NGOs. The MOPH&S has a target of 2550 and 4200 Community Units based on 52% of the population of different provinces in Kenya to be established by the year 2012 and 2014 respectively. Currently the number of Community Units established is 998 which is lower than the approximated rate of 750 CU per year. In Kibwezi District the study area there is a total of 18 Community Units,162 members of Community Health Committees and 840 Community Health Workers recruited and trained, out of which 190 are trained by AMREF, USAID-APHIA II and APHIA plus which represents 5 CU out of the total 18 CUs established.(DMOH Report, 2011)

In Kibwezi District the study area, Kibwezi Rural Health Scheme (KRHS) was founded as a joint venture between the Ministry of Health and AMREF in 1978. It was started as a prototype large-scale, low-cost community-based health care (CBHC) project in a semi-arid part of Kenya with a dispersed, low-density population which was inadequately covered by conventional medical facilities. The overall goal of KRHS was to activate a rural health scheme which would provide adequate health coverage to a semi-arid area, with a widely scattered population (poorly served by health facilities) in Kibwezi Division, using a health centre staffed along standard government norms without incurring extra expenditure. The project sought to initiate, sensitize, train and technically support CHWs of Kibwezi Division and carry out refresher training for health personnel in the area. (Kibua. *et.al*, 2009)

In the Maternal and Child Health Care Project, activities included a workshop to train TBAs and prepare teaching guidelines for TBAs, CHWs and RSKs in FP distribution. Some of the outputs of the project include training of 80 health care professionals, 617 TBAs and 718 CHWs (Child growth monitoring centres have been increased and there is a rise in use and demand for FP services through CHWs, TBAs and increased supplies through rural shops. In addition, there was improved attendance at Kibwezi antenatal and FP clinics and mobile units, and reduced complications of pregnancy from clients living in these areas. Other outputs included increased knowledge of family planning and HIV/AIDS awareness in schools. (Kibua. *et.al.*, 2009).

Maternal Child Health interventions undertaken realised an increase in the number of mothers delivering at health facilities from an estimated 30% to 78% in 2005 compared

to 41.6% nationally in 2003. Closely related to the MCH/FP project was the women's productive and reproductive health initiative that began in 1995 with the major inputs being social mobilisation, awareness raising and advocacy, provision of MCH/FP services and reproductive health education. The main achievement of this project was training of 250 TBAs and CHWs in comprehensive reproductive health including STI/HIV/AIDS with an emphasis on counselling, treatment, compliance and partner notification (AMREF, 2001).

With regard to the MCH/FP initiative, two major outcomes were realised. These included a decrease in infant mortality rates as a result of the child survival interventions and efforts of TBAs, CHWs and RSKs, and reduction in maternal mortality due to complications of pregnancy (Maneno et al, 1987). Over a period of ten years (1985-1995), the infant mortality rate dropped from 18% to 10% as compared to a drop from 9% to 6.1% at national level. Nevertheless, the overall infant mortality rate was higher in Kibwezi compared to the national level. Other MCH indicators show a positive trend and thereby positive outcomes with regard to child health. For example, between 1994 and 1997, the DPT 3 immunisation coverage increased from 89.6% in 1997 to 93.9% in 2000 in Makueni District while it decreased from 89.2% to 80.3% nationally. Further, while between 1994 and 1997 the measles immunisation coverage increased from 78.6% to 85.4% in Makueni District and 76.8% to 81.4% at national level, from 1997 to 2006 the immunisation coverage dropped from 85.4% to 82.3% in Makueni District as compared to a drop from 81.4% to 76.7% at national level (WMS II, 1994). The decline was, however, less steep in Makueni than nationally. The same trend was repeated with regard

to data on full immunisation coverage increasing from 78.6% to 85.4%. (Kibua. et.al., 2009).

In Kenya the effectiveness of CORP-based programmes has been demonstrated in many districts throughout the country be it on pilot and small scale. However due to lack of incentives it is difficult to sustain the morale of CORPs and motivation for long. They have therefore fallen prey to agents whose agendas may not be consistent with those of either the community or the Ministry of Health, and who may thus disrupt operations towards set objectives. Incentives tend to be limited to uniforms, protective wear, drug kits, reimbursement of direct costs and periodic rewards for excellent performance. Whatever the incentives are, they seem to be best if handled by the local committees rather than being paid for centrally (MOH, 2006). The CHWs have demonstrated that besides receiving various non-monetary incentives from the government and development partners, they would be satisfied if monetary incentives are provided to them. (Oyore *et.al* ,2010).

1.2. Statement of the problem

Kibwezi district is one of the under-served areas in Kenya and the doctor-patient ratio is 1:119,879 indicating a heavy workload and therefore inadequate access to health care services for a larger proportion of the population. It faces major development challenges that include high population growth rate, poverty and the HIV/AIDS pandemic. (GOK, 2008). In Kibwezi District Contraceptive use among married women is fairly low at 40 per cent compared to the national contraceptive prevalence rate of 46% (KDHS, 2008). Deliveries conducted by skilled birth attendants is low at 36% and only 30% deliveries are conducted in a health facility compared to 44% and 43% nationally respectively. The

total fertility rate (TFR) of Kibwezi district is 5.1 children per woman which is higher than the national level of 4.6 (KDHS, 2008). Kibwezi district has comparatively high underweight and stunting levels for children under five years of age; with 20 per cent of children being underweight while 34 per cent are stunted. (MICs, 2008).

Results of an evaluation of the community strategy concluded that the community strategy has potential benefits in improving health service coverage and quality leading to a more productive living bearing in mind that its implementation is a vehicle for social transformation towards improved quality of life at the community level.(Oyore *et. al.*, 2009).Community Health Worker programs face many problems, including remuneration, poor training, inadequate supervision, lack of supplies, and poor relationships with communities. One of the most frustrating elements of many CHW programs across countries is their high attrition rate. High attrition rates have been reported in many CHW programmes: Attrition rates for CHWs of 3.2 percent to 77 percent are reported across countries, with higher rates generally associated with volunteers. Attrition rates of 30 percent over nine months in Senegal and 50 percent over two years in Nigeria have been reported. CHWs who depend on community financing have twice the attrition rate as those who receive a government salary. (Bhattacharyya *et al.*, 2001).

A community Strategy convention held in Kenya concluded that CHWs should be given a stipend. However this has not been implemented due to financial constraints. This is besides the government allocating some funds for paying CHWs through the 2010/2011 and 2011/2012 budget. Despite this allocation no disbursement has been made for

payment of the CHWs in any part of the country. However, some health development partners have been giving monetary incentives to the CHWs in the form of a stipend. One of the Districts where CHWs have received such incentives is Kibwezi District through AMREF, APHIA II and APHIA Plus. CHWs in other parts of the country are receiving non-monetary incentives.

In Kibwezi District the study area CHWs trained by AMREF, APHIA II and APHIA Plus have been receiving monthly incentives during their monthly meeting and those trained by MOPHS are volunteers and do not receive monetary incentives. If some but not all CHWs or other community workers are paid, tension can result between the paid and unpaid groups. In Colombia CHWs who receive financial compensation for their work have generated tension and envy among other CHWs and community leaders who do not receive any remuneration. (Bhattacharyya *et. al.*, 2001). The DHMT of Kibwezi District believes that those CHWs receiving monetary incentives are better performers than those without (DMOH Kibwezi, report 2010). Since no evaluation has been done to find out the effect of monetary incentives on performance to arrive at this conclusion, there is need to conduct a study which will address this gap.

1.3. Justification

Although AMREF, APHIA II and APHIA plus have been in Kibwezi implementing health-related interventions, there is no coherent documentation to show what the organisations have achieved. It is therefore important to determine the experiences and achievements that have so far been realized following the introduction of monetary incentives. This will help in determining whether the use of monetary incentives have translated into improved health outcomes for the people of Kibwezi.

The attrition rates of CHWs in Kenya is not known. The study will assist in determining whether the monetary incentives have translated into improved performance of service delivery and retention of CHWs in Kibwezi district. The findings generated could also be useful in replicating implementation of community strategy in other areas. The question of how to sustain a long-term CHW program and to retain CHWs requires additional investigation. There is need to inform and support decision making regarding support of CHWs and to assess the effectiveness of paid CHWs versus voluntary CHWs.(Zulfiqar, 2010)

1.4.Research Questions

The research questions of this study were:

- i) What are the socio demographic characteristics of Community Health Workers in Kibwezi District and how do their effect on performance?
- ii) What is the support provided to Community Health Workers and how does it influence their Performance?
- iii) How does provision of monetary incentives provided to Community Health Workers influence their performance indicators?
- iv) What is the influence of monetary incentives on attrition rates of Community Health Workers?

1.5 Hypothesis

1.5.1 Null Hypothesis

- i. There is no difference in performance of Community Health Workers receiving monetary incentives and those not receiving monetary incentives.

- ii. There is no difference in attrition rates of community Health Workers receiving monetary incentives and those not receiving monetary incentives.

1.6 Objectives

1.6.1 Broad Objective

The general objective of the study was to determine the role of Community Health Workers monetary incentives on performance and retention.

Specific Objectives

- i) To determine the socio demographic characteristics of Community Health Workers in Kibwezi District and their effect on their Performance.
- ii) To determine the support provided to community Health Workers and its influence on their performance in Kibwezi District.
- iii) To determine the influence of monetary incentives on performance indicators of Community Health Workers in Kibwezi District.
- iv) To determine the influence of monetary incentives on attrition rate of Community Health Workers in Kibwezi District

1.7 Significance and anticipated output

The findings will be used to make relevant recommendations to the Ministry of Public Health and Sanitation, Non-Governmental Organizations and donors regarding the implementation of strategies which can be used to motivate Community Health Workers in the whole country to ensure sustainability of the community health services which will be geared towards empowering communities with the main aim of reducing the disease burden at the community level.

1.8.Limitations and Delimitations of the study

1.8.1 Limitations

This study was based on the differences in performance and retention between CHWs receiving monetary incentives and those not receiving monetary incentives at Kibwezi District, thus other factors were excluded like community factors affecting the CHWs. This was a limitation because some of this factors may affect the performance and retention. It was difficult to get data on attrition as the CHWs involved couldn't be involved in the study as they had already dropped out.

1.8.2 Delimitations

There had not been a similar study in the district to identify effect of community health workers monetary incentives on performance. This kind of study enabled identification of role played by monetary incentives on the performance and retention of Community Health Workers.

1.9. Conceptual framework

Several factors contribute to the performance and retention of Community Health Workers. These factors may be inter-related and may contribute to the health indicators of the community. Socio-demographic factors of the CHWs may affect the motivation of CHWs and other factors such as the CHW programme policies including; training, supervision, selection and community involvement may also influence the motivation of CHWs to perform their roles. Individual factors of CHWs which may affect their motivation to perform include their need satisfaction, self-efficacy, identity, programme goals, intentions and outcome expectations. Environmental factors include support and work load. The motivation of CHWs may influence the performance and retention of CHWs which may have an influence on the experience of outcomes. This relationship between the factors is illustrated on figure 1.1 below.

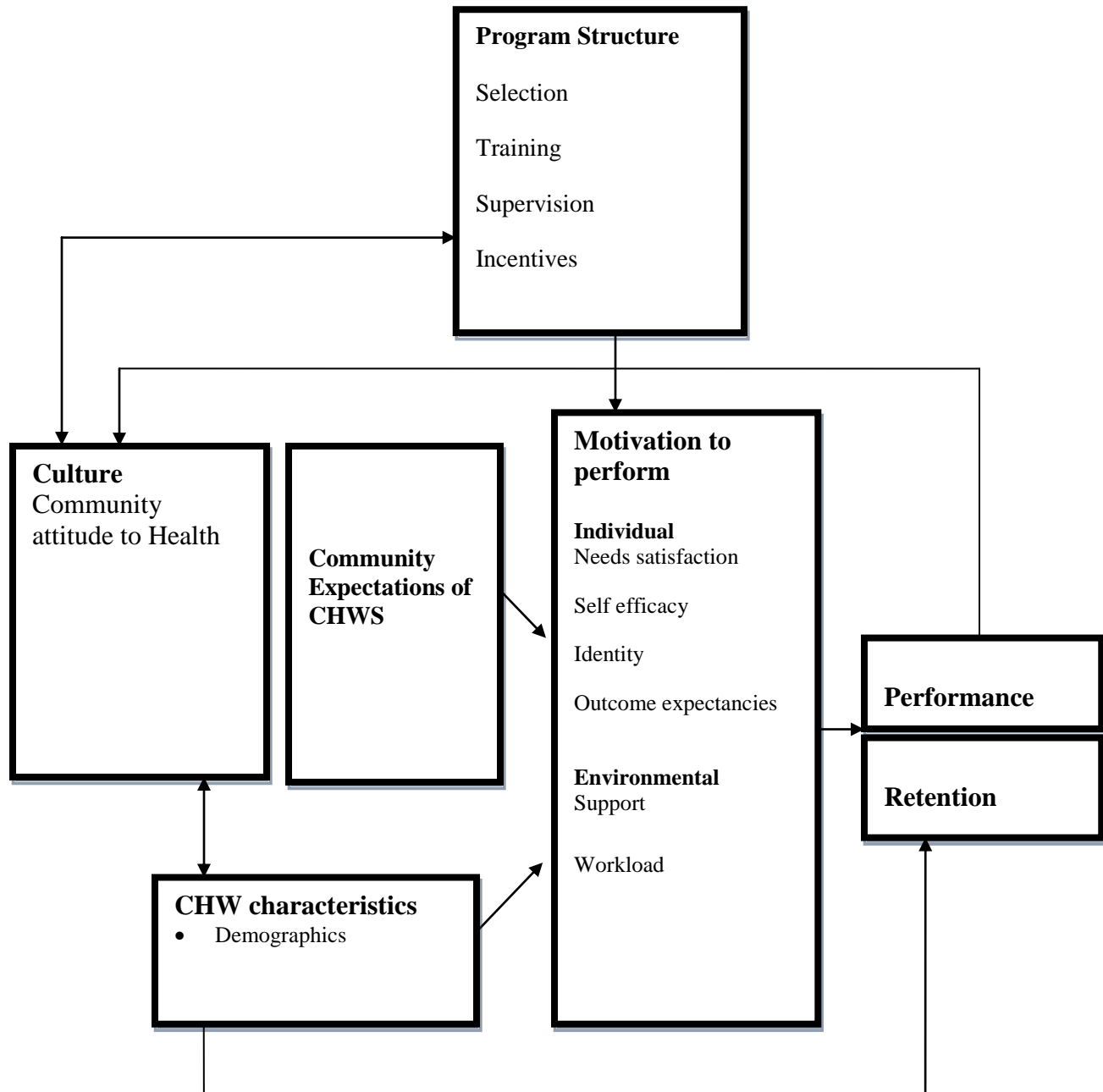


Figure 1.1: Diagrammatic representation of the Conceptual Framework
 (Adapted from Franco *et al*, 2010)

CHAPTER TWO: LITERATURE REVIEW

2.0. Introduction

During the Alma Ata conference in 1978, CHWs were identified as one of the cornerstones of comprehensive primary health care. CHWs had the potential to deliver equitable health services to populations living in remote areas and to help fill the unmet demand for regular health services in many countries. Such workers could solve the problems of poor access to health care and the high cost of doctors and reduce the social and cultural barriers to health care. While providing simple technical and educational interventions, CHWs could also serve as an entry point into the larger cultural, environmental, political, and social factors that affect health. Since the role of the CHW was re-emphasized during the Alma Ata conference in 1978, there have been several variations and definitions of this term. The specific roles and responsibilities of CHWs vary greatly among countries, depending on people's access to health care and the presence of other cadres of health workers. (Bhattacharyya *et. al*, 2001)

By definition a CHW is not usually a full-time salaried employee of the Ministry of Health (MOH) or other organization. The primary reason is the belief that the MOH cannot afford to pay CHWs over the long term. Compensation of CHWs for their services, however, is a recurrent issue in many programs. CHWs often work long hours, even full time, alongside salaried employees, which inevitably leads to demands by CHWs for regular compensation for services provided. While full-time salaried CHWs are relatively rare, many CHWs receive some type of cash incentive. (WHO, 2007).

2.1. Global situation on implementation of Primary Health Care and community based health care

In Brazil, CHWs were officially integrated into the civil service structure in 1991 and the cadre was recognized as a profession in 2002. All CHWs receive a salary and undertake compulsory introductory courses offered by regional health schools and technical schools and receive in-service supervision. (Cellesti *et.al*, 2010). After the initial 12-week period, ongoing education is provided during local monthly and quarterly meetings. Basic equipment and supplies include: A distinctive dress and ID badge, A Clipboard, A format of Basic Care Information System, Bicycle, canoe or ship, if the CHW needs to reach remote places, Scale for weighing children at home, Chronometer to verify respiratory rate, Thermometer, Tape measure and Educational material. Periodically, the instructor/supervisor (a nurse) brings together the CHWs, to evaluate their work and to reorient their activities. (Zilfiqar *et.al*, 2010)

Thailand has a long history of PHC development which started before the Alma Ata Declaration of 1978. Since then, the PHC has evolved through many innovative health activities: community organization, community self-financing and management, the restructuring of the health system and multi-sectoral co-ordination. Through this, improvements in the nutritional status of children under five, household's accessibility to clean water, immunization coverage, and the availability of essential drugs have been observed. PHC has been successful in Thailand because of community involvement in health, collaboration between government and non-government organizations, the integration of the PHC programme, the decentralization of planning and management, inter-sectoral collaboration at operational levels, resource allocation in favour of PHC, the management and continuous supervision of the PHC programme from the national

down to the district level, and the horizontal training of villagers to villagers (Singuan Nitayarumphong, 1990).

In Thailand Village health volunteers are trained in primary health care aspect for 7 days and later on, specialized on-the-job training is provided for 15 days. The Village Health Volunteers (VHVs) are provided with simple non-prescription medicines that are effective in treating common illnesses. VHVs work under the direct supervision of a primary health care officer at the sub-district level, whereas the district health officer serves a second-level supervisor. There is no monetary incentive provided to the VHVs, except for free health services for themselves and their immediate family members. They also have special quotas for VHV families to apply to government nursing. As a part of non-monetary reward, VHVs receive public recognition from both the community as well as the formal health sector. VHVs are treated as part of the formal health system, and the district health services use them in the out-patient department at health centers, when there is a surge of work or a personnel shortage. (Zilfiqar *et.al*, 2010)

In India, PHC is the first contact point between village community and the Medical Officer. The PHCs were envisaged to provide an integrated curative and preventive health care to the rural population with emphasis on preventive and promotive aspects of health care. The PHCs are established funded and maintained by the State Governments under the Minimum Needs Programme (MNP)/ Basic Minimum Services Programme (BMS). There is recognition, provision of uniform, apron, identity card, and awards for ASHAs. The ASHAs also receive performance-based incentives for promoting universal immunization, referral and escort services for health care programmes and construction

of household toilets. The Management and utilization of the health information is left to the HSAs. The HSA's are supervised by Environmental Health Assistants (EHA), however there were indications that other technical cadres e.g the nurses are involved in the supervision of HSA. The Convergence between Health and WCD has been institutionalized hence a strong linkage between community and volunteers/staff. (Zilfiqar *et.al*, 2010)

The Accredited Social Health Activists(ASHAs) in India who are equivalent to CHWs, are women aged between 25-45 years and are volunteers. They are elected from the community through a process involving community and grass root level functionaries but they must be literate with education up to class eight. There is a clear Data collection, management and utilization system from the village level to the district level. Data is collected by HSA at village level then analyzes it and provides feedback to the Village Health Committee and community on monthly basis. A village health register is maintained by the Anganwadi Worker (AWW). ASHA play a role in helping the AWW to complete and update the register by maintaining a daily diary. The ASHAs have a drug-kit to deliver first-contact healthcare and they are first port of call for health related demands of deprived sections of the population, especially women and children, who find it difficult to access health services. There exists a well managed referral system where the government tenders to a private firm at a cost of 14,000 rupees per month and fuel charged per kilometers (MOPHS, 2008).

In Nepal the debate intensified in 1988 when the FCHV program was established and volunteers were given Rs 100 per month. Provision of this allowance could not be

sustained and was discontinued after the first year. It was agreed later that there was need for them to be remunerated or receive regular incentives. These could be in the form of financial allowances or non-monetary benefits such as bicycles, radios, saris etc. Such benefits were considered to have a positive influence on the family's willingness to give permission for women to serve as volunteers; improve the volunteer's status in the community; provide compensation for the time taken from household and agricultural responsibilities; and be an incentive for long-term service. In addition to remuneration and incentives, community recognition and public appreciation for the contribution of volunteers in the form of awards, certificates, ceremonies, etc., was desired especially by volunteers. This recognition was identified by volunteers as an important factor in their own sense of satisfaction and motivation to continue as a volunteer (UNICEF, 2004)

In Pakistan, the Lady Health Workers (LHW) are basically provided with oral contraceptive pills and condoms and with a limited range of inexpensive essential drugs for those health problems that are common. The cadre of LHW Supervisors has been developed to provide supervisory support to the LHWs on daily basis. The Program has a provision for one LHS for 25 LHWs i.e. a ratio of 1:25 reference. LHS are trained for one year and their training is carried out in following three phases. During their initial training of three months they are paid Rs. 50 per day for first three months followed by Rs. 1600 (approx USD 20) per month. They are also given an annual raise of Rs. 100 as an incentive, whereas, their monthly salary is Rs. 3090 (approx. USD 38). Other incentive they receive is in the form of money which they earn after selling contraceptives to their clients. They charge Rs. 3 per cycle of pills and Rs. 0.50 per condom. Professional advancement and promotions are offered to LHW to learn new

skills to advance their career as LHS and later on as Field Program Officer (FPO) on completion of minimum education level and experience required to reach the next level. Hence, advancement is intended to reward good performance or achievement. (Zilfiqar *et.al*, 2010)

In Bangladesh's BRAC programme CHWs "discontinued their work due to lack of time, lack of 'profit', and family's disapproval. The effects of the dropouts were decreased achievement of targets and a loss of money in the amount of \$24 (U.S.) per dropout [CHW] for their training and supervision" (Khan *et al.*, 1998). The turn-over of CHWs is high for a number of reasons, the most important being poor selection and low remuneration". (Ofosu- Amaah, 1983) Another frequently cited reason was "movement upwards to higher positions in the health system, marriage or family matters, and finding better positions in other fields". Although volunteer programmes were cheaper in terms of salaries, "very high attrition rates mean not only that frequent training of new volunteers `is required, but also that it is difficult to keep track of volunteers and to judge their usefulness" (Gilson *et al.*, 1989). It stands to reason that retention can and should be addressed as part of a broader package of management interventions of Community Health Workers Programmes. (Bhattacharyya *et.al*, 2001)

2.2. Primary Health Care and community based health care in Africa

In Ethiopia CHWs are any persons willing to volunteer their services and 50% of them are women. The CHWs are trained for 3-5 days and some partners reimburse transport as a form of motivation. Their coverage area depends on the population density and is between 20-50 households. There exists a Monitoring and Evaluation (M&E) system in which EPI data is transmitted from the health post to the Health Center. However there

are no data collection tools and the CHEWs use note books to collect information. In a system established in Ethiopia's Gumer District, each household contributed one *birr* (US\$0.15) a year to support the community health agents (CHAs) and traditional birth attendants (TBAs). This contribution was enough to cover a modest stipend for all trained CHAs and TBAs, and the attrition rate fell from 85 percent a year to zero (Wubneh, 1999).

In Malawi there are no equivalents of CHWs and CHEWS but instead there are Health Surveillance Assistants (HSAs), who are institutionalized and are paid through the government payroll. HSAs are trained for over a 10-week period by the Ministry of Health for a wide range of primary prevention and clinical care areas. At the completion of the training, they receive a certificate of 'attendance', which allows them to provide some level of primary care. To date, the health surveillance assistants have not been recognized as a healthcare provider group by any of the regulatory councils or provider associations. They are managed by the Ministry of Health and provided salary and remuneration as other low-skilled labourers. (Cellesti *et.al*, 2010)

In Nigeria, a Rural Health Program, of the Christian Reformed Church in Gongola State found that Village Health Workers (VHWs) left their posts after one to three years. The VHWs worked one or two hours a day and received a small salary (the equivalent of US\$13 to \$27 a month in 1984). Men with lower monthly incomes worked two years and women with lower incomes worked one year, while men with higher pay stayed an average of 3.25 years and higher paid women stayed 1.5 years. Small salaries were reported most often as the reason VHWs found the work difficult. (Gray, 2008)

2.3. Primary Health Care and community based health care in Kenya

The PHC was launched in Kenya as a pilot programme in 1980 and rolled out to 14 districts in the country as Community Based Health Care (CBHC) programme in 1986. In the 1980's and early 1990's, Kenya made considerable achievements in developing a health care system based on the Primary Health Care (PHC) model through community participation by addressing all and other additional elements of PHC. The concept of PHC as originally outlined by the world's nations at the 1978 Alma-Ata Conference sought to establish the accountability of health workers and health ministries, with guarantees to meet the basic health needs at low cost. (Opiyo R. *et.al*, 2009)

Primary Health Care interventions in Kenya were enhanced by the Bamako Initiative of 1987 which aimed at increasing access to primary health care by raising the effectiveness, efficiency, financial viability and equity of health services. This resulted in acceleration of the uptake of health promoting and disease preventing maternal and child health programs. This led to availability of essential drugs at an affordable cost, through the sale of essential drugs in community pharmacies that clearly reduced both financial and geographical barriers to access (Opiyo R. *et al*, 2009).

The CBHC involved active participation of communities in decision-making concerning their priorities in health promotion and disease prevention. The commitment of the Kenya Government in reinforcing PHC was emphasized in the National Development Plans of the 80s and 90s: 1980-84; 1985-88 and 1989-93. In particular, the 1989-93 national development plan provided a general framework for PHC development. Attempts were also made to change the attitude of health personnel towards PHC through capacity

building that targeted the District Medical Officers of Health (DMOH) and the District Health Teams, and these were charged with the responsibility of coordinating the PHC activities in the districts (WHO, 2003).

In Kenya CHWs work, as volunteer part time workers, are reimbursed for direct costs incurred in Community Health Service provision and provided with protective clothing, bags to carry working materials, and an essential care package supplied and replenished by the CHEWs. The kit serves 5, 000 people for three months and is delivered to the CHEWs quarterly, making four deliveries a year. Each kit contains basic drugs, renewable supplies and basic equipment, packed in one carton. The CORPs may receive a certificate of recognition after five years of service. Moving away to take up opportunities that may arise is appreciated and not discouraged and condemned, and the CORP is replaced. CORPs, training begins with four weeks of basic training followed by on-the-job training, essentially lifelong. The course should be in the community with field and health facility practice elements. Refresher training is undertaken from time to time, according to need, but at least every quarter (MOH, 2006).

2.4. Retention and attrition of community health workers

High attrition rates have been reported in many CHW programmes, Attrition rates for CHWs of 3.2 percent to 77 percent are reported, with higher rates generally associated with volunteers. One review found attrition rates of 30 percent over nine months in Senegal and 50 percent over two years in Nigeria. CHWs who depend on community financing have twice the attrition rate as those who receive a government salary (WHO, 2007)

In the Solomon Islands, attrition was attributed to multiple causes in addition to inadequate pay, including family reasons, lack of community support, and upgrading of health posts. Training before the age of 20 and irregularity in remuneration were found to be the main factors explaining why village health workers leave their posts; only 58% of VHWs surveyed had been paid regularly, and 66 of the non working VHWs surveyed had quit because of pay-related reasons. For others, the VHW post was a steppingstone to becoming a nurse. (Chevalier *et al.*, 1993)

In Bangladesh's BRAC programme CHWs "discontinued their work due to lack of time, lack of 'profit', and family's disapproval. The effects of the dropouts were decreased achievement of targets and a loss of money in the amount of \$24 (U.S.) per dropout [CHW] for their training and supervision" (Khan *et al.*, 1998). The turn-over of CHWs is high for a number of reasons, the most important being poor selection and low remuneration". (Ofosu- Amaah, 1983) Another frequently cited reason was "movement upwards to higher positions in the health system, marriage or family matters, and finding better positions in other fields". Although volunteer programmes were cheaper in terms of salaries, "very high attrition rates mean not only that frequent training of new volunteers is required, but also that it is difficult to keep track of volunteers and to judge their usefulness" (Gilson *et al.*, 1989). (Battacharya *et.al*, 2001)

In Busia District, Kenya the dropout rate among CHWs after one year was 17.3%. The retention rate of CHWs was 30% after 3 years. The study findings indicated that CHWs were not being given any financial incentives. The CHWs reported that what would motivate them to continue working as CHWs , included 75% the working materials

(bags , IEC materials , notebooks , pens) and 65% financial incentives. There was an increase from their pre-recruitment expectations where only 43% of CHWs expected financial and material incentives . Financial incentives were linked to CHW retention. (Oweke C, et al., 2013). In a study done in Western Kenya, an attrition rate of 33% was observed among the CHWs. The reasons for dropout included: the cultural environment within which CHWs operated; lack of adequate support from area NGOs; poor selection criteria for CHWs; and power differences between NGO officials and CHWs which fostered lack of transparency in the NGOs' operations. (Olang'o et al., 2010)

Whether CHWs ought to be volunteers supported in kind by the community, or paid through community or government funds, has been much debated. Much of the literature tends to imply that volunteers are the ideal as its assumed that there is a sufficient pool of willingness to conduct voluntary social services(WHO, 2007). However, the reality is different, in acknowledgement of the fact that as a rule CHWs are poor people, living in poor communities, who require income. Evidence shows that most programmes pay their CHWs either a salary or an honorarium. Even NGOs tend to find ways of financially rewarding their CHWs. (WHO, 2003). There are many advantages to providing CHWs with cash incentives. When agents are paid, rigorous supervision can be exercised, programs can be implemented rapidly, work routines can be standardized, and service quality can be maintained. Negative reinforces such as firing or punishment can be used to encourage desired performance. Payment is also seen as helping to build some economic equity in a minimally literate or economically disadvantaged population. (Bhattacharyya *et. al*, 2001)

CHAPTER THREE: MATERIALS AND METHODS

3.0. Introduction

This chapter specifies the materials and methods used in assessing the effect of community health workers monetary incentives on retention and health service delivery in Kibwezi district, Kenya. It gives a description of the study design, study area, sampling techniques and research tools, data collection techniques and analysis used as well as the ethical considerations for the study.

3.1. Study design

The study design was a Cross-Sectional Comparative study covering Community Health Workers in Community Units which have been receiving monetary incentives in Kibwezi District and a comparison group of Community Health Workers in Community Units not receiving monetary incentives in Kibwezi District. A comparative study was preferred because it entails comparing as well as describing groups without any effort to control confounding or intervening variables.

3.2. Variables

The dependent variables were retention and performance of Community Health Workers.

Retention of CHWs which was assessed in terms of the number of CHWs retained.

The performance of CHWs was assessed through the comparison of performance indicators of CHWs which included:

- i. Proportion of pregnant women referred for Ante Natal Clinic within first trimester
- ii. Proportion of Pregnant women counseled on Individual Birth Plan
- iii. Proportion of Mothers with newborns counseled on Exclusive Breast Feeding.
- iv. Participation in Community dialogue days.

Performance was also assessed through the differences in the outcome health indicators of community units which included:

- i. Proportion of Fully immunized children >5 years
- ii. Proportion of pregnant women completing all four ANC visits
- iii. Proportion of deliveries by Skilled Birth attendants.

The independent variables were socio demographics of Community Health Workers and monetary incentives.

3.3. Location of the study

Kibwezi District is in Makueni County of Kenya and was carved from the original Makueni District and comprises of four divisions: Makindu, Machinery, Mtito Andei and Kibwezi. The new Kibwezi district is more food insecure and more prone to the dreaded Aflatoxicosis. The district stretches an entire 230 Kilometres of the Nairobi – Mombasa road. (GOK, 2007) The altitude of the District varies from 600m near the Athi River belt to the eastern to high grounds of 1100m along the Chyulu hills to the western side of the District. (GOK, 2002).

Kibwezi district is one of the under-served areas in Kenya. It faces major development challenges that include high population growth rate, poverty and the HIV/AIDS pandemic. The current population growth rate is 2.8% per annum compared to 2.7% nationally (GOK, 2008). There are six hospitals, 14 health centres, 59 dispensaries and 59 nursing homes; doctor-patient ratio is 1:119,879 indicating a heavy workload and therefore inadequate access to health care services for a larger proportion of the population. (GOK, 2002). (GOK,2005).

3.4. Target population

The study population comprised of community health workers in established Community Units which had been receiving monetary incentives and those not receiving monetary incentives which had been operational for 6 months and above in Kibwezi District.

Inclusion/ exclusion criteria

Inclusion: All CHWs in CUs in Kibwezi District established more than 6 months preceding the study.

Exclusion: All CHWs in CUs in Kibwezi District established for over 6 months preceding the study.

3.5. Sampling techniques and sample size determination

In Kibwezi District the study area there are 18 Community Units each with 50 Community Health Workers except 2 which have each 20 CHWs. The units which have CHWs who have been receiving monetary incentives are 5; 2 of them under AMREF each with 50 CHWs and 2 under USAID APHIA II and APHIA Plus each with 20 CHWs. Multi stage sampling was used to select CUs receiving monetary incentives and those not receiving monetary incentives. Purposive sampling was used to select the CUs and CHWs that have been receiving monetary incentives and simple random sampling was used to select CUs and CHWs that are not receiving monetary incentives. A sampling frame was developed and all the CUs not receiving monetary incentives was listed and using a table of random numbers 4 CUs were selected. This translated to 140 CHWs receiving monetary incentives matched with 142 CHWs not receiving monetary incentives making a total sample size of 282.

The number of Community Health Workers who are trained in Kibwezi District is 840.

Thus, the sample size was determined as follows (Kothari, 2004):

$$n = \frac{N}{1+N(e)^2}$$

Where: n= Desired sample size

N=Population size

e=Level of precision (error margin)

Therefore, $n=270.967$, $n=271$

3.6. Construction and research instruments

A structured questionnaire was developed for collection of quantitative data. The questionnaire was pretested to establish its validity and reliability before the actual field work was done. The CHWs questionnaires were administered in English because all CHWs can read and write in English to minimize bias introduced by translation. Focus Group Discussion Guides were developed for the CHCs which contained open ended questions that were used to guide discussions during the Focus Group Discussions.

3.7. Pilot study

The pilot study was conducted in Mbooni a neighboring district to Kibwezi District the study area. The pilot study acted as a pretest of the research instruments to ascertain its appropriateness, suitability and actual fieldwork logistics. This assisted in the addition of more questions where more information was needed and also acted as a guide to proper phrasing of vague questions.

3.7.1 Validity

Validity of the questionnaire was ensured by reassurance of the CHWs that no victimization would be introduced due to their responses as the information given would be confidential and not reported to their supervisors. They were also interviewed in the absence of the CHEWs or CHC members. The CHEWs were also assured that their response on the performance of CHWs would not be reported to the CHWs. They were also assured that the information collected would be confidential and used only for the purposes of the research.

3.7.2 Reliability

Reliability is the measure of the degree to which a research instrument yields consistent results or data after repeated trials. In order to standardize the reliability of the questionnaire; to ensure that when it is used by the same or a different investigator the results would be the same a structured questionnaire was used. The structured questionnaire was administered in English without interpretation to another language which may have introduced bias as all the CHWs can read and write. To reduce the interview bias Research assistants were identified and underwent an intensive training on the use of the study instruments(Questionnaire) prior to the research. The principal investigator checked on all the filled questionnaires upon receiving them from the research assistants to ensure that they were filled and when anomalies were detected a call back was performed. The principal investigator conducted at least 5% repeat interviews for the CHWs for quality assurance purposes.

3.8. Data collection techniques

Structured questionnaires were designed, piloted and used to collect quantitative data from the Community Health Workers in the selected CUs in Kibwezi, the study area. A

total of 282 CHWs from the sample population were interviewed. Key Informant Interviews were conducted using a semi-structured tool for key people involved in the implementation of Community Strategy in Kibwezi District. These include; DHMT members (District Public Health Officer, District Public Health Nurse), Community Strategy Focal Point Person, Community Health Extension Workers (CHEWs), Programme Officers of AMREF, USAID-APHIA II and APHIA Plus. In this regard, a total of 15 KIIs were conducted.

A total of 6 Focus Group Discussions (FGDs) were held comprising of CHC members. Three FGDs comprised of CHC members in CUs which have been receiving monetary incentives and the other three comprised of CHC members in a comparative group not receiving monetary incentives. Simple random sampling was used to select 3 CUs out of the 4 CUs selected for the study and all its 9 members selected. All the members were converged in a central place for the discussion using the FGD guide which ran for a period of 45 minutes. The principal investigator acted as the session's moderator and the research assistant acted as the repertoire and assisted in the listing of the responses from the participants. An observer was used to control the group dynamics and ensure that everyone contributed to the discussion without others dominating. A tape recorder was used to record the information for the purposes of revisiting issues which were not clear and informed consent was sought before beginning the discussions. The information collected was mainly used to reinforce the quantitative data collected.

Secondary data was collected through the review of health records from the link health facilities of the CUs. Performance of CHWs was assessed through the review of the CHEWs registers and Community Health Information System (CHIS) Records.

3.9. Data management, analysis and presentation

The Quantitative data collected was coded and analysed using the Stata Version 11. Chi-square was used to establish the relationship between the research variables. Chi – square statistics and odds ratio was used to test hypothesis. Significance level was $P < 0.05$ at 95% CI. Descriptive and univariate analyses were performed. Descriptive statistics such as means and frequencies were calculated for respective characteristics whereas statistical significance of association was determined by odds ratio. Graphs and tables have been used to present the findings where appropriate. Qualitative data was analysed using content analysis based on key themes generated from the objectives of the study. Some of the data was analysed verbatim (data presented in the form in which the respondent offered it).

3.10. Logistical and ethical considerations

Clearance of the study was sought from Kenyatta University; Institute of Research and Ethical Committee, and Authority to carry out the study was sought from National council for science and technology. Community entry protocols such as going through the formal and informal community leadership structure was observed. Informed consent participation was adapted while confidentiality was assured to the participants. Permission was also sought from the administration of the health facilities where research was carried out. A consent form was given to the participants and consent sought before interviewing of participants. Names or any other form of identification were not used on the questionnaire or qualitative data collected. In some cases, respondents were requested to grant permission to be cited in the report. All data collected was stored, analyzed and reported in formats that did not allow identification of the individual participant.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents the results of the study collected from the respondents in the study area. The Community Units selected for data collection to represent those receiving monetary incentives were: Mukaange, Nthongoni, Ngulu and Ivingoni and those from Community Units not receiving incentives were Mtito andei, Athi-kamunyuni, Nzambani and Athikiaoni. This led to 282 respondents, 140 from CUs receiving monetary incentives and 142 from CUs not receiving monetary incentives.

To examine effects of various variables on performance of CHWs logistic regression analysis was performed separately for each explanatory variable (Univariate model).

4.1. Specific Objective 1: Socio demographic characteristics of the study population

Some socio-economic factors were significantly associated with performance of community health workers on univariate model.

4.1.1 Gender of respondents

Majority of the CHWs interviewed were women for the Community Units not receiving monetary incentives this represented 56% compared to 43% for the community Units receiving incentives as indicated in table 4.4 below. There was a significant difference in Gender distribution of the CHWs receiving monetary incentives and the comparison group who do not receive monetary incentives. ($\chi^2=12.1$, P- value= 0.001) as indicated in figure 4.1 below.

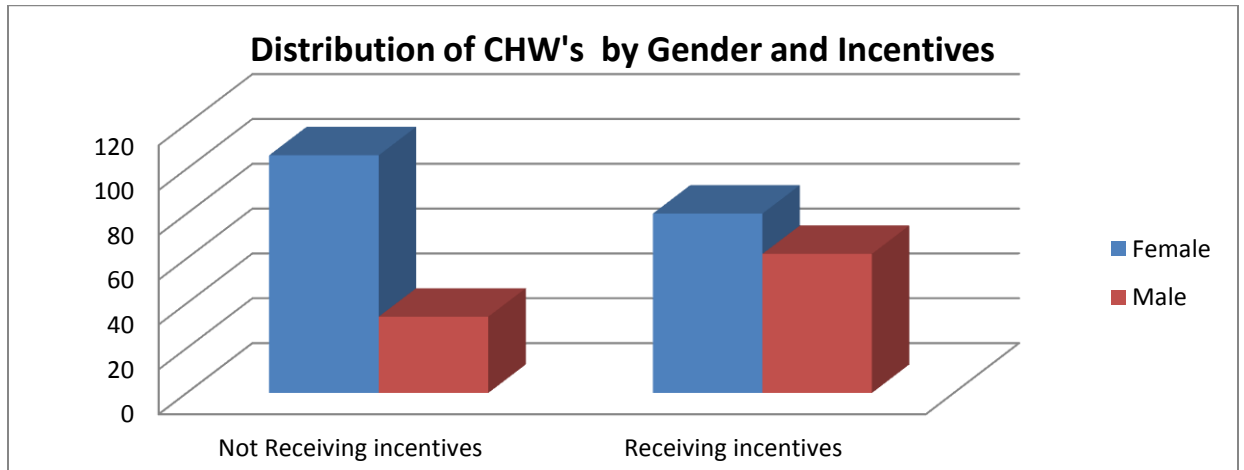


Figure 4.1: Gender of respondents

4.1.2 Age of the respondents

Majority of the Respondents for both groups were in the age group of 30-39Years which represented 56%, followed by those between the age of 40-49 years(%) for CHWS not receiving monetary incentives compared to 44% for the age between 30-39, followed by the age group between 40-49 years(%) for those receiving monetary incentives. There was no significant difference in age distribution of respondents in CUs receiving monetary incentives and those not receiving monetary incentives in the study. ($\chi^2=6.56$, P- value= 0.363) as indicate in table 4.4 below.

Table 4.1: Age associated with performance of CHWs

Age associated with Performance		
Variable	Univariate	
	OR	P-Value(CI 95%)
Age		
30-39	1.1278	0.801 (0.4435835 2.867503)
40-49	3.632653	0.022* (1.209579 10.90972)
50-59	1.142857	0.813 (0.3791133 3.445203)
<60	0.4556	0.197 (0 .099546 1.607297)

Age was significantly associated with performance of CHWs, performance of those who were in the age bracket of 40-49 years was three times better than those aged 20-29 Years [OR 3.6327 P= 0.022(CI 95% 1.2096, 10.90972)] as indicated in table 4.1. above.

4.1.3 Marital status of the Respondents

On marital status, 88.6% of the respondents were married, followed by the single (10.7%) and 0.7% for the widowed for the CHWs receiving incentives compared to 97.2% married and 2.8% single for CHWs receiving incentives. There was a significant difference in the marital status of respondents in CUs receiving monetary incentives and the comparison respondents from CUs who do not receive monetary incentives. [$\chi^2=8.1027$, P-value =0.017] as indicated in table 4.4 below. Marital status was significantly associated with performance of CHWs. The odds of performance was three times higher for those CHWs who were married compared to those who were single. [OR 3.306 P= 0.018 95% CI (1.225372, 5.768136)] as indicated in table 4.2 below.

Table4.2: Marital status associated with performance of CHWs

Marital status associated with Performance		
Variable	Univariate	
	OR	P-Value (CI 95%)
Marital status		
Single	Ref	
Married	3.305556	0.018* (1.225372 8.917049)

4.1.4 Education level of the Respondents

On Education level majority of the respondents (51.4%) had attained Secondary school education, followed by primary education(45%) and Post-secondary education(3.6%) for the CUs receiving monetary incentives compared with 52.1%, 44,4% and 3.5% respectively for the comparison group. There was no significant difference in level of education for the CHWs receiving incentives and those not receiving incentives. (χ^2

=0.0132, P-value=0.993) as indicated in table 4.4 below. Education level was significantly associated with performance, CHWs who had an education level up to primary school were better performers than those with secondary school education level.[OR 2.901786 P value= 0.002 (CI 95% 1.4598, 8.917049)] as indicated in table 4.3 below.

Table 4.3: Education level associated with performance of CHWs

Education level associated with Performance		
Variable	Univariate	
	OR	P-Value (CI 95%)
Education level		
Primary	2.90179	0.002*(1.4598, 8.917049)
Post secondary	0.72917	0.661(1774405, 2.996408)

4.1.5 Occupation of the Respondents

On occupation of the respondents, majority(90.1%) were farmers,4.2% were doing business, 2.8% were unemployed while 2.1% were in formal employment for CHWs not receiving monetary incentives compared to 85.7% who were farmers, 12.9% were doing business and 1.4% were unemployed for the CHWs receiving monetary incentives as shown on figure 4.5. There was a significant difference in the occupation of CHWs receiving monetary incentives and those not receiving monetary incentives ($\chi^2=12.8$ P value =0.025) as indicated in table 4.4. below.

4.1.6 Religion

All the CHWs interviewed were Christians for both the CHWs receiving incentives and those not receiving incentives as indicated in table 4.4. below.

Table 4.4: Socio demographic characteristics of CHWs

Variable	Receiving incentives	Not receiving incentives	χ^2 P-value
Gender Female Male	80(43.01%) 62(64.6%)	106(56.99%) 34(35.4%)	$\chi^2=12.1$ p= 0.001*
Age <20YRS 20-29 30-39 40-49 50-59 60+YRS	0(0.0%) 22(61.11%) 41(43.62%) 49(51.1%) 21(52.3%) 6(50%)	2(100%) 14(38.89%) 53(56.4%) 48(48.9%) 19(47.5%) 6(50%)	$X^2 =6.56$ P=0.363
Marital status Married Single Widowed	138(53) 4(21) 0(0)	124(47) 15(79) 1(100)	$\chi^2 =8.1027$ P=0.017*
Education level Primary Secondary Post secondary	63(51%) 72(49.32%) 5(50%)	61(49%) 74(50.68%) 5(50%)	$\chi^2=0.0132$ P=0.993
Occupation Business Farmer Formal employment Others None	6(25%) 128(51.6%) 3(100%) 1(100%) 4(66.67%)	18(75%) 120(48.4%) 0(0.0%) 0(0.0%) 2(33.33%)	$\chi^2=12.8$ P=0.025*

4.2. Specific objective 2: Type of support provided to community health workers

4.2.1 Selection of community health workers

On the criteria of selection of Community Health Workers, All (100%) of CHWs receiving monetary incentives were selected by the Community whereas for the group not receiving incentives majority (98.6%) were selected by the community and 1.4% had Volunteered. There was no significant difference between the two groups [$\chi^2=1.99$, P-value =0.159] as indicated in table 4.5 below.

Table 4.5: Selection criteria of CHWs

Variable	Not receiving incentives	Receiving incentives	X²(P- value)
Selection of CHW	140(50%)	140(50%)	1.99(0.159)
Community	2(100%)	0(0%)	
Volunteered			

4.2.2 Non- monetary incentives provided to community health workers

Regarding the non- monetary incentives provided to CHWs receiving monetary incentives, all reported getting Community recognition(100%) followed by training(80%),Supervision(74%),provision of bicycles(49%) and Tokens; chicken, foodstuff(3.5%) compared to Community recognition(97%),Training(58.4%), Supervision(79%), Tokens; chicken, foodstuff(5.7%) and Provision of a bicycle(3.6%) for CHWs not receiving monetary incentives. There was a significant difference in the provision of non-monetary incentives for those receiving monetary incentives and those not receiving incentives. [$\chi^2=11.8$, P-value =0.019] as indicated in table 4.6 below.

Table 4.6: Non -monetary incentives provided to Community Health Workers.

Non-monetary incentive	Receiving incentives	Not receiving incentives
Community recognition	100%	97%
Training	100%	41%
Supervision	74%	79%
Tokens; chicken, foodstuff	3.5%	5.7%
Provision of a bicycle	49%	3.6%

On Training of Community Health Workers, CHWs receiving incentives were trained by other partners with majority being trained by AMREF (64%) and 36% being trained by

USAID APHIA II and APHIA Plus. CHWs who do not receive incentives were trained by GOK (62%) and AMREF (38%).

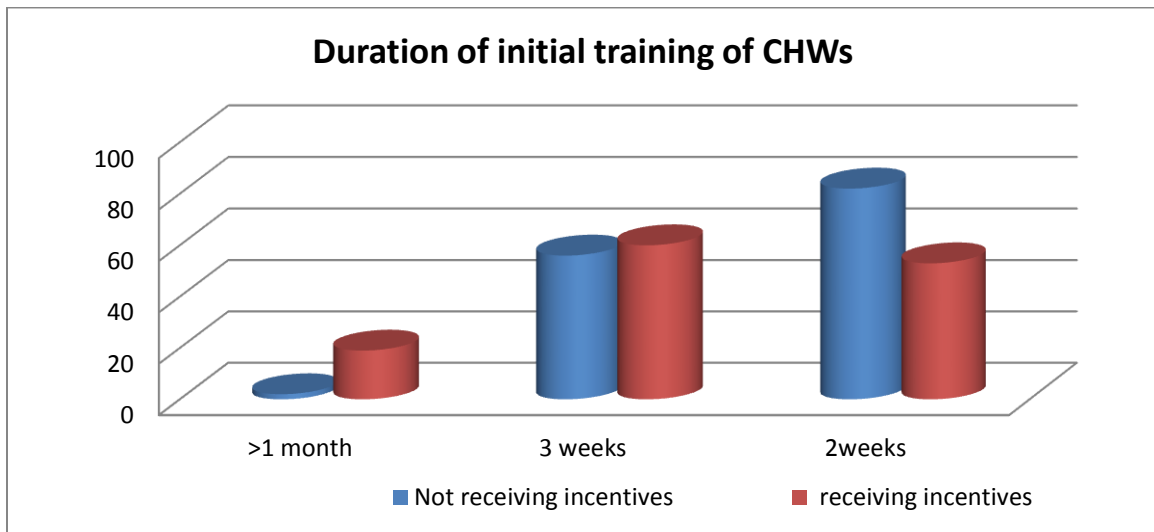


Fig 4.2: Duration of initial training of CHWs

On training of CHWs there were discrepancies on the duration of the initial training with majority of CHWs receiving monetary incentives being trained for a period of 3weeks (42.8%) whereas majority (56.3%) of CHWs not receiving monetary incentives had been trained for a period of 2weeks. There was a significant difference in the duration of the training for those receiving incentives and those not receiving incentives. [$\chi^2=69.42$, P-value =0.0001,]

Table 4.7: Training of CHWs

Variable	Not receiving incentives	Receiving incentives	χ^2 (P- value)
Training duration			
2 weeks	82(58%)	61(42%)	69.42(<0.0001*)
3 weeks	56(48%)	60(52%)	
>One month	2(9.5%)	19(90.5%)	
Subsequent training			
No	83(74.8%)	28(25.2%)	43.61(<0.0001*)
Yes	59(34.5%)	112(65.5%)	

On subsequent training after the initial training of the respondents, there was a significant difference between those receiving incentives and those not receiving incentives 58.4% of respondents from CUs not receiving monetary incentives had received subsequent training compared to 80% for respondents from CUs receiving monetary incentives. [$\chi^2=43.61$, P-value = <0.0001,]. On average the respondents from CUs receiving monetary incentives had received 2 trainings compared to 1 training for the respondents from CUs not receiving monetary incentives. Receiving of subsequent training was significantly associated with performance. CHWs who had received subsequent training after the initial training were better performers than those who had not received subsequent training. [OR =2.7469, P value= 0.008 (CI 95% 1.303001 5.791126)]

Table 4.8: Subsequent training association with performance of CHWs

Receiving of subsequent training association with Performance		
Variable	Univariate	
	OR	P-Value (CI 95%)
Subsequent training		
Yes	2.74697	0.008*(1.303001, 5.791126)
No	Ref	

Majority (67.7%) of respondents from CUs not receiving monetary incentives felt that the training was not adequate for the role they play compared to 43.5% of respondents from CUs receiving monetary incentives. Areas which the respondents from CUs not receiving monetary incentives felt that they needed to be improved included, Duration of training (18.2%), Content of training (6.1%), Inclusion of Curative services(24.2%) and introduction of refresher courses(51.5%) compared to 10.7%, 10.7%, 32% and 46.6% respectively for respondents from CUs receiving incentives. Majority of the respondents from both groups felt that introduction of refresher courses would help improve their performance.

The District Public Health Nurse Kibwezi District said that;

“The discrepancies in training are a major problem as CHWs trained by other partners (AMREF) have undergone subsequent training like Home Based Care and Data collection where as others have not and this definitely affects their performance and also refresher courses and curative courses on minor ailments should be introduced to enhance their performance”

On frequency of supervision of CHWs in the last one month preceding the study, Majority(66.2%) of CHWs not receiving monetary incentives had been supervised once compared to(71%) for CHWs receiving incentives. There was a significant difference on frequency of supervision for the two groups. [$\chi^2=11.8$, P-value =0.019,].

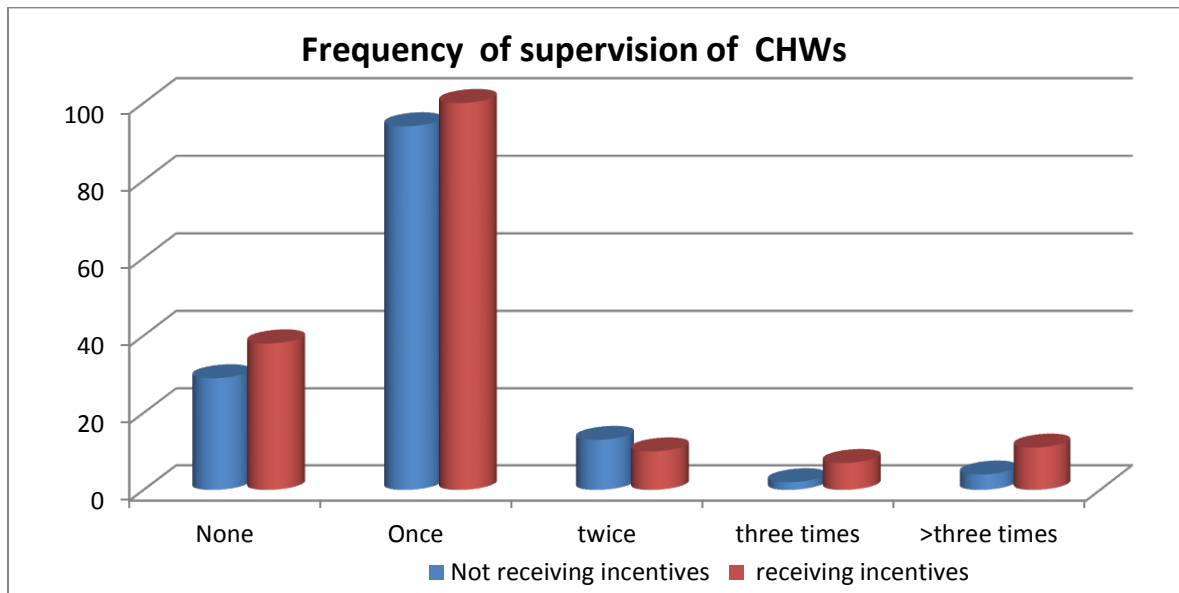
Table 4.9: Supervision of CHWs

Variable	Not receiving incentives	Receiving incentives	X²(P- value)
Supervision Frequency			
None	29(61.7%)	18(38.3%)	11.8(0.019*)
Once	94(48.5%)	100(51.6%)	
Twice	13(56.5%)	10(43.5%)	
>Twice	6(33.3%)	12(66.7%)	
Main supervisor			
CHC	4(20%)	16(80%)	7.6637(0.006*)
CHEW	138(53.6%)	124(47.9%)	

Adequacy of supervision was significantly associated with performance of CHWs. The odds of performance was five times higher for those CHWs who reported that they received inadequate supervision compared to those who reported it was adequate. [OR =5.955224 , P value= 0.0001 (CI 95% 2.271631 15.61199)] as indicated in table 4.11 below.

Table 4.10: Supervision association with performance

Supervision association with Performance		
Variable	Univariate	
	OR	P-Value (CI 95%)
Supervision frequency		
Twice	1.08797	0.855 (0.4415372 2.680845)
>Twice	0.0645161	0.002*(0.0109604 0.3797611)
Adequate supervision		
Yes	5.955224	0.0001*(2.271631 15.61199)

**Figure 4.3: Frequency of supervision of CHWs in the last month**

Majority of CHWs receiving monetary incentives were supervised by the CHEWs(88.6%) followed by the CHC members (11.4%) compared to 97.2% and 2.8% respectively for CHWs not receiving incentives as shown in table 4.1 below. There was a significant difference in the main supervisor of the CHW. [$\chi^2=7.6637$, P-value =0.006,] as indicated in table 4.10 above.

Table 4.11: The main supervisor of the CHWs

Supervisor	CHEW		CHC	
	Frequency	Percentage %	Frequency	Percentage%
Not receiving incentives	138	97.2%	4	2.8%
Receiving incentives	124	88.6%	16	11.4%

Majority of the CHWs receiving monetary incentives felt that the frequency of supervision they got was adequate (77.1%) compared with (49%) for the group not receiving monetary incentives. This was also reported in the Focus Group Discussion where majority of the CHWs not receiving monetary incentives said;

“CHEWs should visit us at the household level so that they can understand our problems instead of just meeting us at the link health facility to pick our reports. This makes us feel like they are not part of what we are doing and sometimes when you need them in between you cannot get them we look at them as people who collect reports from us.”

Regarding the number of households they serve, Majority (58.9%) of CHWs not receiving monetary incentives were serving 11-20 households whereas for CHWs receiving monetary incentives majority (53.6%) were serving 21-30 households. There was a significant difference in the number of households served by the CHWs. ($\chi^2=66$, P-value=0.0001) as indicated in table 4.12 below.

Table 4.12: Households served by CHWs

Variable	Not receiving incentives	Receiving incentives	X ² (P- value)
No. of households served			
<20	85(69.2%)	37(30.8%)	66(<0.0001*)
20-30	13(14.8%)	75(85.6%)	
>30	43(60.6%)	28(39.4%)	
Adequately Served			
No	62(62%)	38(38%)	8.6(0.003*)
Yes	79(43.7%)	102(56.3%)	

The number of households served by a CHW was significantly associated with performance, CHWs with less households were better performers than those serving 20-30 households. [OR =3.091168, P value= 0.001 (CI 95% 0. 15033, 0. 63562)] as indicated in table 4.13 below.

Table 4.13: Households served by CHWs associated with performance

Number of households served by CHW associated with Performance		
Variable	Univariate	
	OR	P-Value (CI 95%)
Number of households served		
<20	3.091168	0.001*(0.1503312 0.6356179)
>30	1.148148	0.778(0.4398253 2.9972)
Adequately served		
Yes	1.963636	0.068(0.9504129 4.057045)

Majority (56%) of CHWs not receiving monetary incentives reported serving their households adequately compared to 72.9% for CHWs receiving monetary incentives. There was a significant difference between the two groups. ($\chi^2=8.6$, P-value=0.003) as indicated in table 4.15 above. On univariate analysis, CHWs who felt that they adequately served the households were better performers compared to CHWs felt that

they did not adequately serve their households. [OR =1.963636 P value= 0.068 (CI 95% 0. 9504129, 4.057045)] as indicated in table 4.13 above. On the understanding of their CHW roles, 97% of CHWs not receiving monetary incentives clearly understood their roles compared to 99% for those receiving monetary incentives. There was no significant difference between the two groups. ($\chi^2=1.18$, P-value=0.178).

Table 4.14: Understanding of roles by CHWs

Variable	Not receiving incentives	Receiving incentives	X ² (P- value)
Understand roles			
No	4(80%)	1(20%)	1.18(0.178)
Yes	136(49.1%)	141(50.9%)	

4.2.3Community appreciation

Majority of the CHWs felt that the community appreciated their work, all (100%) of CHWs receiving monetary incentives reported the community appreciating their work compared to 93% for those not receiving incentives. There was no significant difference between the two groups. ($\chi^2=0.9894$, P-value=0.32) as indicated in table 4.15 below. However the CHWs felt that the community sometimes did not appreciate them because they did not have even basic drugs like pain killers and materials to dress wounds and transport to carry the sick individuals to hospital.

This was expressed by majority of CHWs receiving monetary incentives and those not receiving monetary incentives as illustrated below;

“When we go to the household to attend to a sick member they ask us what kind of doctors we are since we do not have any thing for first aid or even pain killers and transport to carry the sick person to the hospital”.

Table 4.15: Community appreciation of CHWs

Variable	Not receiving incentives	Receiving incentives	X ² (P- value)
Community appreciation			
No	1(100%)	0(0.00%)	0.9894(0.32)
Yes	141(50.2%)	140(49.8)	

4.2.4. Major constraints faced by the community health workers

Regarding the major constraints faced by the community Health Workers, majority of CHWs not receiving monetary incentives cited Lack of supervisors support(45%) followed by Lack of transport (35%) this was also reported by CHWs receiving monetary incentives with a majority(54%) citing lack of support for the supervisors followed by lack of transport(29%). There was no significant difference in the major constraints faced by the CHWS receiving incentives and those not receiving. ($\chi^2=2.6$, P-value=0.622).

Table 4.16: Constraints faced by CHWs

Variable	Not receiving incentives	Receiving incentives	X ² (P- value)
Constraints faced by CHWS	12(50%)	12(50%)	2.6(0.622)
Lack of supplies	49(55%)	40(45%)	
Lack of transport	1(33%)	2(67%)	
Lack of community support	64(46%)	75(54%)	
Lack of supervisors support	16(59%)	11(41%)	
Financial constraints			

4.3 Objective 3: Effect of monetary incentives on performance of CHWs

4.3.1. Provision of monetary incentives

Community health workers trained by GOK through the Ministry of Public Health and Sanitation were volunteers and did not receive any monetary incentives. All CHWs trained by USAID APHIAII and APHIA Plus were receiving monetary incentives

whereas for those trained by AMREF some CUs received monetary incentives as indicated in figure 4.4 below.

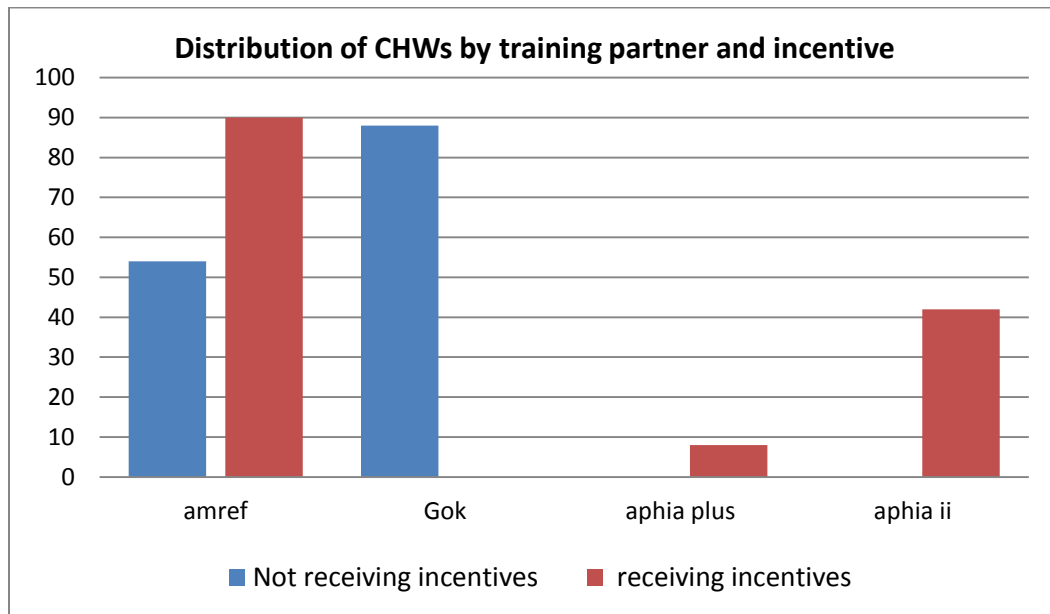


Figure 4.4: Distribution of CHWs by training partner and incentive

The training partner of CHWs was significantly associated with performance, CHWs trained by APHIA Plus were better performers than CHWs trained by GOK. [OR 4.026 (P=0.008 CI 95% 1.459, 12.125)] CHWs trained by APHIA II were better performers than CHWs trained by GOK.[adjusted OR 3.97, p= 0.023 CI 95% (1.21, 13.07)] as indicated in table 4.17 below.

Table 4.17: Training partner associated with performance

Training partner associated with performance		
Variable	Univariate	
	OR	P-Value (CI 95%)
Training partner		
APHIA Plus	4.026	0.008* (1.459, 12.125)
USAID-APHIA II	3.97	0.023* (1.21, 13.07)

4.3.2. Attendance of monthly meetings

In the last 3 months preceding the study 69.8% of CHWs receiving monetary incentives had attended their monthly meetings compared to 55.1% for CHWs not receiving monetary incentives and there was a significant difference ($\chi^2 = 7.06$, P-value=0.029) as shown in the table 4.18 below.

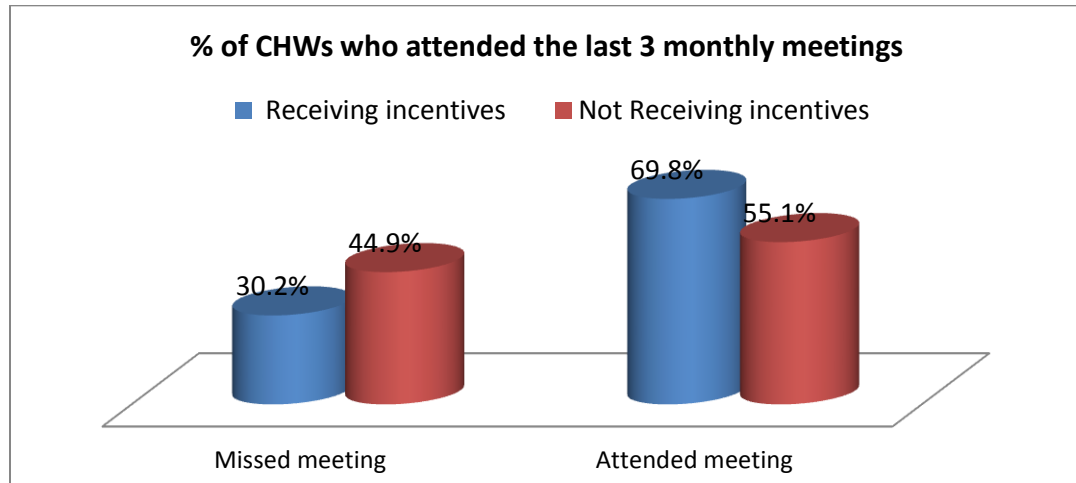


Figure 4.5: Percentage of CHWs who attended meetings in the last 3 months

The main reason cited for missing the meeting for CHWs receiving monetary incentives was sickness (83%) compared to CHWs not receiving monetary incentives whose main reason for missing the monthly meetings was sickness (31%) followed by financial constraints (17%). There was a significant difference in the main reason for missing the monthly meeting amongst CHWs receiving monetary incentives and those not receiving monetary incentives ($\chi^2 = 14.9$, P-value=0.001) as indicated in table 4.18 below. This was also reported in Focus group discussions by CHWs not receiving monetary incentives where they stated that they had to walk for long distances and required money to attend the meeting which was not compensated to them. CHWs receiving monetary incentives cited the main reason being the long distances they had to walk to attend the meeting.

Table 4.18: Attendance of meetings by CHWs

Variable	Not receiving incentives	Receiving incentives	X ² (P- value)
Attendance of meetings			
Yes	78(44.3%)	98(55.7%)	7.06(0.029*)
No	64(60.4%)	42(39.6%)	
Reasons for missing			
Financial Constraints	11(100%)	0(0.00%)	14.9(0.001*)
Long distance	1(50%)	1(50%)	
Sickness	20(36.4%)	35(63.6%)	
Others	31(82%)	6(18%)	

4.3.3. Effect of the financial status of CHWs on their performance

Regarding the CHWs view on the effect of their financial status on performance, 89.3% of the CHWs not receiving monetary incentives stated that their financial status affected their performance compared to 77% for those receiving monetary incentives, there was a significant difference ($\chi^2 = 7.3$, P-value=0.007) as indicated in figure 4.6 below.

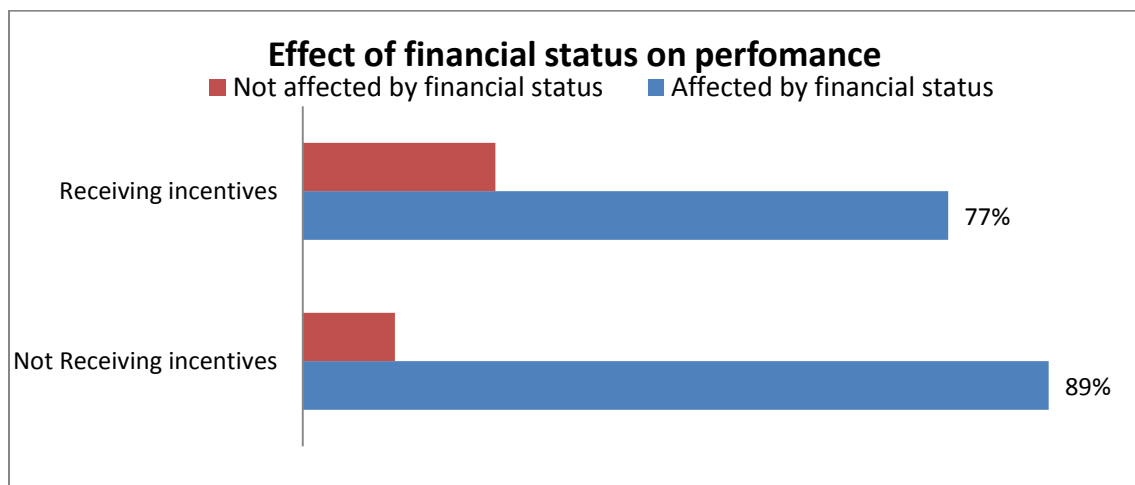


Figure 4.6: Effect of financial status on performance

4.3.4 Level of job satisfaction of Community Health Workers

On job satisfaction rating, majority of CHWS for both groups were satisfied with their job. 40.4% of CHWs not receiving incentives were satisfied with their job, followed by fairly satisfied (26.2%), very satisfied (23.4%), Not satisfied (8.5%) and Totally unsatisfied (1.4%). For the CHWs receiving monetary incentives Majority (46.6%)

reported that they were satisfied with their job, followed by fairly satisfied (30%), very satisfied 10.7 %, totally unsatisfied (8.6%) and not satisfied (4.3%).($\chi^2 =16.73$, P-value=0.002)

4.3.5 Performance indicators of Community Health Workers

Table 4. 19. Performance indicators of Community Health Workers

Performance Indicators	Receiving incentives	Not receiving incentives	P-value
Proportion of pregnant women referred for Antenatal Clinic	49%	36%	0.022*
Proportion of pregnant women counseled on the Individual Birth Plan(IBP)	39%	40%	0.862
Proportion of women counseled on the Exclusive Breast Feeding(EBF)	47%	24%	0.043*
Participation in Community Dialogue days	75%	56%	0.005*

49% of pregnant women were referred for Antenatal Clinic for the CUs receiving monetary incentives compared to 36% for those not receiving incentives. There was a significant difference in the number of women referred for antenatal between the two groups.(P- value=0.022) as indicated in table 4.20 above. On the Number of women counseled on the Individual Birth Plan (IBP), 39% had been counseled on the IBP for CUs receiving monetary incentives compared to 40% for those in CUs not receiving monetary incentives. There was no significant difference in the number of women counseled on the IBP between CUs receiving incentives and those not receiving monetary incentives. (P- value =0.862) as indicated in table 4.19 above.

47% of women who had newborns in CUs receiving monetary incentives had been counseled on exclusive breastfeeding compared to 24% for CUs not receiving monetary incentives. There was a significant difference between the two groups.(P- value

=0.043) as indicated in table 4.20 above. Regarding the participation of CHWs in community dialogue days, 75% of CHWs receiving monetary incentives had participated in the community dialogue days compared to 56% for those not receiving incentives. There was a significant difference in the participation in community dialogue days between CHWs receiving incentives and those not receiving incentives. (P-value = 0.005) as indicated in table 4.20 above.

Similar findings were reported by CHWs during focus group discussions by CHWs not receiving monetary incentives;

“We feel very demotivated when we see our counterparts being paid and yet we are not paid yet we perform the same duties and this has led to some people not working well and dropping out or not working well, our household chores are not attended to yet there is no compensation for the work done. Can you imagine using your time to work and nobody pays you for it even some expenses like transport lead to us using our own money?”

CHWs receiving monetary incentives reported that the money they receive is little compared to the work they do for their community. Suggestions given by CHWs included allowances of up to Kshs. 300- Kshs. 500 per day and a stipend of Kshs. 3000- Kshs. 5000 per month. All CHWs stated that they would appreciate if they were given a stipend to compensate them the time they use as they work in the community however it was clear that the CHWs did not expect a high salary like other government health workers.

This was also reported during key informant interviews as indicated below;

“The CHWs who are trained by other partners are motivated to work because they receive monetary incentives where as those trained by the government are not very active as they are demotivated. This affects their performance as they do not understand why their counterparts are paid and they are not paid. I feel that this may be a major issue affecting the performance of government recruited CHWs”

4.3.6 Key health indicators of Community Units

Table 4.20:Key health indicators of community units

Health Indicators	Receiving incentives		Not receiving incentives		P-value
	Before	After	Before	After	
Proportion of children aged below 5 years fully immunized	78%	85%	80%	81%	<0.0001*
Proportion of pregnant women who had attended 4 antenatal visits	49%	57%	47%	48%	0.028*
Proportion of pregnant women delivering with skilled birth attendants	24%	34%	25%	28%	0.003*

The CUs receiving monetary incentives had greater improvement of the health indicators and they had better health indicators than CUs not receiving monetary incentives. The CUs receiving monetary incentives had 85% of the proportion of children aged below 5 years having been fully immunized compared to 81% for the CUs not receiving monetary incentives. There was a significant difference in the proportion of children below 5 years

who were fully immunised (P value= <0.0001) for Community units receiving monetary incentives and those not receiving monetary incentives as indicated in *Table 4.20 above*.

The CUs receiving monetary incentives had 57% of the proportion of pregnant women attending 4 ANC visits compared to 48% of the pregnant women from CUs not receiving monetary incentives. There was a significant difference in the proportion of pregnant women who had attended 4 antenatal visits (P value=0.028) for Community units receiving monetary incentives and those not receiving monetary incentives. (*Table 4.20*.) The CUs receiving monetary incentives had 34% of the proportion of pregnant women delivering with a skilled birth attendant compared to 28% for CUs not receiving monetary incentives delivered. There was a significant difference in the proportion of pregnant women delivering with skilled birth attendants (P value=0.003) for Community units receiving monetary incentives and those not receiving monetary incentives. (*Table 4.20*.) Overall CUs receiving monetary incentives had better health indicators compared to CUs not receiving monetary incentives. Similar findings were reported by key informants who reported that CHWs receiving monetary incentives were better performers and their CUs have better health indicators.

The Public Health Nurse reported that;

“Community units which are supported by other partners where CHWs are receiving incentives have better health indicators and majority have improved tremendously due to the commitment of the CHWs I strongly believe that CHWs require monetary incentives for motivation and general acceptance by their families and community”

Majority of the key informants indicated that the introduction of monetary incentives in the form of a stipend or allowances during monthly meetings would enhance the performance of CHWs and improve the health indicators of the community units they served.

Regarding their contribution to health improvement, all CHWs (100%) from both groups reported that they contributed positively to the improvement of the health status in their community units amongst CHWs receiving monetary incentives and those not receiving monetary incentives. This was also expressed by CHWs from Mtito andei , Community Units in the Focus Group Discussions as illustrated below;

“We have made a great contribution towards improving the health status of our community, HIV infected individuals are now taking drugs, Diarrhea cases have reduced and self medication and use of herbal drugs has reduced tremendously. Despite the challenges we face we have really helped our community”

4.4 Objective 4:Effect of monetary incentives on attrition of CHWs

4.4.1. Attrition rates of Community Health Workers

There was higher attrition rates (13%) among those not receiving any form of monetary incentives compared to those receiving monetary incentives(4%).These differences in attrition rate between CHW's receiving monetary incentives and those not receiving monetary incentives was significant(P-value 0.013)

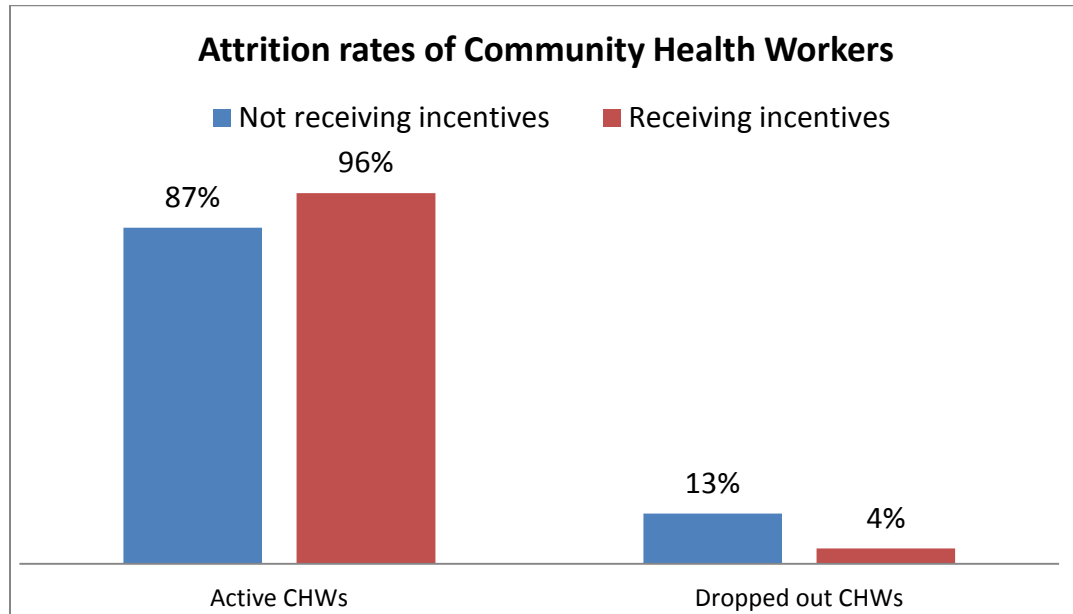


Figure 4.7: Attrition rates of community health workers

4.4.2 The main reasons for dropping out of CHWs

The main reasons reported by CHWs that would make one to become inactive or drop out amongst CHWs not receiving incentives were Financial constraints(54.4%) followed by inadequate compensation(29.82%) compared to those who received monetary incentives where majority(47.3%) cited financial constraints followed by inadequate compensation(24.7%) as indicated in table 4.21 below. There was a significant difference amongst the two groups. ($\chi^2=15.538$, P-value=0.016) as indicated in table 4.21 below.

Table 4.21: Main reasons for dropping out of CHWs

Variable	Not receiving incentives	Receiving incentives	χ^2 (P- value)
Main reasons for dropping out			15.538(0.016*)
Family discouragement	4(100%)	0(0%)	
Inadequate compensation	34 (60%)	23 (40%)	
Inadequate appreciation	2 (16.7)	10 (83.3%)	
Inadequate support by CHEWs	4 (28.6%)	10(71.4%)	
Uncooperative CHC	2(67%)	1(33%)	
Financial constraints	62(58%)	44(42%)	
Inadequate training	6(55%)	5(45%)	

CHAPTER FIVE: DISCUSSION OF THE FINDINGS

5.0 DISCUSSION

5.1 Socio-demographic factors associated with performance of Community Health Workers

The study findings show that there was a difference in the composition of the two groups whereby a bigger percentage of CHWs receiving monetary incentives was composed of the males. This could be attributed to the males enrolling as CHWs due to the monetary incentives as opposed to women who are likely to volunteer for the sake of improvement of health for their community. However sex was not significantly associated with performance. (P-value=0.535). This is consistent with a study done in Uganda (Kallander *et al.*, 2006) which found no relation of sex with performance of CHWs. This contrasts with findings of a study done in Busia District (Ndedda *et.al.* 2011) whose findings indicated that the Sex of the CHW was related to good record keeping, counselling and client enablement with female CHWs counselling and enabling their clients better than their male counterparts.

Age was significantly associated with performance, CHWs who were in the age bracket of 40-49Years were more likely to perform better (P= 0.022) as compared to those in other age groups. This could be attributed to majority having been married and settled and being able to handle the extra responsibilities for providing services to the community and support their families as opposed to the younger ones and the older ones. This differs from a study done in Uganda (Kallander *et al.*, 2006) which found that factors such as age, sex and education had no effect on the CHWs' performance. The results were consistent with a study done by (Ndedda *et.al.* 2011) which found that the

age-group 30 to 40 appeared to be the most appropriate for selection of community health workers in order to obtain optimum results. Younger and much older CHWs had sub-optimal performance. This differs from a study in Uganda (Kallander *et al.*, 2006) which found that factors such as age, sex and education had no effect on the CHWs' performance.

Marital status was significantly associated with performance of CHWs. The odds of performance was three times higher for those who were married compared to those who were single. [OR 3.306 P-value= 0.018 95% CI (1.225372, 5.768136)]. This could be attributed to the married CHWs having support from their families and provision of assistance in the financial contribution in the homes compared to the single who had the extra burden of providing for their families coupled with the inadequate compensation for the work done and feeling that the extra time taken to perform the CHWs roles could have been used for Income Generating Activities. This differs from findings of a study by Ndedda *et.al*, (2011) where they did not find any relation of marital status with performance of CHWs.

Education level was significantly associated with performance. CHWs who had education level of up to primary school leavers were better performers compared to secondary school leavers.[OR 2.901786 P value= 0.002 (CI 95% 1.4598, 8.917049)]. This result differs with a study in Nigeria (Ande, 2004) which observed that CHWs with higher education level could learn and enhance skills and therefore deliver services better. This also differs with findings in a study by Ndedda *et.al*, (2011) where a higher

education level was related to better performance of CHWs in all parameters of performance except client enablement.

In the study, occupation was significantly associated with performance. The performance of CHWs who had businesses was two times better than those who were farmers. [OR 2.901786 P= 0.002 (CI 95% 1.4598, 8.917049)] This could be attributed to the low income from farming due to the low returns and drought experienced in the study area and also the utilization of time required to do farming for the CHW roles. This in return would affect the performance of the CHWs as their financial status is likely to affect their ability to perform their roles which are not compensated.

5.2 Support provided to Community Health Workers

Non-monetary incentives are critical to the success of any CHW programme. CHWs need to feel that they are a part of the health system through supportive supervision and appropriate training. Relatively small things, such as an identification badge, can provide a sense of pride in their work and increased status in their communities. Appropriate job aides such as counseling cards and regular replenishment of supplies can help ensure that CHWs feel competent to do their jobs. “Peer support can come in many forms, such as working regularly with one or two other CHWs, frequent refresher training, or even CHW associations. (WHO,2007). The duration of training was significantly associated with performance. CHWs who had trained for a one month were better performers than those who had trained for 2 weeks and 3 weeks.(P value= 0.001). This could be attributed to the training being a non-monetary form of incentives which would have translated to more motivation for CHWs who were trained for a longer duration. This findings are similar with a study done in Guatemala by Ronsmans *et. al* (1997) which found that

adequate training was enough to motivate CHWs and the increase in motivation was attributed to a combination of refresher training and annual workshops for CHWs.

Refresher training allows CHWs to learn new skills take new challenges, keep the job interesting and promote personal development. (Bhattacharya *et.al*, 2001). Receiving of subsequent training by CHWs after the initial training was significantly associated with performance in the study. CHWs who had received subsequent training were better than those who had not received subsequent training. (P value= 0.008). This could be attributed to CHWs receiving subsequent training being motivated as training is a form of non-monetary incentive. This results are similar with a study done by Kalyango *et.al.*, 2010 which found that the factors perceived to influence CHWs' performance were: community support, continued training, availability of drugs and other necessary supplies, and cooperation from formal health workers This result differs with a study done by Amufwoko, (2009) which found that subsequent training had no effect on the performance of CHWs. This findings differ with a study done in El Salvador or Bhattacharya *et.al*, 2001) which found that frequent training of CHWs made them spend more time in the training and out of the community and the most active CHWs became a target for vertical programmes and ended up having a lower performance and eventually dropping out.

The training partner of CHWs was significantly associated with performance, CHWs trained by APHIA Plus (P<0.008) and APHIA II (P= 0.023) were better performers than CHWs trained by GOK. This can be attributed to the CHWs receiving monetary incentives unlike their counterparts trained by the GOK and AMREF who do not receive

monetary incentives which may lower their morale and hence translate to low performance. This findings agree with the findings on performance indicators whereby CHWs who received monetary incentives performed better. This differences could also be attributed to the discrepancies in the duration of the initial training and subsequent training which would translate to a difference in the performance.

According to the study, adequacy of supervision was significantly associated with performance of CHWs. CHWs who reported that they had received adequate supervision were better performers than those who reported that the supervision they received was inadequate.(P value= 0.0001).This could be attributed to the community health workers increase in motivation due to the support. Supportive supervision is a form of non-monetary incentive and therefore it is likely to translate to motivation of CHWs and hence affect their performance. Similar findings were reported in a study done by Curtale *et al.*, 1995 where they found that continuous supervision diminishes the sense of isolation that CHWs usually experience and helps to sustain their interest and motivation to do their assigned tasks. Similar findings were also echoed by experiences in a Bolivian CHW programme done by Charleston *et.al.* (1994) which found that supervision enhanced the motivation of CHWs. Evaluations of CHW performance in 1998, 1999, and 2001 in Siaya, Kenya (Kelly *et al.*, 2001) found that “key reasons for the deficiencies [in performance] appear to be guidelines complexity and inadequate clinical supervision”.

The responsibilities of the CHW as in any job are tied to the need and expectation of various incentives by the CHWs. (Barttacharrya *et.al*, 2001). In the study the number of households served by a CHW was significantly associated with performance, CHWs

serving less households were better performers than those serving 21-30 households .(P value= 0.001). This could also be attributed to the CHWs having excessive work which translates to long working hours which may influence their performance. The CHWs may experience excessive demand for the services they require to offer and time constraints as they are also required to continue with their normal duties alongside their CHW roles. This could be translated as unreasonable for the inadequate compensation. The CHWs may also feel like they are not serving the households adequately which may result in their performance levels going down.

5.3 Effect of Monetary incentives on the performance of Community Health Workers

Control of CHW programmes performance can be achieved with regular and performance based financial incentives and hiring CHWs as full time employees rather than part time volunteers. They should also be given a wage if they work as full time, and those working as part time should be given small incentives for their work. CHWs should be paid adequate wages commensurate with their work load and timings. Performance incentives could be the other pay back option, which can also motivate them to work with full determination. Moreover, relatively small things, such as an identification badge, can provide a sense of pride in their work and increased status in their communities. In cases where possible, free health coverage for themselves and for their family should be provided. CHWs should be given multiple performance based incentives over time to keep them motivated. (Zilfiqar *et.al*, 2010). A WHO draft document concluded that there is little evidence that the mobilization of volunteers in CHW programmes is an effective policy (WHO, 1989)

There was a significant difference in the attendance of monthly meetings in the last 3 months preceding the study. Majority of CHWs who had missed meetings were not receiving monetary incentives. (P-value=0.029). This could be attributed to the motivation of the CHWs receiving monetary incentives as they would receive monetary incentives during the monthly meeting. Reasons cited by both groups was financial constraints and logistical issues especially lack of transport. There was a significant difference in the effect of the financial status of CHWs on performance between CHWs not receiving monetary incentives and those receiving monetary incentives. (P-value=0.007). Majority of CHWs who were not receiving incentives felt that their financial status affected their performance. This could be attributed to majority of the CHWs being poor and relying on farming as a source of income. The study area is a drought prone area and majority of respondents were farmers which means that the returns from their farms are low. This contributes to some CHWs being unable to continue with their roles as their basic needs are not yet met hence participation in CHW roles is affected.

The study findings indicate that CHWS receiving monetary incentives had better performance indicators than CHWs not receiving monetary incentives. There was a significant difference in the proportion of women referred for antenatal care (P-value =0.022), proportion of women with newborns who had been counseled on exclusive breastfeeding (P-value =0.043) and the participation of CHWs in community dialogue days.(P-value =0.005) between the two groups. This findings are consistent with the findings of an evaluation done by the Ministry of Public Health and Sanitation, 2010 in

Kenya which indicated that although the CHWs undertook their responsibilities with an understating that it was on a voluntary basis, they had their own expectations regarding rewards and incentives which should be provided by the programme, resulting in lower working morale and reduced retention rate.

Similar findings were reported in a study done in Busia, Kenya. (Oweke C, et al.,2012) Where it was reported that when the CHWs were recruited, incentives and financial gain was not what they expected but as they continued with the work, they realized that they required them as a motivation to continue on supporting the communities effectively. This could be attributed to the demotivation of CHWs due to their changes in expectation which lowers their morale to work. Similar findings were found in a study done by Quinones, 1999 in Colombia which found that discrepancies in payment of CHWs can result intension between the paid and unpaid groups resulting in poor performance and attrition. A similar finding was found by Griffiths, 2001 where CHWs who worked along the border with El Salvador frequently complained that their Salvadoran counterparts were paid while they were not which translated to poor performance and high rates of dropping out.(WHO, 2007)

The study findings indicate that all CHWs would appreciate if they were given a stipend to compensate them the time they use as they work in the community however it was clear that the CHWs did not expect a high salary like other government health workers. This results are similar to a process evaluation of performance-based incentives for village health workers in Kisoro district, Uganda which found that VHW recommended being paid a stipend equivalent to what a day laborer would receive for working in the

fields, so that they could hire someone to till their crops while they conducted their work as VHWs. Together, these responses suggested that VHWs perceive themselves neither as fully volunteers nor as salaried employees. None of the VHW expressed a desire to progress to full-time healthcare work, or be paid a salary equivalent to a healthcare worker. However, they felt strongly that they should be compensated for the time that they would otherwise spend farming. VHWs also discussed a number of intrinsic motivations for their work. Majority of VHWs mentioned that they enjoyed the knowledge and skills they gained from training sessions, and the status this training gave them in their villages. Others VHWs also mentioned that this knowledge benefited them and their families by allowing them to maintain their own health. (Miller et.al, 2014) Similar findings were reported in a study done in western Kenya. (Gisore P., et.al, 2013) The study findings indicated that monetary incentives were the most cited (26%) incentives that could result in CHWs sustained engagement in the project. Bicycle transport was cited by 19.4%, followed by some form of identification (15.5%), and more training (11.4%).

According to the study, provision of monetary incentives to CHWs led to the improvement of key health indicators. There was a significant difference in the proportion of children below 5 years who were fully immunised (P value= <0.0001), proportion of women who had attended 4 antenatal visits (P value=0.028) and the proportion of pregnant women delivering with skilled birth attendants (P value=0.003) for Community units receiving monetary incentives and those not receiving monetary incentives between CHWs receiving monetary incentives and those not receiving monetary incentives. The CUs receiving monetary incentives had better key health

indicators than the CUs not receiving monetary incentives. This could be attributed to the fact that most of the partners who trained CHWs alongside the MOPH&S, provided monetary incentives to the CHWs which led to their motivation which resulted in better performance and an outcome of improved health indicators in the community units in anticipation that the remuneration would improve with time. This agrees with the findings on performance which indicates that CHWs receiving monetary incentives were better performers than those not receiving monetary incentives which would have an outcome of better health indicators.

5.4. Effect of Monetary incentives on attrition rates of CHWs.

Monetary incentives can increase retention because Community Health Workers are poor people trying to support their families. (Bhattacharyya *et al.* 2001).The study findings show that CUs not receiving monetary incentives had higher attrition rates of CHWs than CUs receiving monetary incentives.(P-value 0.013). This could be attributed to the CHWs who do not receive monetary incentives having a low morale due to inadequate compensation for the work done which may lead to them dropping out of their CHW roles. This could also be attributed to the CHWs getting demotivated as others are paid whereas they are not paid yet they perform similar roles. This could be also be attributed to CHWs who are receiving monetary incentives feeling that the compensation is a sign of acknowledgment and approval that allows them to earn a living or supplement other income and hence their retention.

The main reasons reported in the study by CHWs that would make one to become inactive or drop out amongst CHWs not receiving incentives were; Financial constraints(54.4%) followed by inadequate compensation(29.82%) compared to those

who received monetary incentives where majority(47.3%)cited financial constraints followed by inadequate compensation(24.7%).Similar findings were reported in a study done in Busia District, Kenya by Oweke C, et.al., (2013) where the dropout rate among CHWs after one year was 30% after 3 years amongst volunteer CHWs . In Bangladesh, the dropout rate for CHWs was between 31-44% and the reasons for attrition were due to household chores , other socio-economic activities which appeared more profitable and high targets set by the supervisors (Winch et al., 2000). Similar findings were reported by Wubneh,1999, whereby the introduction of a stipend to all CHWS in Ethiopia's Gumer District, led the attrition rate falling from 85 percent a year to zero. Similar findings were reported by CHWs during focus group discussions where CHWs reported that some might have become CHWs with motives to earn an income. Some CHWs during recruitment expected monetary gains and if their motives were not realized, they dropped out.A study done in Busia District, Kenya by Oweke C, et al., showed that 23% of CHWs during recruitment expected monetary gains which led to CHWs dropping out.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.0 General overview

This chapter gives a summary of the findings on the role of monetary incentives on performance and retention of Community Health Workers in Kibwezi District. This study makes various conclusions and recommendations on the socio demographics of CHWs, the support provided to CHWs and their influence on their performance and retention.

6.1 Conclusions of the study

Based on the stated specific objectives, this study makes conclusions as outlined:

6.1.1 Socio-demographic factors associated with performance of Community Health Workers

1. Age was significantly associated with performance of CHWs. Those who were in the age bracket of 40-49Years were more likely to report the effect of financial status on their performance as compared to those in other age groups.
2. Marital status was significantly associated with performance of CHWS. Married CHWs were better performers than the single CHWs.
3. Education level was significantly associated with performance of CHWs. Primary school leavers were better performers than the secondary school leavers and post secondary school.

6.1.2. Support provided to Community Health Workers

1. Duration of training was significantly associated with performance. CHWs who had trained for one month were better performers than those who trained for 2 weeks and 3 weeks. Receiving of subsequent training by CHWs after the initial training was significantly associated with performance. CHWs who had received

subsequent training were better performers than those who had not received subsequent training.[OR = 2.75, P =0.008)

2. There was a significant difference on the frequency of supervision of CHWs. (P= 0.019). Adequacy of supervision was significantly associated with performance of CHWs. The odds of performance was five times higher for CHWs who had received adequate supervision.(OR= 5.956, P= 0.0001)

6.1.3. Effect of Monetary incentives on the performance of Community Health Workers

1. The study findings indicate that CHWS receiving monetary incentives had better performance indicators than CHWs not receiving monetary incentives. There was a significant difference in the proportion of women referred for antenatal care (P-value =0.022), proportion of women with newborns who had been counseled on exclusive breastfeeding (P- value =0.043) and the participation of CHWs in community dialogue days.(P- value =0.005) between the two groups.
2. The study findings indicate that CUs receiving monetary incentives had better health indicators than those not receiving monetary incentives. There was a significant difference in the proportion of children below 5 years who were fully immunised (P value= <0.0001), proportion of women who had attended 4 antenatal visits (P value=0.028) and the proportion of pregnant women delivering with skilled birth attendants (P value=0.003) for CUs receiving monetary incentives and those not receiving monetary incentives.

3. On this basis, the null hypothesis postulating that there is no difference in performance of Community Health Workers receiving monetary incentives and those not receiving monetary incentives is thus hereby rejected.

6.1.4. Effect of Monetary incentives on attrition rates of CHWs.

1. The study findings show that provision of monetary incentives has an effect on the attrition rates of CHWs. The attrition rates were higher for CHWs not receiving monetary incentives compared to CHWs receiving monetary incentives.
2. On this basis the null hypothesis postulating that there is no difference in attrition rates of Community Health Workers receiving monetary incentives and those not receiving monetary incentives is thus hereby rejected.

6.2 RECOMMENDATIONS

This study proposes several recommendations for both national and county government, Non- Governmental Organizations, community and other stakeholders to enhance the performance and retention of CHWs.

6.2.1 Recommendations for policy and practice

1. Educational level was significantly associated with performance in this study. Despite CHWs being volunteers those recruited should have a basic level of education to enhance performance of the CHWs.
2. Age was significantly associated with performance in this study. In this regard it would be important for the programme implementers to enhance the selection of CHWs who are mature CHWs as opposed to the very young and old who have optimal performance.

3. Monitoring and supervision systems should be strengthened to maintain the quality services provided by CHWs and regular feedback on their performance given by CHEWs to motivate the high performers and assist the low performers to improve.
4. There is a need for government and partners to explore sustainable performance based financial incentives which will ensure all the CHWs receive a stipend and other allowances like during monthly meetings to enhance their performance and enhance the retention of CHWs.

6.2.2 Recommendation for further research

1. The study noted that CHWs would be motivated if they received monetary incentives. It would be helpful to undertake a research to investigate sustainable monetary incentives that would motivate CHWs the most and their impact on performance.
2. Further research should be done to investigate the community factors that affect the Community Health Worker programmes. This would assist policy makers in ensuring that the CHWs improve their performance and are retained in the programme.

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APPENDICES

Appendix I: Informed consent

This was read to the respondents before the interview so that their consent was sought.

My name is Ruth Gathoni. I am a Public Health student at Kenyatta University conducting a research in Kibwezi District which aims at exploring the effect of Community Health Workers monetary incentives on retention and health service delivery. I would like to spend 20 minutes to ask you a few questions pertaining your role as a Community Health Worker. Whatever information you provide will be kept strictly confidential, and will not be shown to any other person or used for any other purpose other than for analysis. You are free to stop answering questions at any point if you don't feel like. The study will in among other things assist the Ministry of Health to develop a policy in terms of improving performance of CHWs while endeavoring to offer health services in the households and community at large. Any information I will gather from you will be confidentially treated and no mention of names will be done in the report. Do you have any questions? Is it okay if I interview you on matters regarding this study?

Appendix II: Research authorization

REPUBLIC OF KENYA

**NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY**

Our Ref:NCST/RCD/12A1012/165

Date: 6th November 2012

Ruth Gathoni Mbugua
 Kenyatta University
 P.O.Box 43844-00100
 Nairobi.

RE: RESEARCH AUTHORIZATION

Following your application for authority dated 25th October, 2012 to carry out research on *"Effect of community health workers monetary incentives on retention and health service delivery in Kibwezi District, Kenya,"* I am pleased to inform you that you have been authorized to undertake research in Kibwezi District for a period ending 31st December, 2012.

You are advised to report to the District Commissioner and the District Education Officer, Kibwezi District before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

DR M.K. RUGUTT,

DEPUTY COUNCIL SECRETARY

Copy to:

The District Commissioner
 The District Education
 Officer
 Kibwezi District.

Appendix III: Questionnaire for Community Health Workers

Questionare number.....

Community Unit.....

Name of Village.....

SECTION A: SOCIO-DEMOGRAPHIC DATA**1. Sex:** Male Female**2. Age** Below 20 years 20-29 Years 30-39 Years 40-49 Years 50-59 Years 60 + Years**3. Marital status** Single Married Widowed/Separated**4. Level of education** Primary School completed Secondary school completed Post secondary School completed**5. Occupation** None Business Formal employment Farmer (Peasant) Farmer (Large scale) Other specify.....

6. Religion

- Christian
- Muslim
- Hindu
- Others specify.....

SECTION B: TYPE OF SUPPORT PROVIDED TO CHWs

1. Who selected you as a community Health Worker?

- Community
- CHC
- MOH
- Others; Specify.....

2. Who trained you as a Community Health Worker?

- GOK
- AMREF
- USAID-APHIA II
- Others; Specify.....

3. What was the duration of your initial training as a CHW?

- 1 week
- 2 weeks
- 3 weeks
- One month
- Over 1 month

4. Have you had any other training after your initial training?

- Yes No

b) If yes to above state the number of trainings that you have undergone in the last 6 months.....

5. Do you feel that the training that you have undergone is adequate for you to perform your duties as a CHW?

- Yes No

6. Which areas do you feel should be improved in the training

- Duration of training
- The content of the training
- Areas covered to include curative services
- Introduction of refresher courses

7. How many times have you been supervised in the last one month?

- None
- 1 time
- 2 times
- 3 times
- More than 3 times

8. Who is mainly involved in supervising you?

- CHC members
- CHEW
- MOH
- NGO

9. Do you feel that the supervision you get is enough

- Yes No

10. Do you get feedback from your supervisor?

- Yes No

11. In your opinion does your supervisor give you adequate support in time

- Yes No

12. Does the community appreciate your work?

- Yes No

13. If Yes to above; How does the community appreciate your work?

- Thanking you after serving them
- Tokens; chicken, food
- Cash payment
- Community recognition
- Others specify.....

14. a) Does your family approve your being a CHW?

Yes No

b) If No to above state the reason.....

15. Which of the following non-monetary incentives are you receiving currently

- Community recognition
- Management of a commodity kit
- Training
- Supervision
- Career advancement opportunities
- Tokens; chicken, foodstuff
- Provision of a bicycle
- Others specify

SECTION C: EFFECT OF INCENTIVES ON PERFORMANCE OF SERVICE DELIVERY BY CHWs - KIBWEZI STUDY

1. What duration have you been working as community Health Worker?

- 6 - 12 Months
- 13-24 Months
- > 25 Months

2. How many households do you serve in total?

- 1-10
- 11-20
- 21-30
- More than 30

3. Do you think that you adequately serve those households alone

Yes No

4. Do you understand your role clearly and the targets that you are required to meet on monthly basis?

Yes No

5. In your opinion do you think your financial status affects your performance as a CHW?

Yes No

6. In the last 6 months have you missed any monthly meeting?

Yes No

b) If yes state how many times you have missed.....

c) What was the main reason for you failing to attend the meeting?

- Financial constraints
 Long walking distances
 Sickness
 No reason
 Others specify.....

7. Has your performance been evaluated by your supervisor since you started working as a CHW?

Yes No

b) If yes were you given feedback?

Yes No

8. Why did you become a CHW?

- Felt the need to assist the community
 Encouragement by the community
 Encouragement by family members
 Hope for recognition in the community
 Hope for payment of a salary, stipend or in kind tokens
 Hope for advancement of career in the medical field
 Others specify.....

9. On a scale of 1 to 5 how would you rate your job satisfaction as a CHW in relation to your initial expectation :

- 1
 2
 3
 4
 5

[1.Totally unsatisfied 2. Not satisfied 3.Fairly satisfied 4. Satisfied 5. Very satisfied]

10. What major constraints do you face as a CHW?

- Lack of supplies
- Lack of transport
- Lack of support from the community
- Lack of Supervisors support
- Financial constraints

11. Have you ever felt like dropping out from your CHW roles?

- Yes No

12. What in your opinion is the main reason that would make you to stop being an active CHW?

- Discouragement by family members
- Inadequate compensation for work done
- Inadequate appreciation by the community
- Inadequate support and supervision by CHEW
- Uncooperative CHC members
- Financial constraints
- Inadequate training
- Others Specify.....

13. Do you think that you have contributed positively to the improvement of the health status in your community unit?

- Yes No

Thank you so much for taking your time to answer my questions

Name of interviewer.....

Date.....

Signature.....

Appendix IV: Focus Group Discussion guide with CHCs

My name is Ruth Gathoni a student at Kenyatta University I am pursuing a Masters Degree in Public Health. I am currently conducting a research in Kibwezi District which aims at exploring the role of monetary performance incentives in improving community health service delivery. A total of 6CHCs will be interviewed out of whom 3 are those whose CHWs are receiving monetary incentives and another 3 CHCs with CHWS not receiving monetary incentives. You are one of those selected to represent other CHCs in Kibwezi in this study. The study will in among other things assist the Ministry of Health to develop a policy in terms of improving performance of CHWs while endeavoring to offer health services in the households and community at large. Any information I will gather from you will be confidentially treated and no mention of names will be done in the report. Do you have any objection to participating in the discussion regarding this study?

1. Gender representation of the participants
2. Occupation of CHWs
3. Religion of CHWs
4. On average how long have the community Health Worker worked in your CUs?
- 5 Who trained Community Health Worker in your unit?
6. What was the duration of their initial training?
7. Have they had any other training after the initial training? Probe for number of trainings provided, adequacy and areas of improvement
8. How were CHWs selected in your CUs
9. In your opinion do you think financial status CHWs affects their performance? inquire on dialogue and action days meetings as well reasons for not attending meetings
10. Number of households covered by each CHW. Probe for ability to cover, time taken per HH
11. Who supervises the CHW? Probe for frequency, adequacy and performance evaluation including feedback
12. What do think made them enroll as CHWs. Probe for job satisfaction and key remuneration required

13. What constrains do you think CHWs experience while discharging their roles
14. Does the community appreciate the work of CHWs and how
15. What kind of cash payment they receive and how often and if adequate
16. What kind of non- monetary incentives does CHWs Receive?
- 17 which incentive do you think motivates the CHWs most
18. How many CHWs have stopped being active since formation of the units? Probe for main reasons
19. Do you think CHWs have contributed positively to the improvement of the health status in your units?
20. In your opinion do you think that the CHWs are easily accessible to the HHs members and they are clear with the roles they perform?

Thank you so much for your contributions in this discussion

Appendix V: Key Informant Interviews Guide

1. How many CUs are there in total in your District?
2. What is the total number of CHWs in the district?
3. Who is involved in training of CHWs? Probe for number belonging to other partners
4. What is the duration of the initial training of the CHWs?
5. Are there subsequent trainings done on CHWs? State the number.
6. Do you feel that the training done is adequate for the expected roles of CHWs.
7. If No which areas do you think require improvement
8. Who mainly supervises the CHWs and how often are they supervised
9. What non- monetary incentives are the CHWs receiving in your district
10. Are the commodity kits replenished in time and is stock out a major problem for the CHWs
11. Is the support given to CHWs by the MOH adequate and which gaps exist
12. Are any CHWs receiving monetary incentives, state which ones if yes and state the amount
13. Is there a difference in performance between the CHWs who are receiving monetary incentives and their counterparts who are not receiving monetary incentives.
14. Do you think the introduction of monetary incentives will assist in improving the CHWs performance?
15. In your opinion should a CHW be an employee of the government on a salary, should the work on voluntary basis or should they receive a stipend.
16. In the District have you noted discrepancies in performances of CHWs trained by GOK and those trained by other partners.
17. If Yes what do you think would be the main reasons contributing to this difference.
18. Does the community appreciate CHWs in the District, explain
19. What are the main challenges that CHWs face in the District
20. Have the CHWS made any improvements in the area since the rolling out of the programme?
21. Do you have any recommendations regarding the CHW programme and the improving of services offered by the CHWs.

Appendix VI: Map of the study area

