PREDICTORS OF COMMUNITY HEALTH WORKERS RETENTION IN SERVICE IN MAKUENI COUNTY, KENYA

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NOVEMBER, 2016
DECLARATION

This thesis is my original work and has not been presented for award of a degree in any other University:

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DEDICATION

I dedicate this work to members of my family, Beatrice (my wife) and Lisa (my daughter) for their unwavering material, moral and spiritual support all through my period of scholarship.
I take the earliest opportunity to thank Kenyatta University for sponsoring this study. The finalization of this study is a culmination of invaluable contributions by various persons. I wish to extend special thanks to my supervisors, Dr. George Ochieng Otieno, Dr. Julius Korir and Dr. James Mwitari, who gave me unlimited audience and guidance.

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# TABLE OF CONTENTS

DECLARATION...................................................................................................................i
DEDICATION......................................................................................................................ii
ACKNOWLEDGEMENT...................................................................................................... iii
LIST OF TABLES ..................................................................................................................vii
LIST OF FIGURES ..............................................................................................................viii
LIST OF ACRONYMS AND ABBREVIATIONS .................................................................ix
DEFINITION OF OPERATIONAL TERMS ....................................................................... xi
ABSTRACT ............................................................................................................................ xiii

## CHAPTER ONE: INTRODUCTION ............................................................................... 1

1.1 Background of the Study .......................................................................................... 1
1.2 Statement of the Problem ....................................................................................... 6
1.3 Justification of the Study ....................................................................................... 6
1.4 Research Questions ................................................................................................ 7
1.5 Hypotheses of the Study ....................................................................................... 8
1.6 Objectives ................................................................................................................ 8
   1.6.1 Main Objective .................................................................................................... 8
   1.6.2 Specific Objectives ............................................................................................ 8
1.7 Conceptual Framework ......................................................................................... 9
1.8 Scope and Delimitation ......................................................................................... 11
1.9 Chapter Summary .................................................................................................. 11

## CHAPTER TWO: LITERATURE REVIEW ................................................................. 12

2.1 Introduction ............................................................................................................. 12
2.2 Theoretical Review ............................................................................................... 12
2.3 Empirical Review .................................................................................................. 16
   2.3.1 Retention of Community Health Workers ..................................................... 16
   2.3.2 The Community Health Strategy in Kenya .................................................... 17
### Chapter Summary

#### 4.4 Socio-Demographic Factors Influencing Retention among CHWs

- Page 77

#### 4.5 Incentives Influencing Retention among CHWs

- Page 82

#### 4.6 HRM Practices Influencing Retention among CHWs

- Page 86

#### 4.7 Health System Structural Factors Influencing Retention among CHWs

- Page 92

#### 4.8 Predictors of Retention of Community Health Workers in Service

- Page 95

#### 4.9 Chapter Summary

- Page 98

### Chapter Five: Discussion, Conclusions and Recommendations

#### 5.1 Introduction

- Page 100

#### 5.2 Discussion

- Page 100

#### 5.3 Conclusions

- Page 110

#### 5.4 Recommendations

- Page 112

#### 5.5 Recommendations for Further Research

- Page 113

### References

- Page 114

### Appendices

- Appendix 1: Informed Consent Form
  - Page 122
- Appendix 2: Questionnaire for CHWs
  - Page 125
- Appendix 3: Key Informant Interview Guide
  - Page 129
- Appendix 4: Focus Group Discussion Guide
  - Page 131
- Appendix 5: Research Permit from NACOSTI
  - Page 133
- Appendix 6: Ethical Clearance from KU
  - Page 134
- Appendix 7: Map of the Study Area
  - Page 135
- Appendix 8: List of link health facilities
  - Page 136
LIST OF TABLES

Table 3.1 Distribution of Health Facilities into Lowland and Highland .................. 63
Table 4.1 Background Characteristics of Study Respondents .................................. 75
Table 4.2 Socio-Demographic Characteristics Influencing CHWs Retention .......... 78
Table 4.3 Incentives Influencing CHWs Retention .................................................... 82
Table 4.4 HRM Practices Influencing CHWs Retention .......................................... 87
Table 4.5 Community Health Characteristics Influencing CHWs Retention ........ 93
Table 4.6 Predictors of retention among Community Health Workers ............... 96
LIST OF FIGURES

Figure 1.1 Conceptual Framework of the Study ................................................. 10
Figure 2.1 Health Systems Building Blocks ....................................................... 21
Figure 4.1 Retention Status of CHWs ................................................................. 77
# LIST OF ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immune-Deficiency Syndrome</td>
</tr>
<tr>
<td>AMREF</td>
<td>African Medical Research Foundation</td>
</tr>
<tr>
<td>AOR</td>
<td>Adjusted Odds Ratio</td>
</tr>
<tr>
<td>CHEW</td>
<td>Community Health Extension Worker</td>
</tr>
<tr>
<td>CHIS</td>
<td>Community Health Information System</td>
</tr>
<tr>
<td>CHS</td>
<td>Community Health Strategy</td>
</tr>
<tr>
<td>CHUs</td>
<td>Community Health Units</td>
</tr>
<tr>
<td>CHW</td>
<td>Community Health Worker</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence Interval</td>
</tr>
<tr>
<td>CORPs</td>
<td>Community Own Resource Persons</td>
</tr>
<tr>
<td>CSO</td>
<td>Civil Society Organization</td>
</tr>
<tr>
<td>CU</td>
<td>Community Unit</td>
</tr>
<tr>
<td>DCHS</td>
<td>Department of Community Health Strategy</td>
</tr>
<tr>
<td>DHIS</td>
<td>District Health Information System</td>
</tr>
<tr>
<td>FGD</td>
<td>Focus Group Discussion</td>
</tr>
<tr>
<td>GAVI</td>
<td>Global Alliance for Vaccine Initiative</td>
</tr>
<tr>
<td>GHWA</td>
<td>Global Health Workers Alliance</td>
</tr>
<tr>
<td>GOK</td>
<td>Government of Kenya</td>
</tr>
<tr>
<td>HFC</td>
<td>Health Facility Committee</td>
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<tr>
<td>HIV</td>
<td>Human Immune-deficiency Virus</td>
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<tr>
<td>HRH</td>
<td>Human Resources for Health</td>
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<tr>
<td>HRM</td>
<td>Human Resource Management</td>
</tr>
<tr>
<td>IMCI</td>
<td>Integrated Management of Childhood Illness</td>
</tr>
<tr>
<td>ITNs</td>
<td>Insecticide-Treated Nets</td>
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</tbody>
</table>
KEPH  Kenya Essential Package for Health
KII   Key Informant Interview
MCUL  Master Community Unit List
MOH   Ministry of Health
MOPHS Ministry of Public Health and Sanitation
NACC  National AIDS Control Council
NGOs  Non-Governmental Organizations
NHSSP National Health Sector Strategic Plan
OR    Odds Ratio
ROK   Republic of Kenya
ROK   Republic of Kenya
SCHMT Sub-County Health Management Team
SPSS  Statistical Package for Social Sciences
TOWA  Total War against AIDS
WHO   World Health Organization
DEFINITION OF OPERATIONAL TERMS

**Community Health System:** Refers to a system of health service delivery in which households and communities are strengthened and empowered to participate and make decision regarding their health and health related development agendas by increasing their knowledge, skills and participation in health and health related activities.

**Community Unit:** This is a health service delivery structure within a defined geographical area covering a population of approximately 5,000 people. Each unit is assigned 2 Community Health Extension Workers (CHEWs) and community health volunteers ranging from 10-100 depending on the population density, who offer health promotion, preventive and basic curative health services.

**Community Health Worker:** The umbrella term “community health worker” (CHW) embraces a variety of community health aides selected, trained and working in the communities from which they come. They include men or women.

**Community Strategy:** This is a Kenyan community health model which aims at empowering the communities to take charge of their own health through capacity building of community personnel, promoting linkage between the community and formal health system, improving referral and sensitizing the community members to demand for quality health services.

**Health system Structural Factors:** Refers to inputs required to sustain the operations of a health program.
Highland: Refers to a hilly landscape.

Incentives: These are expectations that CHWs had before being recruited into the community health strategy.

Motivation: Desire to serve and perform effectively as a CHW. In this study, the number of assigned activities performed and ability to meet set target was used as an indicator for a motivated CHW.

Preferential treatment: Refers to giving CHWs being served without having to queue with other clients at the health facilities such as when s/he escorts referred patients and when seeking personal medical care in the health facilities.

Retention: This refers to the length of time that an individual CHW actively (which is based on proportion of reports submitted and ability to meet set targets) performs the assigned community primary health care tasks. In this study, a CHW was retained if they had regularly submitted their monthly report up to and including the last two months preceding this study. The two months period was adapted from field practice where a CHW who did not submit monthly workload report for two months was considered to have dropped out. The opposite of retention was taken to be attrition in this study.

Lowland: Refers to land that is low level in comparison with adjacent area
ABSTRACT

Globally, the reported attrition rates of Community Health Workers (CHWs) vary between 3.2% and 77% with high rates being associated with volunteer CHWs. In Kenya, retention rate is estimated at 67% while in Makueni it varies between 50% and 98%. The success of community programmes is often hampered by low retention rates which affects the sustainability of interventions and increases training costs, since it needs continuous replacement which makes the programme difficult to manage. The main objective of this study was to establish predictors of community health workers retention in service in Makueni County. The study used a cross-sectional study design employing mixed methods of data collection incorporating researcher-administered questionnaires, Focus Group Discussions and Key Informant Interviews. The study population consisted of 2,800 CHWs commissioned by the Ministry of Health in Makueni County. Sample size of the study was 603 CHWs selected through Cluster sampling. 552 CHWs participated in the study. Purposive sampling was used to select participants for Focus Group Discussions and Key Informant Interviews. Quantitative data was subjected to descriptive, cross-tabulation and logistic regression analysis using SPSS version 20 software. Thematic analysis was done using Nvivo to gain an in-depth understanding of the study results and triangulate quantitative findings. Results showed that of the 552 CHWs interviewed, 87.7% were married, 78.2% were aged between 30-49 years, 68.1% were females, 59.6% had completed secondary level of education, 97.6% were Christians, 62% were subsistence farmers and 64% were residents in lowland zone. The retention rate among the study participants was 69.4%. Logistic regression results showed that the predictors of retention of CHWs in Makueni County included; financial incentives (p=0.000, OR=129.477), provision of health updates (p=0.000, OR=4.489), belonging to a self-help group (p=0.004, OR=2.555), provision of reporting tools (p=0.000, OR=0.022 and provision of essential medical kits (p=0.000, OR=4.768). In conclusion, there is need to review community health strategy implementation guidelines to harmonize provision of regular financial incentives, essential medical kits, reporting tools and health updates (through more comprehensive training programmes, refresher trainings and regular dissemination and sharing of new health information). The national and county government and partners of the community health strategy should also create effective mechanisms for livelihood support of CHWs such as establishing self-help groups as a sustainability measure for the community health strategy.
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Kenya is an East African country with a population of approximately 43.18 million people (http://data.worldbank.org/country/kenya). The Country is striving to achieve the Strategic Development Goals (SDGs) especially universal health coverage to address the poor health indicators that have been in evidence since the 1990s. There are multiple public health care priorities in the SDGs: the maternal mortality rate, infant and under-5 mortality rates and poverty eradication. As a result, there has been a strong push towards scaling up access to health care through the use of Community Health Workers (ROK, 2010).

Formal Community Health Worker (CHW) programmes have existed in many forms for decades. CHW programmes involve people, generally community members, with limited training (compared to full-fledged physicians/nurses) who are charged with providing some aspect of healthcare to the community: prevention, education, screening, and sometimes diagnosis and/or treatment. Use of community health workers gained prominence following the ALMA ATA declaration in 1978 of “health for all by the year 2000” which advocated for major shift of health care delivery efforts towards disease prevention.

Since Alma-Ata, the renewed focus of public health authorities to produce national blueprints for the rapid scale-up of primary health care missed out on creating ample space for community participation. The comprehensiveness and continuity of care – so basic to the model – were soon replaced by selective interventions for focused
results, including selected maternal and child health interventions and family planning. Well-intended, top down national planning and external support created wave after wave of CHWs in the making and reshaping, under different names and with different roles. Caught between the formal health system and the community CHWs were for a long time seen as a stopgap measure and did not receive the adequate support needed for sustainability (Sundararaman et al., 2012).

When the epidemic of HIV infection set in, community-based care models became more valued (Jaskiewicz and Tulenko, 2012). People living with HIV infection had no choice but to help one another. What evolved was a system rooted in the local context and born out of friendship and a shared experience: mothers supported mothers, gay men supported gay men and grandmothers helped grandmothers. When the early antiretrovirals became available, projects and programmes funded by governments, donors and NGOs spotted the opportunity to utilize existing community HIV support networks and began funding training and development for CHW programmes specific to the needs of HIV programmes, yet largely without being part of the local health services and clinics. What started out as community-based responses began to evolve into multiple, stand-alone CHW programmes focused on HIV care with varying degrees of formality, sustainability, success, support and reporting (Hermann et al., 2009).

CHS has been lauded in improvement of health care coverage and equity, particularly in populations with limited access to health facilities (Haines et al., 2007; llen et al., 2011). CHWs have been utilized in implementation of primary health care interventions aimed at reduction of neonatal mortality such as antenatal home visits, promotion of immediate and exclusive breastfeeding, health promotion on issues such
as hygiene, water and sanitation, defaulter tracing and referral counseling among others (Darmstadt et al., 2008, Baqui et al., 2009).

The community health strategy aims to use CHWs in extending access to appropriate treatment for the community members through CHWs (Otieno, et al., 2012). In line with the global commitment to eliminate preventable diseases, appropriate case management for these diseases at the community level through use of CHWs has become a top concern (WHO, 2013). There is increasing evidence that community-based healthcare can drastically improve access to basic health care at a very low cost since the interventions are mainly preventive. Research has shown that CHWs of various designations, training and supervision within the health system structure are able to successfully manage common ailment and refer complicated cases to formal health facilities (Estelle et al., 2012).

Due to lack of sustainable incentives of CHWs and sufficient support, volunteer CHWs are prone to drop outs rendering programmes that depend on them unsustainable (Lehmann and Sanders, 2007). In Bhutan, retention of CHWs was between 45-50% within the first five years of programme implementation. Reasons advanced for drop out included personal commitment to earn a living, family pressure, hard job and lack of any financial gain (Rahman et al., 2010). Across Sub-Saharan Africa, drop out has been linked to lack of training and supervision of CHWs, lack of transport for supervision and lack of awareness of the community members on the role of CHWs.
In Kenya, The Kenya National Health Sector Strategic Plan (NHSSP) II revitalized the need to involve communities in participation of their own health through The Kenya Essential Package for Health (KEPH) (ROK, 2006). KEPH was initiated as a framework for ensuring accessible and equitable provision of health services to the Kenyan population with a focus on individual life cycle cohorts and levels of care. In this case, community strategy was initiated in 2005 as a mechanism for strengthening the capacity of communities to demand health services through the use of CHWs. The Kenyan Community Health Strategy (CHS) was initiated as a response to deteriorating maternal and infant mortality rates despite increased investment in health (ROK, 2006). This strategy has been associated with improved health care outcomes at the community level (ROK, 2010)

Regional disparities in health services and shortages of human resources in the health sector affect the availability and accessibility of health services. 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 (Wanda and Kate, 2012). This was expected accomplished by establishing sustainable community level services aimed at promoting dignified livelihoods throughout the country through the decentralization of services and accountability.

Community health strategy interventions could be broadly described as the extension of health care systems to the community through a combination of identifying and visiting vulnerable households with relevant frequency to monitor and give care; providing care to families who need care for a sick member at the community level;
and referral to and from the link health facility. According to MOH guidelines, services to be provided by CHWs are generally divided into three broad categories which include disease prevention and control; family health services; and hygiene and environmental sanitation (ROK, 2006).

There has been a strong push towards scaling up access to health care through the use of Community Health Workers. Kenya has developed Vision 2030, a blueprint for transforming the country into a middle-income economy by 2030 through economic, political and social change, where the use of CHWs has been described as a flagship project (ROK, 2007). The workforce involved in implementation of the Community Strategy includes Community Health Workers, Community Health Extension Workers and Community Health Committees. A community Unit is made up of Fifty (50) Community Health Workers each serving 20 households with an estimated population of 5,000 community members. The community Unit is supervised by two (2) Community Health Extension Workers (ROK, 2007).

By December, 2013, through the support of health development partners who included AMREF and BIDII, the Department of Health Services in Makueni County had recruited and trained twenty eight hundred (2800) CHWs and had commissioned one hundred (100) Community Units, each with an average of fifty (50) CHWs and two (2) CHEWs who provide technical assistance, coordination and support to CHWs at the community level (ROK, 2013a).
1.2 Statement of the Problem

Despite the potential benefits accruing from community health strategy such as improving health service coverage and better health outcomes, the programmes faces many challenges such as poor remuneration practices, inadequate supervision, lack of supplies, and poor relationships with communities which affects its sustainability and stability (ROK, 2010). In Kenya, attrition rate among CHWs is estimated to be about 33% (Olang’o et al., 2010) while in Makueni County, the Department of Health Services estimated the attrition to range between 2% and 50% among community units due to variations in the structure, coordination and management of the CUs. (ROK, 2013a).

The shortage of trained health workers coupled with few health facilities in an expansive region creates high dependence on CHWs (Estelle et al., 2012). For this reason, low retention rates create program challenges which results in human resource gaps which need to be filled continuously and this costs time, money and other resources which could have been used to meet other health priorities. This study purposed to establish predictors of CHWs retention in service in Makueni County and make tailored policy recommendations for improving retention and programme sustainability.

1.3 Justification of the Study

Makueni County, Formely Makueni District, was one of the piloted districts for primary health care using community health workers after Alma Ata Declaration of 1978.
In addition, the County has been implementing community strategy since 2006 with partner support from AMREF and GAVI among others hence providing a suitable context for the study.

The findings of the study are beneficial to both the Makueni County Government and other County governments, National Government, Community Health Strategy (CHS) partners, managers and other key stakeholders seeking to strengthen community participation and involvement through volunteer CHWs. In this respect, the findings and recommendation of this study are key in informing policy and programmatic interventions aimed at improving retention of CHWs and particularly useful when planning and implementing actions aimed at improving sustainability of community health strategy programmes that depend on CHWs. With appropriate interventions to reduce attrition, the county governments and other allied stakeholders will achieve savings on training costs associated with replacement of CHWs who drop out of programmes. The study provides a future reference and documentation on predictors of CHWs in community healthy strategy.

1.4 Research Questions

The research questions in this study included:

(i) What are the socio-demographic characteristics predicting retention of CHWs in service in Makueni County?

(ii) Which incentives predict retention of CHWs in service in Makueni County?

(iii) What are the human resource management practices predicting retention of CHWs in service in Makueni County?
(iv) What are the health system structural factors predicting retention of CHWs in service in Makueni County?

1.5 Hypotheses of the Study

The null hypotheses of the study were:

i) Socio-demographic characteristics do not predict retention of CHWs in service in Makueni County

ii) Incentives do not predict retention of CHWs in service in Makueni County

iii) Human resource management practices do not predict retention of CHWs in service in Makueni County

iv) Health system structural factors do not predict retention of CHWs in service in Makueni County

1.6 Objectives

1.6.1 Main Objective

The main objective of this study was to establish predictors of retention among community health workers in service in Makueni County.

1.6.2 Specific Objectives

The specific objectives of the study were:

(i) To determine socio-demographic characteristics predicting retention of CHWs in service in Makueni County

(ii) To establish incentives predicting retention of CHWs in service in Makueni County
(iii) To establish human resource management practices predicting retention of CHWs in service in Makueni County

(iv) To determine health system structural factors predicting retention of CHWs in service in Makueni County?

1.7 Conceptual Framework

The conceptual framework illustrates the relationship between independent, dependent and intervening variables of the study (Figure 1.1). The independent variables of this study were; background characteristics of the respondents (the variables included age, sex, marital status, level of education, religion and occupation), provision of incentives (the variables included provision of stipends and allowances, preferential treatment, provision of transport, provision of certificates and provision of health updates), human resource management practices (the variables comprised selection by community, provision of rewards, provision of identification materials, training duration, appraisal of performance and belonging to a self-help group) and health system structural factors (which comprised availability of reporting tools, availability of referral forms and availability of health products). The dependent variable of the study was retention of CHWs in the community strategy programme while motivation of the CHWs to remain in service was the intervening variable.
**Independent Variables**

**Socio-Demographic Characteristics:**
- Age
- Sex
- Marital Status
- Level of Education
- Religion
- Occupation

**Incentives**
- Provision of Stipends, Allowances
- Preferential Treatment
- Provision of Transport
- Provision of Certificates
- Provision of health updates

**Human Resource Management Practices:**
- Selection by community
- Provision of Rewards
- Identification Materials
- Duration of Training
- Performance Appraisal
- Belonging to a self-help group

**Health System Structural Factors:**
- Availability of Reporting tools
- Availability of Referral forms
- Availability of health products

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**Intervening Variable**
Motivation of CHW

**Dependent Variable**
Retention of CHWs (Retained or Not Retained)

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Figure 1.1: Conceptual Framework of the Study
1.8 Scope and Delimitation

The study covered predictors of CHWs retention in Makueni County. Both government supported and partner supported CUs were included in the study. The study was restricted to Makueni County. The findings and generalizations from the study apply to Makueni County.

1.9 Chapter Summary

This chapter has provided a solid and insightful introduction to the study by discussing the concept, principles and implementation framework of the community health strategy. A clear documentation of the problem statement which indicated the extent, magnitude of the drop outs in the CUs was also provided followed by an explicit discussion of the rationale to the study and selection of Makueni County. Research questions to guide the study were also highlighted, followed by the study objectives and hypothesis of the study. The chapter has also discussed conceptual framework of the study indicating the relationship between study variables. The chapter discussed the scope and delimitation of the study.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents literature reviews from other related studies in Kenya, regionally and globally. The literature review section provided the framework for understanding and synthesizing key concepts, methods and approaches used in the study. The findings of the review were used to identify existing gaps and emerging trends in community health systems. The review was done based on the study objectives. The chapter is organized as follows: community health strategy i.e. implementation of Community Health Strategy (CHS) in Kenya, roles and responsibilities in CHS, success and challenges in CHS, community health system characteristics and human resource management practices, socio-demographic characteristics of CHWs, incentives provided to CHWs, retention and attrition rates of CHWs and factors associated with retention of CHWs. The chapter ends with a summary of the chapter findings and gaps in literature review.

2.2 Theoretical Review

Theoretical review categorized human motivation theories into two main groups: content theories and process theories. The content theories tend to focus on the needs of the individual, trying to explain the different factors that contribute to either encouraging or halting behaviour within that individual. These theories are also appropriately known as “need-based theories.” Some of the more famous theories within this category include Maslow’s’ Hierarchy of Needs Theory (Maslow, 1943), McClelland’s Needs Theory (McClelland, 1958), and Herzberg’s Two-Factor Theory (Herzberg, 1959).
Process theories tend to explain the “why” and or “how” of human motivation. Some notable process theories include Equity Theory (Adam, 1963) and Expectancy Theory (Vroom, 1964).

Equity Theory proposes that a person's motivation is based on what he or she considers to be fairness when compared to others (Adam, 1963). Equity Theory focuses on an employee's work-compensation relationship or "exchange relationship" as well as that employee's attempt to minimize any sense of unfairness that might result (Stecher and Rosse, 2007). Equity Theory deals with social relationships and fairness/unfairness; it is also known as The Social Comparisons Theory or Inequity Theory.

Equity theory of motivation recognizes that motivation can be affected through an individual's perception of fair treatment in social exchanges (Adam, 1963). When compared to other people, individuals want to be compensated fairly for their contributions (the outcomes they experience match their inputs). A person's beliefs in regards to what is fair and what is not fair can affect their motivation, attitudes, and behaviour. Perceptions of inequity are expected to cause employees to take actions to restore equity (Stecher and Rosse, 2007). This theory would not be relevant in the case of CHWs as it will not explain why some workers in the same community unit will drop-out of service while others will choose to continue serving yet all receive the same incentives.

The Expectancy Theory (Vroom, 1964) emphasizes that people will be motivated when they believe their efforts will lead to the outcome they desire. There is evidence that supports the theory's prediction that people respond to inequity by reducing work effort or increase effort to match the desired outcome.
This theory would not apply to CHWs as they serve in voluntary capacity such that reducing or increasing effort would not make them receive any outcomes better than what they already are getting (Stecher and Rosse, 2007).

In this study, content theories were found to be more relevant in understanding the retention of CHWs. McClelland’s Need Theory explores the idea that there are three major needs that one will acquire over their lifetime as a result of the experiences in their careers or in their own personal lives (McClelland, 1958). McClelland believed that in order to understand human behaviour and how an individual can be motivated, one has to understand their needs and inclinations. These needs include Need for Achievement, Need for Affiliation and Need for Power. The Need for Achievement encompasses the desire to do better, to solve problems, and to master complex tasks. The Need for Affiliation is the desire for friendly and warm relations with others. The Need for Power is the desire to control others and influence their behaviour. This theory is useful as a basis for constructing variables to assess whether the work environment for CHWs is able to meet achievement, affiliation and power needs (McClelland, 1958).

Herzberg’s Two-Factor Theory divides motivation and job satisfaction into two groups of factors known as the motivation factors and hygiene factors (Herzberg, 1959). According to Frederick Herzberg, the motivating factors are the six ‘job content’ factors that include achievement, recognition, work itself, responsibility, advancement, and possibility of growth. Hygiene factors are the ‘job context’ factors, which include company policy, supervision, relationship with supervision, work conditions, relationship with peers, salary, personal life, relationship with subordinates, status and job security.
The intrinsic motivators define things that people actually do in their work; their responsibility and achievements. These factors are the ones that can contribute a great deal to the level of job satisfaction of an individual at work. The job context factors, on the other hand, are the extrinsic factors that an employee has no control over and they relate more to the environment in which people work than to the nature of the work itself. The direct approach is to work on the intrinsic, job content factors. This theory was useful in understanding job content factors and their influence on retention of CHWs (Herzberg, 1959).

Based on the theory, balancing the intrinsic and job contents of a staff such as a CHW provides a non-financial motivation for retention. These factors include providing facilitative supervision, clear roles and responsibilities, recognition for outputs, sufficient resources for executing their duties, efficient communication and participation in decision-making processes. Lack of sufficient integration of these motivators in their job context and engagement mechanisms creates demotivation which results into increasing rates of drop out from the programme hence low rate of retention.

Maslow’s Hierarchy of Needs Theory is another human motivational theory that was reviewed in this study. The Hierarchy of Needs Theory (Maslow, 1943) identifies five levels of hierarchical needs that every individual attempts to accomplish in life. The needs start with the physiological (hunger, thirst, shelter) and then move upward in a pyramid shape through safety, social, and esteem needs, to the ultimate need for self-actualization. This final need for self-actualization is defined as one’s ultimate desire to achieve maximum potential. The pyramid shape to the theory is intended to show
that some needs are more important than others and must be satisfied before the other needs can serve as motivators (Maslow, 1943).

According to Maslow, once a lower-level need has been largely satisfied, its impact on behaviour diminishes. The Maslow’s Hierarchy of Needs Theory is useful in understanding the needs and expectations that CHWs have before and after joining the community strategy programme and whether the fulfillment of such needs has an effect on their retention in the programme (Maslow, 1943). Content theories were applied in examining the predictors of CHW’s retention in Community Strategy Programme in Makueni County.

2.3 Empirical Review

2.3.1 Retention of Community Health Workers

Globally, a study done to assess retention of CHWs across many countries found attrition rates to range between 3.2 percent and 77 percent; low retention was reported among CHWs with no financial compensation for their work such as stipends, allowances and reimbursement of expenses incurred when executing their duties (Mulinga, 2014). A review by WHO (2007a) found retention rates of 70 percent over nine months in Senegal and 50 percent over two years in Nigeria. CHWs who depend on community financing had twice the attrition rate as those who receive a government salary.
In Kenya, a review of the implementation of the community health strategy in 2009 showed an retention rate of about 30% after 3 years which is very low (Opiyo and Njoroge, 2009). In another study done in Western Kenya, staff retention among CHWs in home-based care programmes for people living with HIV and AIDS was found to be 67% in one year (Olang’o et al., 2010). This point to challenges in sustainability of the community health strategy owing to the costs associated with new hires/selection such as selection, training and community integration costs.

2.3.2 The Community Health Strategy in Kenya

2.3.2.1 History and Context of Community health Strategy in Kenya

CHW programmes have regarded with some skepticism by the global health community, with lingering concerns around their effectiveness and sustainability given the rapid turnover and continual investment of resources (Rahman et al., 2008). Throughout the late 1970’s and 1980s, in the wake of the Alma Ata declaration, CHW programmes were considered the centerpiece of the “Health for All” agenda, but after substantial investments in initial training, necessary investments were found to be lacking in many countries leading to low retention and variable quality (WHO, 1989).

In 1994, the Kenya Health Policy Framework (KHPF) was developed to pursue the principles of the primary health care agenda. Based on these strategies, community health workers were established to conduct community-based health promotion activities (GOK, 2005; 2010). Political and economic changes within some countries, corruption and or inconsistent donor investment have also affected implementation of the strategy. Government health systems have been largely unable to sustain the supervision required to maintain active CHWs on the ground, so the initial high
expectations have been diminished. In some countries such as Brazil, Bangladesh, India, Iran, Nepal and Pakistan, political support for CHWs was maintained over time, leading to flourishing CHW programmes (Bhutta et al., 2010).

In the last decade, the global health community has returned with renewed enthusiasm to CHW programmes in the light of evidence showing CHWs can make an impact on health under certain conditions and methods, especially in the areas of child survival, nutrition and HIV and AIDS care. The introduction of Integrated Management of Childhood Illnesses (IMCI) preceded this shift, as CHWs were sought out as partners in the delivery of a community-based component of preventive health care (Naimoli et al., 2012).

Countries with the greatest delay in progress toward the SDGs are those in which the health workforces are critically low and suffer from severe rural–urban disparities in health worker distribution (Estelle et al., 2012). Human Resources for Health (HRH) crisis countries are key candidates for urgent coordinated efforts to increase frontline health workers of all kinds including CHWs through long-term partnerships between government health authorities, donors and NGOs as well as civil society involvement (Gilmore and McAuliffe, 2013).

In Kenya, implementation of community health strategy is anchored in the community health strategy guidelines developed by the Ministry of Health (ROK, 2007). The strategy aimed at mitigating the effect of declining use of CHWs and its impact in health outcomes especially the deteriorating maternal and infant mortality rates. This was also justified by the regional disparities in health services and shortages of human
resources in the health sector which affected the availability and accessibility of health services especially at the community level (ROK, 2006).

There has been a renewed interest in CHWs in Kenya since 2006 as defined in the Kenya Essential Package for Health (KEPH) through which community health strategy was a key driver (Olang’o et al., 2010). The implementation of Community Health Services became and remains a top priority for the Ministry of Health. The involvement of CHWs providers was also defined in the first and second National Health Sector Strategic Plans under the Kenya Essential Package for Health (KEPH). The KEPH introduced six levels of health service provision, with level 1 (the community) being the largest and the lowest in the hierarchy of health services, and level 6 (the referral hospitals) the highest level (ROK 2006).

According to Ministry of Health in Kenya, one of the main innovations of KEPH was the recognition and introduction of Level 1 services which aimed at empowering the households to take charge of improving their own health. The intention of the Community strategy was to strengthen the capacity of communities to plan, implement and evaluate health related development initiatives so that they could contribute effectively to the country’s socio-economic development agenda (ROK, 2006).

The overall goal of the community strategy was to enhance community access to health care in order to improve productivity and thus reduce poverty, hunger, child and maternal deaths. This can be accomplished by establishing sustainable community level services aimed at promoting dignified livelihoods throughout the
country. To achieve this, there are various cadres of the workforce involved in implementation of the Community Strategy: CHWs, CHEWs and Community Health Committees (CHFs) (ROK, 2007).

The community health strategy defined the training and support required for CHWs. The strategy established CHWs as the link to primary health facilities through Community Health Extension Workers (CHEWs) who were trained health workers employed in primary health care facilities. CHWs get basic training to help offer basic promotive and preventive tasks at the community level. The CHWs are supported by CHEWs to perform defined duties and responsibilities through supportive supervision, provision of refresher trainings, tackling of challenges facing their work and provision of necessary resources. Establishment of CUs and the training of CHWs is facilitated through the MOH in collaboration with health partners and stakeholders (ROK, 2007).

The health stakeholders supporting community strategy in Makueni County include; AMREF, USAID-APHIA II, APHIA Plus and Global Alliance for Vaccine Initiative (GAVI). By the beginning of 2013, a total of 2943 community health units (CHUs) had been formed throughout Kenya through the support of government and partners (ROK, 2013b).
2.3.2.2 Implementation of Community Health Strategy using a Health Systems Strengthening Approach

2.3.2.2.1 The WHO Strengthening Framework

A good health system delivers quality services to all people, when and where they need them. The exact configuration of services varies from country to country, but in all cases requires a robust financing mechanism; a well-trained and adequately paid workforce; reliable information; well-maintained facilities and logistics to deliver quality medicines and technologies (WHO, 2007b).

Source: WHO, 2007b

Figure 2.1 Health Systems Building Blocks
2.3.2.2 Human Resources for Health and Governance in Community Strategy

Under the CHS the health workforce directly involved in the provision of services at the community level includes the CHC members, CHEWs and CHWs. The KEPH indicates that the CHWs are to be volunteers. The government provides policy guidance for community health services involving CHS providers through the CHS guidelines.

According to the CHS guidelines, within the Kenyan community health structure are sub-locations referred to as level 1 CUs which should cover approximately 5000 people and comprise two CHEWs and 50 CHWs. The CHWs should serve approximately 20 households or 100 people, and each CHEW should supervise and support 25 CHWs (ROK, 2006). CHEWs are trained health personnel who are based at a health facility and attached to sub-locations in the sub-county and county to ensure acceptable standards of care at level 1 of service delivery (ROK, 2007).

CHEWs are expected to provide training to CHWs through demonstration and instruction. CHWs report to CHCs and CHEWs, who are both linked to Health Facility Committees (HFCs) at levels 2 and 3 and subsequently linked to the Sub-County Health Management Team. The members of HFCs at levels 2 and 3 include elected community representatives, with the officer-in-charge of the facility being the secretary to group. Their role is to oversee the management of the facility and its community health programme (ROK, 2007).

The County Health Management Team (CHMT) is expected to coordinate all health activities in the County, which includes supervision of the HFCs at various locations
According to the CHS evaluation report done in October 2010, a member of the Sub-County Health Management Team—particularly the Sub-County Public Health Nurse or the Sub-County Public Health Officer—is selected and trained to be the focal person of the CHS in the Sub-County (DCHS, 2010). The focal person supervises the CHEWs and links the community with the Sub-County Health Management Team.

The CHC is the health governance structure adjoining the community; members are elected at the assistant chief’s baraza (administrative meeting with community elders) to allow for representation of all villages in the CU (ROK, 2006). The chairperson of the CHC should be a respectable member of the community, and it is recommended that a CHW and a CHEW are elected as treasurer and secretary, respectively. The difference between the CHC and the HFC is that the former only exists where there is a CU and only deals with CHS matters, while the latter deals with both facility functions and broad community health programmes beyond those provided under the community health strategy. Community health committee provides feedback to the HFC of the facility acting as the CHS link facility in the locality (ROK, 2006).

Policy guidelines require level-1 structures utilize administrative units at the community, sub-location and location level which are supposed to be linked to the health facilities within them (MOPHS, 2010). Linkage committees exist at each of the levels, and each has specific responsibilities. The decentralization is meant to create a platform for effective community participation in health decision-making processes at levels 1, 2 and 3. The health committees are expected to represent all issues affecting the provision of services in their localities. Leadership at community level is provided
by health facility in-charges with County Health Management Team support, CHEWs, CHWs, village elders, chiefs and other extension workers. These leaders address health issues.

The community health strategy focal person at the sub-county is linked to the FHCs in the County (ROK, 2006). At the sub-county level, the Sub-County Health Management Team provides governance and technical support to level 1 activity such as planning, implementation, monitoring and supervision. CHEWs provide technical support to level 1 by facilitating activities, reporting to HFCs and providing support to CHWs (ROK, 2006).

The HFCs submit reports to the County, and information is shared with other sectors through the facility in-charges. The HFC is responsible for overseeing the functioning of level-1 units, and it includes representatives from the community and facility in-charges. They hold monthly meetings to review progress using indicators that have been generated from information from the facility and the community. There have been reports of misrepresentation of community members by some of their representatives with political backgrounds who pushed for their own interests (MOPHS, 2010).

At community or village (sub-location) level, there are CHCs which form a linkage between the community and the household (ROK, 2006; 2007). They are composed of community representatives and are chaired by a respected community member; the CHEW is the secretary, and the CHW is the treasurer. CHWs report to the CHC on
their day-to-day activities, while the CHC is linked to the HFC through the chairperson of the CHC and the CHEW.

The community governance structure supports local specification, community-based selection and oversight. An evaluation undertaken to assess the effectiveness of the County health management systems in meeting their responsibilities showed that there was a lack of guidelines for the functioning of Sub-County Health Management Team and that both the Sub-County Health Management Team and HFCs faced lack of resources in carrying out their duties (ROK, 2006, ROK, 2010).

2.3.2.2.3 Service Delivery in Community Strategy

The Kenya Health Policy recognizes the role played by CHWs in health service provision which, according to the plan, ranges from informal community programmes to home-based interventions, with much of the responsibility of preventive health shifting to CHWs who are linked with local health facilities (ROK, 2012). CHS interventions could be broadly described as the extension of health care systems to the community through a combination of identifying and visiting vulnerable households.

The services provided by CHWs are those which are defined as level 1 service under the KEPH which include visiting households to monitor and give care; providing care to families who need care for a sick member at the community level; and referral to and from the link health facility (MOPHS, 2010). Reviews have shown that CHWs have been particularly effective in linking communities to health care by providing information, assessing illness and conducting referrals (Kisia et al., 2012).
### 2.3.2.2.4 Financing the Community Strategy

Funding of community health services is one of the factors that influence community health service provision. In Kenya, CHS services are funded by national government, county government, local and international donors/partners. CHWs offer services for free to the community except where they sell commodities as a way of generating income -for example, the sale of contraceptives by community-based distributors (MOPHS, 2010).

Sources for funding for County health services include direct funds from the government (central/county governments)-for example, from taxation-revolving funds (from user fees) and donor funding. Partners/donors often complement government interventions. The funds, which depend on the design of the programme, go into commodities such as training, uniforms and the CHW kit. The government also recommends financing of CHS services through available structures in the community such as income-generating activities (Otieno et al., 2012).

### 2.3.2.2.5 Information Systems Management in the Community Strategy

In the community health strategy programme, data is collected by CHWs and summarized by CHEWs through the use of standardized data collection tools and then uploaded into the District Health Information System (MOPHS, 2010). The information collected by CHWs and CHEWs entails what is referred to as a Community Health Information System (CHIS) and is eventually linked to the National Health Management Information System. The standardized tools used by CHEWs and CHWs are: MOH 513: household register; MOH 514: service delivery logbook; MOH 515: CHEW summary; and MOH 516: chalk board (MOPHS, 2010).
CHEWs are supposed to forward the information collected in these tools to the CHS County Focal Person, who then compiles and submits it to the County Health Records Officer. Apart from contributing to the DHIS, the CHIS also contribute to the Master Community Unit List (MCUL). MCUL is a database of all listed and approved CUs in the country. The MCUL links CUs to link facilities. Unlike data in the DHIS, the MCUL data is mainly permanent and not collected routinely unless changes occur on the ground, such as staff transfers. CHEWs collect data for MCUL using an M and E tool called the Community Unit Checklist, and these are forwarded to the Sub-County Health Records Information Officer (SCHRIO) for entry into the MCUL by the CHS County Focal Person. Community Units are expected to monitor their own health by examining the health-related information in the Community Health Information System (CHIS). The Department of Community Health Strategy evaluation report showed that some CUs had not been introduced to the CHIS and that some tools being used were those of NGOs running parallel programmes (ROK, 2010). An evaluation by Ekirapa et al. (2012) showed that the DHIS was faced with poor data quality and that the data collection tools were inadequate due to frequent changes.

Few community health programmes have adopted the use of mobile technology to facilitate information collection and improve the quality and efficiency of decision-making (Ekirapa et al. (2012). Existing phone-and PC-based applications are used by select programmes in an array of activities such as data management, decision-making guides, disease surveillance, and provider-to-provider communication to support treatment. Programmes such as ChildCount had CHWs using mobile phones to collect health data and receive treatment recommendation (Kisika et al., 2013). Mobile technology is utilized in monitoring the work of CHWs. Mobile technology enhances
the tracking and management of work done by CHWs. The data collected by CHWs are usually linked to electronic health records. This supports providers’ objective of providing services which are needs-oriented (Ekirapa et al., 2012).

The data collected by CHWs has occasionally been shown to have errors and mistakes which results in discrepancies between what is reported and facts on the ground. A study undertaken in western Kenya to determine the reliability of data collected by CHWs concluded that such data should only be used to guide policy after being tested for reliability. Due to the different sources of health information, there is a need to integrate information systems from the various sources (Otieno et al., 2012).

2.3.2.2.6 Supplies and Logistics for Community Strategy

Logistical support is provided to CHWs throughout the country by local health facilities, and in communities through locally available resources. A CHW health system should be supplied with essential drugs and health products for first aid and treatment of common ailments. These include items such as de-worming medicines such as Albendazole; malaria drugs i.e. Amodiaquine; analgesics i.e. Paracetamol, basic dressing supplies such as absorbent cotton wool, adhesive tape, gauze bandage with selvedge, gauze compress and scissors (MOPHS, 2010).

CHWs require safety enhancement supplies such as Jik and gloves; first aid kit with items such as glucose powder, gentian violet, foldable hand stretcher, crêpe bandage and firm liniment ointment and drugs for community case management of common
ailments, such as oral rehydration salts, whitefield ointments, Nutrifit, aluminium hydroxide, Tetracycline eye ointment, multivitamins (MOPHS, 2010).

CHWs require preventive and promotive materials and supplies. These include items such as insecticide-treated nets (ITNs), Water Guard (a sodium hypochlorite solution used to disinfect water), condoms, contraceptives, treatment guidelines, indoor residual spray equipment and supplies, bar of soap, growth monitoring equipment; and information materials (MOPHS, 2010). CHWs require to be facilitated with transport (such as bicycle, motorcycle); communication channels such as phones, airtime and advocacy kits like banners; a bag; and a battery torch and batteries; and data collection/recording supplies i.e. ball pen, note book, referral forms and reporting tools (MOPHS, 2010).

There exist concerns that CHWs and CHEWs face inadequate supplies and logistics. CHWs face a challenge of limited supplies and stock-outs especially in government supported CUs (Yoshito et al., 2015). These shortages of supplies have been attributed to inadequate planning for supplies, especially due to a lack of capacity among planners, a lack of funds and a lack of knowledge of budget limits among planners. Many CUs suffer from a lack of the required basic care kit and stationery such as the reporting tools and the referral forms including CHW identification items such as uniforms and badges. These challenges have been linked to increasing turnover among CHWs in community health strategy (ROK, 2010).
2.3.2.7 Roles and Responsibilities for Key Players in Community Strategy

a) Community Health Extension Officers (CHEWs)

CHEWs are cadres of the Ministry of Health charged with the responsibilities of providing technical support to level 1 (Community level services) by facilitating activities, reporting to Health Facility Committees (HFCs) and providing support to CHWs activities. The CHWs report to the community health committee (CHC) through the community health extension worker (CHEW), who is the secretary to the committee. For CHWs to be effective they need the support of the trained community health extension worker whose main roles include training and continued support to the CHWs according to the felt needs of the community (ROK, 2006; 2007).

In the CHS, CHEWs were identified as supervisors of CHWs. There are two types of CHEWs; a facility CHEW, who was a health worker, usually a nurse, working as a clinical professional in a health facility and a community CHEW, who mainly works with CHWs at the community level. Both kinds are trained using the standard training manual (Kalyango et al., 2012). In the manual, the components of supportive supervision are defined as follows: discussion with CHWs, performance evaluation, inspection of reporting tool, inspection of stocks of supplies, and development of an agreed action plan. Although the frequency of supportive supervision to be given to CHWs is not clearly stated, supervision on at least a monthly basis is implemented in the research area.
b) **Community Health Workers (CHWs)**

The roles and activities of CHWs are enormously diverse throughout their history, within and across countries, across programmes and contexts (WHO, 2007a). The early literature emphasizes the role of the CHWs, which was the term commonly used at the time, as not only a health care provider, but also as an advocate for the community and an agent of social change (Werner, 2011).

The roles of CHWs can be described as: home visits, environmental sanitation, provision of water supply, first aid, treatment of minor and common illness, nutrition counseling, health education and promotion, surveillance, maternal health, family planning, child health, communicable disease control, community development, referrals, record keeping and data collection (Lehmann and Sanders, 2007). In community-based locations, CHWs may routinely provide basic primary care services (Werner, 2011). Although CHWs may be a first point of contact, they provide also a critical link to more clinically-skilled workers and facility-based services for complicated illness or maternal care (Lewin et al., 2010). Wanda and Kate (2012) points to the need of ensuring that CHW roles are aligned to guidelines and tools for evaluating CHW; certification, training and core curricula as a strategy for enhancing retention CHWs in the community health programme.

Over the past four decades, the diverse ways CHWs have been defined, deployed and utilized have trended towards more formal training, an increased emphasis on clinical tasks, improved supervision and stronger linkages to the supporting health system. There is a trend towards CHWs functioning as the first point of care for communities through structured interactions at the household, in community centres and through regular availability to provide urgent care in their own homes (Lassi et al., 2010).
In Kenya, community health workers, as envisioned in the CHS, Taking the Kenya Essential Package for Health to the Community: A Strategy for the Delivery of level one (1) services (ROK, 2007), are the frontline resource persons for community-based health services. CHWs play a critical role in the overstrained health care system, filling the information and distribution gap between people wanting health options and the clinics that provide a range of health services to huge populations, particularly in urban poor communities (Estelle et al., 2012).

CHWs are particularly important in areas where there is inadequate accessibility of facility-based health services. CHWs can increase access, use of health services and have played a role in primary health care, tuberculosis, immunization and family planning programmes. CHWs have promoted the implementation of packages of interventions to reduce neonatal mortality such as improving antenatal visits, promotion of immediate and exclusive breastfeeding, recognition and treatment with antibiotics of sick newborns (ROK, 2006).

2.3.2.2.8 Successes and Challenges in the Implementation of Community Strategy in Kenya

a) Successes of the Community Strategy in Kenya

The community health strategy has been implemented with varying degree of success in government run primary health care services such as immunization, maternal and child health, sanitation and hygiene as well as in vertical programmes run by NGOs like improvement of HIV and TB services. The strategy has resulted in significant progress in increasing childhood immunization, exclusive breastfeeding of children up
to 6 months in life, reduction in childhood diarrhea, improved maternal health, an increase in malaria control interventions, improved access to safe drinking water and good hygiene practices (ROK, 2010).

An evaluation of the community health strategy showed that community strategy has significantly reversed the negative health indicators observed before the implementation of the programme. The service delivery approaches used allowed community participation in the health management system at level-1. The strategy recognized community as the foundation of accessible, acceptable, affordable and equitable health care. Efforts to integrate primary care services in the community health strategy, the strategy has led to improvement in childhood immunization coverage through proper identification and tracing of children born in the community and uptake of ante-natal care and HIV related stigma reduction among others (ROK, 2010).

The CHS has been implemented with varying degrees of success in government-run primary health services (immunization, maternal and child health, water, sanitation and hygiene) as well as in vertical programmes run by non-governmental organizations (NGOs) delivering HIV, tuberculosis (TB) and malaria and other services ((ROK, 2006; Rahman et al., 2010).

b) Challenges Facing Community Strategy Implementation

Several African and South Asian countries are currently investing in new cadres of community health workers as a major part of strategies aimed at reaching the
Sustainable Development Goals (SDGs) (Haines et al., 2007). One review concluded that community health workers did not consistently provide services that were likely to have substantial effects on health and that quality was usually unsatisfactory (Kawakatsu and Honda, 2012).

Implementation gaps have been identified in the community strategy. These gaps include low retention among the voluntary CHWs and a conflict of workload for CHEWs between facility and community tasks. A critical evaluation carried out by JICA in conjunction with the MOH revealed that challenges such as the double role of CHEWs, lack of supplies and logistics and weak supportive supervision (JICA, 2013).

The community health strategy evaluation by Ministry of Health in Kenya identified lack of harmony in training of CHWs where it was found that the number of modules covered for one to qualify as a CHW were not uniform. This problem had been created by health stakeholders only focusing on specific areas of health where they had interest and neglecting other equally important areas requiring intervention. The areas that partners commonly supported included nutrition, home-based care, HIV and AIDs and MCH (ROK, 2010).

Review of community health strategy revealed that CHWs were not adequately equipped to perform their duties such as provision of bicycles to improve mobility in vast CUs, lack of CHW kits with health products and IEC materials for use to educate the community. This was reported to make CHWs lose interest and passion in the programme. The report identified high turnover of CHEWs due to frequent transfer as a bottleneck to community strategy resulting to weak supervision of CHWs (ROK,
2010). CHWs undertook their responsibilities with an understanding that it was on a voluntary basis but they had their own expectations regarding rewards and incentives to be provided by the health system. In many cases these expectations were not met resulting in lower working morale and reduced retention rate (Lewin et al., 2010).

2.3.3 Health System Structural Factors

2.3.3.1 Data Management Tools

Timely and accurate information form the basis for planning and responsive service provision; not much is known about how health workers particularly CHWs value investments in health information technology and its impact on performances of CHW (Mensah and Aikins, 2007). This has serious potential impact on the functionality and success of the CHS. In addition, data tools are central to the success of any programme due to their role in providing required data and information for decision making. Without right data and information, decision-making processes would have been difficult hence hampering the success of the CHS (Teklehaimanot et al., 2007).

CHS has been affected by ineffective and inefficient health information management systems. i.e. use of fragmented and parallel information and reporting systems which varying levels of data quality and comprehensiveness (Lassi et al., 2010). There is lack of sufficient data collection tools and referral forms at the community level for use. The existing tools for reporting are not user friendly in terms of the details required to be filled in by the CHWs. The data tools were reported to be bulky making
it costly to photocopy as it was a culture of photocopying data tools due to shortages of the tools and forms (ROK, 2010; Shah, et al., 2007).

In a community health system, reports and records-keeping are often highlighted for establishing a good monitoring system. Few studies have brought out the importance of building healthy interrelationships and trust among health professionals in building an effective feedback and referral systems in level I services (Teralynn et al., 2014). A study in South Africa describes the relationships between professional nurses and CHWs and how one viewed the other as a threat in their career. Feedback has been cited to be more significant in the overall motivation, performance and retention of CHWs. The critical issues that still remain in this respect are which mode of feedback mechanisms work and how feedback is utilized by CHWs and CHEWs (Arole, 2007).

2.3.3.2 Provision of Medical Kits

Many CHWs expect to be provided with medical kits for providing essential basic care such as first aid. In Somalia and Burkina Faso, for example, medical supplies were organized through sub-county or regional dispensaries, and collected and delivered by CHWs (Syed et al., 2010). Medical kits help CHWs to deliver services and meet the expectations of their clients. When such expectations are met, CHWs are accorded more respect, trust and recognition which motivate them to continue volunteering their services. Where service delivery is compromised by lack of essential medical kits, there is loss of trust and respect from the community resulting to low retention rates (MOPHS, 2008; You et al., 2010).
2.3.4 Human Resource Management Practices in Community Strategy

2.3.4.1 Overview of Human Resource Management Practices in Community Strategy

Globally, shortage of trained health workers was estimated at 2.4 Million while in Sub-Saharan Africa, it was estimated at 1 million (WHO, 2006). In 2006, the WHO made the world aware that sub-Saharan African countries were experiencing a chronic health worker shortage. Kenya was identified as one of the 57 ‘crisis countries’ with an absolute shortage of health workers. Due to the global shortage of health workers, “task shifting”, which involves delegating work to, and effectively training and supporting community own resource persons (CORPs)-CHWs-to deliver health care at community level has been accepted as a solution to increasing access to health services (WHO, 2006).

The Kenya Health Policy (2012-2030) aims to implement priority health reforms envisaged in Vision 2030 with a view to ensure a healthy workforce capable of contributing towards the country’s development agenda. Towards this, the Government’s First Medium-Term Plan 2008–2012 aimed at restructuring Kenya’s health care delivery system to shift emphasis from curative to promotive and preventive health care (ROK, 2012). To facilitate efficient and effective health service delivery and deal with workforce shortage at the health facilities, the MOH developed and is in the process of reviewing the Kenya Essential Package for Health (KEPH) to focus on four tiers of service delivery namely; Community Health, Primary Health Services, County Referral Services and National Referral Services (ROK, 2006).
At the community level, CHWs are seen as relieving doctors, clinical officers, and especially nurse of some of the health promotion and direct care and support work that the formal professional cadres are frequently unable to deliver because of personnel shortages, workload and distances from the communities they service (WHO, 2006). The emerging task shifting framework is to create accreditation and certification programmes for newly trained community health workers and to provide career paths through increased training (WHO, 2013).

The Constitution of Kenya (2010) provides an overarching conducive legal framework for ensuring a more comprehensive and people driven health services delivery. It also seeks to ensure that a rights-based approach to health is adopted and applied in the delivery of health services. The Constitution provides that every person has the right to the highest attainable standard of health. This legislative framework has provided the foundation for sustainable community strategy in which people are empowered to take charge of their own health through a right-based approach of delivering health care to the population irrespective of their social or economic status.

2.3.4.2 Selection of CHWs

A health system needs to plan for adequate numbers of health workers with requisite knowledge, skills and attitudes to deal with the health problems facing the population (AMREF, 2007). Selection of CHWs is often considered a form of patronage. The CHWs are supposed to be selected by their communities with advice from mid-level health workers-nurses, clinical officers, sanitation officers, health educators, public health technicians among others (AMREF, 2007).
The community health strategy recommends that CHWs should be recruited by the community through a baraza (ROK, 2007). There should be adequate involvement of the community in the recruitment of CHWs (Karanja et al., 2012). CHW recruitment is done by a team of selected staff (Geibel et al., 2012) or the area chief or a CHW is recommended by the local health facility to the implementing organization (Karanja et al., 2012). The selection criteria outlined by the CHS include: respected and literate community resident; approachable and able to motivate others; good example in health and development; and willing to volunteer for five years (Kisia et al., 2012).

CHWs are effective where the community has been involved in the recruitment, when they have volunteer and/or leadership experience and when they are married and respected community members (Kisia et al., 2012). There is tendency to recruit previous beneficiaries of services who can easily reach the targeted clients especially among the key population. In such cases, the common occurrence was that of expert patients’ participation in HIV programmes as peers in programmes for MSM or female sex workers or the use of peers to reach deaf people (Geibel et al., 2012; Hatcher et al., 2012).

### 2.3.4.3 Training of CHWs

Lack of skills-based training is frequently mentioned as a barrier to effective CHW performance and retention (Gisore et al., 2013; Teralynn et al., 2014). Observers of community-based contraceptive distribution programmes agreed that the quality and intensity of agents’ training is the main important single determinant of programme quality and impact (Phillips et al., 2009). Effective training requires to be done regularly and continuously, with the needs of the community in mind. Literature
reviews have shown that different sponsors train CHW for varying durations. CHWs who are trained for longer time period are reported to be more effective than those trained for short duration like 5 days only (Gisore et al., 2013).

Evaluations of community health strategy across the region have shown the need for providing regular refresher training and health updates to keep the CHWs abreast with latest development in their scope of work and emerging issues which affect their work relations and work requirements such as new education, new drugs, new diseases among others (Teralynn et al., 2014).

2.3.4.4 Reward Mechanisms for CHWs

Incentives are an important means of attracting, retaining, motivating, satisfying and improving the performance of employees. They can be applied to groups, organizations and individuals and may vary according to the type of employer (Otiendo et al., 2012). Incentives can be positive, negative (as in disincentives), financial or non-financial, tangible or intangible. The relevance of an incentive is influenced by a number of factors: age, value system, location, number of dependents, income, professional background, career stage, sex, labor market conditions, economic conditions and workforce profiles (ICN, 2007). CHWs need for feeling recognized, valued, and supported by the people in their communities has been shown to override the direct financial incentives especially payments. Many programmes have used in-kind incentives effectively. Non-monetary incentives are equally critical to the success of any CHW programme since they provide feasible and sustainable options for maximizing the retention of CHWs (Darmstadt et al., 2008).
CHWs consider reimbursements of cost incurred during community work such as travel and airtime refund and provision of facilitative materials such as bicycles, T-shirts and bed nets a motivation for continuing the service while other value recognition by community members and opportunities for skills development (AMREF, 2010). As an incentive, CHWs can be motivated through exchange visits to neighboring CUs, opportunities to upgrade their knowledge and skills, continuous lifelong training based on CHWs’ expressed needs, needs-based support supervision and coaching, priority when there are paid jobs, logistical support and CHW associations including savings and credit as non-financial rewards (Were, 2011).

Although non-financial rewards are important in retaining and maintaining the engagement and motivation of voluntary CHWs, financial incentives are important in enforcing commitments and reducing attrition especially among CHWs recruited from socio-economically deprived populations (Takasugi and Lee, 2012).

**2.3.4.5 Community Linkages and Networks**

Effective community structures, social networks and existence of CHW-specific associations have been cited as a constructive approach to increase retention rates (Syed *et al.*, 2010). In Haiti, a combination of a prepaid scheme, existing community groups, and revenue-generating activity have been used to motivate CHWs to provide preventive services (Prasad and Muraleedharan, 2007). It has been shown that this arrangement results in active CHWs who have strong ties to the community but are not dependent on it for they become economically independent hence increased retention rates (Syed *et al.*, 2010).
Community Health Strategy is based on a premise that communities are best placed to address equity gaps in health care coverage by identifying needs and involving them in resolving these gaps. There are individual and collective resources in the community which contribute to retention of CHWs. The involvement of targeted community members and beneficiaries requires programme implementers at conceptualization of the strategy to understand the community context and network in which they are planning to operate.

The community health strategy policy stresses the importance of effective networks with communities to ensure the success and ownership of the strategy (ROK, 2006). Effective networks play an important role in creating awareness and providing volunteer members to be CHWs hence increasing sustainability (ROK, 2006). It is important to explore the idea of utilizing institutions existing in the community as internal avenues for supporting sustainability of community health strategy (Kisika, 2013).

These institutions can act as supervisory avenues for community feedback on programme performance during dialogue days and on other leadership and governance issues which are key for its success (Kisika, 2013). Through these links, it is expected that communities will be involved in decision-making and will be able to acquire the necessary information, skills and experience in community involvement to help them take control of their own lives. The evaluation report on community strategy implementation showed that communities had not been adequately empowered to provide feedback on their needs and that there was also a lack of clear structures for enhancing community participation and networking (ROK, 2010).
2.3.4.6 Provision of Identification Materials and Job Aids

The easiest way to strengthen a CHW’s affiliation with the MOH or supporting organization is to provide some form of identification. Identification cards and badges can provide security in politically volatile situations and are status symbols in the community which enhances recognition hence retention (Gisore et al., 2013). Many NGOs have given CHWs branded t-shirts, notebooks, caps and bags that promote recognition and facilitate entry into households during a project (Undie et al., 2012). Some programmes provide bicycles or motorcycles for CHWs to use but usually not owned. People who completed the Red Cross training programme were allowed to purchase and wear the Red Cross smock or T-shirt. The Red Cross symbol identified them as Red Cross volunteers and provided recognition and respect from their communities (ROK, 2010).

Job aids are provided to help CHWs perform the required tasks. While providing a sense of affiliation and enhancing the CHW’s authority, appropriate job aids strengthen skills and are invaluable in increasing confidence. Job aids have included medicines, health education materials such as counseling cards, first aid kits, and pots for demonstrating preparation of weaning foods, pens and pencils, flipcharts, notebooks, and boxes to store records. These frequently cited incentives are important to CHWs’ self-esteem and ability to fulfill their role (Hatcher et al., 2012).

2.3.4.7 Formation of Self-help Groups

Formation of self-help groups has been cited as an important driver of retention. Self-help groups which engage in income generating activities helps strengthen solidarity
and unity among CHWs who have shared goals (You et al., 2010). In Peru, an NGO had effectively mobilized community volunteers into local committees that covered specific geographic areas. Representatives of these committees organized themselves into sub-county associations.

The committees met monthly to discuss experiences and mutually reinforce commitment. They raised funds to cover their own activities, organized training events, and advocated for health with government and the MOH. This arrangement results in dedicated, well trained, and active CHWs who have strong ties to the community strategy but are not dependent on it for they become economically independent (Syed et al., 2010).

**2.3.4.8 Performance Appraisal**

Performance appraisals form the basis of providing incentives and rewards as a means of attracting, retaining, motivating, satisfying and improving the performance of employees (Gisore et al., 2013. Designing effective performance appraisals for CHWs which would be the basis for providing incentives to increase motivation and performance is clearly a complex task and requires careful attention to a range of interconnected factors such as workloads, nature of work, nature of staff and available funds.

In Kenya, CHWs work is appraised based on their ability to meet set targets such as number of households visited and referrals made in a month. A CHEW is tasked with the responsibility of providing supportive supervision to ensure that CHWs achieve their performance targets. Reviews established inconsistencies in performance
appraisals for CHWs; partner supported CUs performance appraisals regularly which form the basis of recognizing and performing CHWs which is in form of certifications of recognition and stipends. There are no formal appraisal mechanisms due to the volunteer nature of the CHWs (Lassi et al., 2010, ROK, 2010). Providing rewards and incentives based on the performance of both individuals and groups creates incentives for higher performance (Syed et al., 2010).

2.3.5 Socio-Demographic Factors Influencing Retention of CHWs

2.3.5.1 Age

Retention of CHWs is influenced by various inherent characteristics of CHWs. In terms of age, the age group of 30 to 40 appears to be the appropriate for selection of CHWs in order to obtain optimum results and higher retention rates. Younger and much older CHWs are reported to produce sub-optimal performance (Ndedda et al., 2012).

2.3.5.2 Sex

Sex of the CHW has been associated with higher retention rate and productivity. It has also been shown that female community health workers are more preferred than the male workers making them feel less important and this may lead to their dropping out (Mayhew et al., 2008). The importance of CHW sex may lie in a combination of preference for female providers and the ability of female CHWs to persuade other women in the community to use modern skilled reproductive health services. The importance of CHW sex is likely to be greater in environments with strong normative
pressure regulating the movement of women and their interactions with men (Mayhew et al., 2008).

2.3.5.3 Marital Status

Marriage and child bearing which play a central and prominent role in the traditional African culture may serve as an additional burden on the health workers, affecting their performance and retention (Egwuatu and Umeora 2007). Family responsibilities influence decisions of CHWs, especially among women than men. Evidence available on performance and staff retention due to a personal situation such as marriage is inconclusive (Lehmann and Sanders, 2007). According to Kok et al. (2014) who conducted a study examining intervention design factors which influence performance of community health workers in low- and middle-income countries, marital status was found to be associated with performance of CHWs. The study found a married CHW to receive support from household members.

2.3.5.4 Education Level

On education, a study by Antwi et al. (2013) which examined factors influencing the delivery of intermittent preventive treatment of malaria in pregnancy in the Bosomtwe District of Ghana found no statistically significant relationship between educational level and retention as well as performance of a CHW. Level of education of a CHW plays a key role in influencing their retention in the community health programme. Higher educational attainment has been associated with increase in attrition rates among CHWs. Educated CHWs were motivated by higher paying jobs which were commensurate with their qualification (Mayhew et al., 2008. Volunteering was
perceived to be a platform for gaining experience and skills key for successful job search in future (Mayhew et al., 2008). Rowe et al. (2007) reported the importance of CHWs’ educational status, including literacy level, in maintaining their high performance.

2.3.5.5 Religion

Religion has been found to have no influence on the retention of a CHW (Ndedda, 2012). The religious beliefs impact the behaviour and perceptions of the CHWs towards practices that contradicts their religious values and beliefs (Wanda and Kate, 2012). Available evidence on religion is not only contradictory in its findings but also inconclusive on the role of religion in retention.

2.3.6 Incentives for Retention of CHWs in Service

2.3.6.1 Overview of Incentives

A main challenge in CHW programmes is motivation of community members to engage in community health work as CHWs, to remain in these positions once trained, and to perform their work effectively over time (You et al., 2010). There is no one right or best way to motivate CHWs to remain in the volunteered programme, but there are some lessons that can be gleaned from the experiences of other CHW programmes from different contextual environments. The main technique adopted in enhancing sustainability to CHW programmes revolves around the use of incentives (You et al., 2010).
Incentives are often understood in a fairly narrow manner, as specific forms of reward-like payments, promotions, or awards-to motivate CHWs to perform specific tasks or achieve a certain level of performance and remain in the programme (You et al., 2010). In the context of this study, these incentives constitute factors that serve as incentives for CHWs to perform well are far more numerous and complex than just the explicit financial or non-financial incentives (in the narrow sense) offered by programmes to reward particular behaviour. Decent salaries and opportunities for advancement may motivate CHWs, but so too can supportive colleagues, a safe working environment, and the recognition of the community (Wanda and Kate, 2012).

2.3.6.2 Financial Incentives

Financial incentives have been used to motivate staff for a long time. Evidence has shown that paid CHWs can work for longer hours to achieve specific objectives within a specified time frame (Estelle et al., 2012). This is possible as the money paid would be used to cater for their basic needs which make it difficult for a CHW to volunteer entirely without pay. These needs include needs for clothing, food, housing, financial stability among others.

Where CHW get financial incentives as monthly stipends, there would be many advantages accruing to the programme such as an opportunity to exercise close and rigorous supervision, programmes can be implemented rapidly, work routines can be standardized and service quality can be maintained. This would enable use of negative reinforces such as firing or punishment to encourage desired performance among those working in the programme (Antwi et al., 2013).
Financial incentives can be used to build economic equity in a minimally literate or economically disadvantaged population such as the CHWs. The main programmatic advantage to cash incentives is high retention rate among paid CHWs (Rahman et al., 2010). In Gongola State, Nigeria, the Rural Health Programme of the Christian Reformed Church found that Voluntary 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. According to the case study, 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 (Egwuatu and Umeora, 2007).

Lack of financial incentives and or giving of very small stipends were mentioned often as the reason why CHWs find volunteer work difficult (Estelle et al., 2012). From a CHW perspective, providing appropriate, respectful, and regular financial compensation is a sign of acknowledgment of their selfless commitment and approval that allows them to earn a living or supplement other personal income. Reviews found that cash incentives are provided in different forms. In some countries, CHWs form part of the formal civil service and paid a salary.

In other countries, CHWs are given a small stipend as an appreciation of their volunteer work. Financial incentives are offered as per diem and travel allowances to attend training and other important events where the CHWs are given the first priority (Mulinga, 2014). CHWs are also accorded the first priority in filling up temporary and casual job opportunities within the MOH such as community mobilization during polio campaigns, taking up cleaner jobs, community education on key projects among
others (Mulinga, 2014). Participation in these activities helps generate income which can be viewed as an appreciation for their work. In some countries, cash incentives are tied to drug sales by giving them a commission on the revenue disbursed at a small fee to the community (Mayhew et al., 2008).

The source of CHW payments can be the community (contributions from individual households), the government, an NGO, or even a for-profit company. The source of funds may affect the role and allegiance of the CHW in the programme. Proper structures and operationalization of the payment system is important in preventing conflict within and among the CHWs and other stakeholders (Olang’o, et al., 2010). Some NGOs have created community revolving drug funds or other types of community-based credit funds specifically for health incentives. When such initiatives are associated with profits that make the incentive for the CHW, its success becomes difficult due to conflicts resulting from personal interest of the stakeholders. When compensation is tied to drug sales, CHWs tend to focus on curative care, while CHWs with salaries maintain both preventive and curative activities (Rahman et al., 2010).

Where the financial rewards system entails a fee-for-service scheme, there occurs a tendency to focus more on curative activities over preventive activities and the over prescription of medications which has harmful effect to the community and the clients. Decentralization of community health system has the potential to increases the flexibility of county government to respond to issues of CHW remuneration in a sustainable manner (ROK, 2013).
Where decentralization of community health system has succeeded, there is evidence of provision of honoraria and travel allowances to CHWs. This is possible in some countries due to success of devolution of health services from the provincial level to the county and community levels. In these cases, the community health programmes are provided with local support at each level of service delivery from the government coffers (Wanda and Kate, 2012).

In Haiti, combination of a prepaid scheme, existing community groups, and revenue-generating activity have been used to motivate CHWs to execute their responsibilities and remain in the programme (Mayhew et al., 2008). Within the community where the CHWs serve, groups of mothers who could demonstrate their knowledge in child survival interventions and whose children were fully immunized and participating in growth monitoring were eligible to receive low-interest loans for income-generating activities. Each group of mothers paid an annual fee for a health card, and the funds were used to support the CHW. These funds have been matched by a one-time grant from the institution sponsoring the CHW programme. Mothers had an economic incentive to learn health interventions in order to have access to the loans (Mayhew et al., 2008).

There exist challenges in administering financial incentives (Wanda and Kate, 2012). For example, although paying CHWs regularly can solve many problems such as work-balance challenges, experience in many countries shows that such payment can have unforeseen negative consequences depending on how it is administered and managed. Use of financial incentives has some negative consequences since the CHWs would inevitably demand more money, benefits, and opportunities for
promotion. Lack of consistency in stipends and allowances may spark desire for quitting the programme (Gisore et al., 2013). If CHWs do not consider their financial rewards adequate, their performance and retention levels may by negatively affected. A study indicated that a major problem with monetary compensation is that payment is often irregular and may end altogether when project funding runs out. As a result, use of more “secure” modes of payment like per diem, transport and field allowance can help create fewer expectations which reduces drop out in case the expectations are not met (Werner, 2011).

Money can be a divisive factor for CHWs and can undermine individual CHW’s commitment and the relationships they have already forged with the communities (Teralynn et al., 2014). CHWs often cite lack of remuneration as a key factor which increases attrition rates among other reasons such as lack of community support and lack of supervision (Teralynn et al., 2014). Where financial incentives are provided, it’s important to ensure that the programme can be sustainable in the long-run to avoid frustrating and disappointing the CHWs which can result into low rate of retention. When the government or an NGO offers monetary support, special effort is needed to compensate for possible distrust or heightened expectations in the community (Teralynn et al., 2014).

Inequity in administration of financial incentives can create discord among CHWs which lead to disunity among the CHWs. Where payment is inconsistent among CHWs working in programmes supported by different partner who perform similar duties and work alongside each other, jealousy, enmity and suspicion ensures which creates tension and de-motivation (Rahman et al., 2010). Irregularity in provision of
financial incentives among CUs creates tension between the paid and unpaid groups (Rahman et al., 2010).

Where financial incentives are provided, CHWs may run into the risk of seeing themselves as employees of the government or NGO rather than as servants of the community (Shin, 2007). Financial incentives can destroy the spirit of volunteerism and work against the volunteer philosophy of a sense of community. Providing a some allowance can reinforce the community’s perception that the CHWs are government employees and lead to expectations that they give even more freely of their time and personal resources which may make the community less willing to support the volunteers in other ways. When people distrust the government, they distrust CHWs who are perceived to be a part of the government system (Shin, 2007).

Provision of non-financial incentives (in-kind payments) which elicit fewer expectations for financial incentives can help increase volunteerism and increase the bond between CHWs and the community. In-kind payments are less prone to comparison because their exact value may be difficult to quantify (Estelle et al., 2012). In-kind payments include; cooking, food, housing, and help with agricultural work and child care. Successful in-kind payments are planned and implemented by the community. Incentives given too often or in too many forms are unsuccessful and de-motivating in the long term (Gisore et al., 2013).

Incentives are necessary for effective service provision by CHWs (Undie et al., 2012). The community health strategy recommends that CHWs should be reimbursed for direct costs they incur in their work, although the same policy has not established a
recommended frequency of visits or working hours per week for CHWs (ROK, 2006). The policy document identifies a lack of incentives as a demoralizing factor for voluntary providers and recommends that, to encourage accountability, the incentives given to volunteers should be handled by local committees and not the central government. Some NGOs have a regular remuneration package for the CHWs with whom they work, and this has resulted in disillusionment for the CHWs working on government programmes (ROK, 2010).

2.3.6.3 Preferential Treatment

CHWs occupy a unique position in the health system. They are usually not full-time salaried health workers, yet they are the pivotal bridge between the community and the health system (You et al., 2010). Compared with other health workers, they tend to have the lowest status because of their low levels of education and poor economic status. Community recognition is a major expectation that influences retention of CHWs (Darmstadt et al., 2008).

In Kenya, the Ministry of Health has been reluctant to treat CHWs as a cadre of health workers yet elsewhere; it has been shown that the CHWs desire to be formally identified with the prestige of the health system. These competing and contradictory tensions create a host of problems related to a CHW’s sense of inclusion in and support from the health system (ROK, 2010).

Several programmes demonstrate appreciation for CHWs’ work through preferential treatment, such as access to credit programmes, literacy classes, or first-in-line treatment at health posts (Robinson and Larson, 2007). In India, the CHW must show
success with an income-generating activity to gain recognition as a health worker. Rather than receiving a salary or wage, the CHW is given access to credit for income generating activities through a bank loan. Other NGO programmes give CHWs, especially women, priority for inclusion in other development programmes, such as group-guaranteed lending and savings programmes (Arole, 2007).

2.3.6.4 Provision of Opportunities for Personal Growth and Development

Personal growth and development is a major incentive and expectation for CHWs. Acquisition of knowledge and skills is seen as a stepping stone to future employment and a necessary component in meeting community health needs (Gisore et al., 2013). Ongoing skill development (acquisition and promotion of preventive messages, basic curative services, problem analysis, and problem solving skills) is viewed as important to retention. CHW posts have been an entry into government employment in some situations, but in many other situations the training and job duties provided are too minimal to prepare CHWs for such employment where it exists (Arole, 2007).

Opportunities for personal growth and development can be provided by giving CHWs opportunities for attending to minor ailments within the community. What difference medical kits can make is described by Otieno et al. (2012) in their study of the impact of a nutrition intervention on a CHW programme. They found that provision and regular refilling of the medical kits helps to sustain their interest and motivation to remain in the programme (You et al., 2010). Provision of reliable drug supplies has been identified as another weak link in CHW retention (Hatcher et al., 2012).
2.3.6.5 Provision of Means of Transport

Reimbursing CHW transport to attend regular meetings among CHWs in a County or given geographic area at a referral health center can promote problem-solving, knowledge sharing, peer-to-peer support, and increase CHW accountability and motivation for retention (Gisore et al., 2013). Lack of locally available transport means such as bicycles and or reimbursement of associated costs especially in vast areas remains as one of key challenges facing retention of CHWs (ROK, 2010).

CHWs are expected to execute their routine duties and attend to their personal commitments, it becomes difficult when time constrains in balancing personal commitment and work roles become evident (Otieno et al., 2012). Long distance between households is perceived to increase workload; a burden to the CHWs who have no effective means of transport. This has been linked to low retention rate. A survey by AMREF to evaluate the performance of CHS indicated that community health workers expect to be supported with bicycles and motorbikes to make their work easier and motivating. The findings also indicated that CHWs are getting disappointed and frustrated due to lack of support for transport hence low retention (AMREF, 2007).

2.3.6.6 Provision of Regular Updates and Training

Effective training occurs where CHWs have sufficient opportunity to practice. Some programmes recommend that the training should take place in the community rather than in health facilities to provide hands-on experience in the work environment of the CHW (Lehmann and Sanders, 2007).
In other contexts, training may take place in the facilities because there are more cases of sick children presenting within the training period, thus providing more opportunities for the trainer to demonstrate skills in a real-life situation and for CHWs to practice newly learned skills. CHWs work within the constraints of the community and usually have limited formal education, programmes often develop or adapt training materials and activities specifically for CHWs rather than using training packages developed for facility-based workers (Lehmann and Sanders, 2007).

While the literature reflects a great diversity of approaches, location, organization and length of training, there is agreement on one matter: that continuing or refresher training is as important as initial training (Gisore et al., 2013). A number of studies have found that if regular refresher training is not available, acquired skills and knowledge are quickly lost and that, on the other hand, good continuing training may be more important than who is selected. Trainings has been cited to improve knowledge on health issues which motivates CHWs to remain in the programme (Alam et al., 2012). Regular and relevant training is valued by CHWs as important for retention and motivation. Providing certificates after training is a major motivation factor for community health workers (Ndedda et al., 2012).

Lack of skills-based training is frequently mentioned as a barrier to effective CHW performance hence lower retention (Gilson et al., 2013). Observers of community-based contraceptive distribution programmes agree that the quality and intensity of agents’ training is the one important single determinant of programme quality and impact. Training can provide CHWs with the opportunity to learn skills, receive education, interact with higher levels of professional staff, and obtain other benefits
that they would not be able to obtain otherwise. Learning skills is one of the main reasons CHWs volunteer (Phillips, 2009).

Training is essential if CHWs are to carry out their work effectively. Training covers not only providing preventive, curative, or other relevant services to the community, but also teaching and communicating with community residents (Teralynn et al., 2014). Training allowed the community health workers to identify causes and treatment of common ailments (Otieno et al., 2012). The ability of CHWs to deliver treatment increased their motivation. To be effective, training has to be done regularly and continuously, with the needs of the community in mind (Gilson et al., 2013).

The right combination of skills can help a CHW become a more qualified worker. In Colombia and Tanzania training strategies were based on community surveys completed by CHW candidates before training began. The skills the CHWs learned were directly related to the health issues in the communities. Robinson and others explain how this training orientation solidifies the CHWs’ connection with the communities while enhancing their standing as they try to meet community needs (Robinson and Larsen, 2007).

Ability of CHWs to provide minor treatment or disease prevention helps them build trust with the community. The design of the training for CHWs should consider the way material is taught, the place where training is carried out, and relevant skills that strengthen CHWs’ ability to educate community members (Gilson et al., 2013). There is need to focus on Problem-solving skills which form a critical part of the training
needed to promote behaviour change rather than knowledge accumulation (Robinson and Larsen, 2007).

2.4 Gaps and Summary of Review

There is evidence that the community strategy is faced with myriad of challenges and lacks sustainability in its implementation. Although many studies have been done on community health strategy, few studies have focused on the retention of CHWs and specifically, in Kenya. Other than being outdated, the findings in them are in many cases contradictory as well as inconclusive on pertinent issues of CHWs retention. Different studies have reported a complex set of factors that affect CHW motivation and attrition but how these factors affect retention varies considerably from place to place depending on the context and operationalization of the programme. Studies on retention of CHWs are limited not only in Makueni but also in Kenya and beyond. There is need to build a model that can help stakeholder to establish the predictors of CHWs’ retention.
CHAPTER THREE: STUDY METHODOLOGY

3.1 Introduction

This chapter gives a description of the methodology applied in the study. It highlights the study design, variables, location of the study, study population, sampling techniques, sample size and sample size determination, pre-testing, data collection techniques, ethical considerations and data analysis.

3.2 Research Design

A cross-sectional descriptive study design was used in this study. This type of study design was appropriate in presenting a snapshot of the study population at one point in time. The approach was also considered appropriate for the study because of its ability to elicit a diverse range of baseline information. The study adopted both quantitative (through semi-structured questionnaires) and qualitative (through FGD and KII) approaches in conducting the study.

3.3 Study Variables

3.3.1 Dependent Variable

The dependent variable of the study was retention among CHWs. A CHW was retained if they had submitted their monthly report up to and including the last two months preceding this study (ROK, 2013a). The two months period was informed by field practice where a CHW who did not submit monthly workload reports for two
successive months without informing the CHEW or a CHW who resigned verbally or in writing from participating in the community strategy programme.

3.3.2 Independent Variables

The study used four (4) independent variables which are; socio-demographic characteristics, provision of incentives, human resource management practices, health system structural factors.

3.4 Location of the Study

The study was conducted in Makueni County which is one of the 47 counties in Kenya. The county is located in the lower eastern part of the country between latitude 1°35′S and longitude 37°10′ and 38°30′E (Appendix 7). Makueni County has a total of 2800 CHWs who were commissioned by the Ministry of Health. The CHWs are assigned to 100 community units (CUs) which have approximately 200 CHEWs; Each CU has 50 CHWs and two CHEWs who coordinate, provide technical assistance and supervise the CHWs activities (ROK, 2013a).

3.5 Study Population

The study population was CHWs working in Makueni County. The Ministry of Health (MOH) trained and commissioned 2,800 CHWs to work in Makueni County as at 31st December, 2013.
3.5.1 Inclusion Criteria

The study involved participants who had met the following criteria: (i) any individual CHW who had worked in Makueni County for at least 6 months since their commissioning and (ii) Any CHW who was selected to take part in the study and consented to do so was included.

3.5.2 Exclusion Criteria

The study excluded persons who were sick at the time of the interviews to the extent of being unable to withstand the interviews. Decision on excluding sick CHWs was based on self-reports from the individual CHWs. Using this criteria, six (6) CHWs were excluded from participating in the study.

3.6 Sampling Techniques

Probability and non-probability sampling techniques were used to select study respondents. Cluster sampling was used to select CHWs who took part in the study using Zone of Work (Lowland and Highland) as the criteria. This type of clustering was used in order to study variations (if any) on retention given the work context of the CHW. The following procedure was applied:

**Step 1:** All GOK facilities in the six sub-counties of Makueni County (which are the link facilities for CHWs) were mapped into lowland and highland. The table 3.1 presents the distribution of health facilities following the mapping.

**Step 2:** The sample of 603 was apportioned proportionately to lowland \((78/130)\times 603 = 362\) and highland \((52/130)\times 603 = 241\)
Table 3.1: Distribution of Health Facilities into Lowland and Highland Areas

<table>
<thead>
<tr>
<th>Zone of Work</th>
<th>Makueni East</th>
<th>Kibwezi East</th>
<th>Kaiti</th>
<th>Kibwezi West</th>
<th>Mbooni</th>
<th>Kilome</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highland</td>
<td>5</td>
<td>0</td>
<td>22</td>
<td>0</td>
<td>10</td>
<td>15</td>
<td>52</td>
</tr>
<tr>
<td>Lowland</td>
<td>27</td>
<td>18</td>
<td>0</td>
<td>19</td>
<td>14</td>
<td>0</td>
<td>78</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>18</td>
<td>22</td>
<td>19</td>
<td>24</td>
<td>15</td>
<td>130</td>
</tr>
</tbody>
</table>

Source: Makueni County Health Office, 2014

Step 3: A list of all CHWs who were trained in Makueni County since year 2005 when community strategy was launched in Kenya from the County Department of Health Services. This was the sampling frame for purposes of this study. The list contained names of CHWs, their telephone numbers, the name of the CU they belonged to, the date when the CU was launched and the link health facility the CU was attached to, and the name of the CHEW supervising each CU and their telephone number. The sampling frame was divided into two parts to indicate the zone of work as lowland or highland.

Step 4: Using computer-generated random numbers, representative samples of 362 and 241 CHWs working in lowland and highland respectively were selected.

Step 5: Using an Excel worksheet, the selected CHWs were sorted randomly by their link facility in order to use the facility as the point of entry to the community.
Step 6: To get to each CHW, trained research assistants were guided by CHEWs of the link facilities to schedule appointments for face to face interviews. The venue of the interview was a place convenient to both the CHW and research assistant. The health facility where the CHW was attached was not used as a venue since it would not have been a neutral ground for the interview. The time of interview was agreed between the research assistant and the CHW according to the convenience of both.

3.7 Sample Size Determination

The sample size was determined using the following formula by Fisher et al. (1998):

\[ n = \frac{Z^2 \cdot P \cdot (1-P) \cdot D}{d^2} \]

Where:

Z = Standard Normal deviation (1.96 for a 95% confidence level)

P = the proportion of the population having the characteristic being measured (P=0.67, a study Olang’o et al., 2010) where retention rate was 67% among CHWs)

d=the level of accuracy desired, or the sampling error (Often set at 0.05).

D= Design effect, in this study = 2, to take care of variations in retention among CHWs in lowland and highland zones.

Sample size before adjustment for a population less than 10,000

\[ n = 1.96^2 \cdot 0.67 \cdot 0.33 \cdot 2 / 0.05^2 = 679.5, \text{ approximately } 680. \]

Sample size before adjustment=680
Sample size after adjustment for a population less than 10,000

The population of CHWs in Makueni County is 2,800. The following formula was used for the adjustment of sample size:

\[ n_f = \frac{n}{1 + \left(\frac{n}{N}\right)} \]

Where:

- \( n_f \) = The final sample size, when the population is < 10,000
- \( N \) = The sample size of the populations of the 10,000 or more
- \( N \) = Total population size from which the sample is drawn

\[ n_f = \frac{680}{1 + \left(\frac{680}{2800}\right)} = \frac{680}{1.24} = 548.3 \text{, approximately 548.} \]

Sample size after adjustment = 548

An additional 10% allowance for non-response among respondents was added bringing the sample size to 603. A total of 552 respondents participated in the study representing a response rate of 92%.

3.8 Pre-Testing of Tools

Pre-testing of study instruments was done in Muumandu CU in Machakos County which was a distant from the study location. The ecological conditions and the characteristics of the respondents in the selected CU were similar to those of the study sites. This was important to ensure the pre-testing results and review of the study tools reflected the opinions, views and needs of the study respondents.
Few changes were conceived during pre-testing such as: reducing the number and length of the study tools to minimize the time required to conduct an interview, proper placement of the questions in the study tools to enhance logical flow of questions and answers and revision of questions which were not clear to the respondents especially those who had dropped from volunteering; the questions were revised to read in past tense so as to refer to the period they were CHWs.

3.8.1 Validity

Validity is the accuracy and meaningfulness of inferences, which are based on the research results. In other words, validity is the degree to which results obtained from the analysis of the data actually represent phenomenon under study. Validity has to do with how accurately the data obtained in the study represents the variables of the study (Mugenda and Mugenda, 2003).

In this study, to ensure internal validity of tools, random sampling techniques were used to enhance homogeneity and representativeness of selected population while random selection of a large sample of study respondents and comparison of results with studies done elsewhere was done to enhance external validity of the study. The study used other similar study questionnaires to inform and guide development of the study tools and measurement of items included in the tools as measure of enhancing validity of the tools. Expert opinion from the supervisors was sought and their inputs taken into account in development of the study tools to enhance validity.
3.8.2 Reliability

Reliability is a measure of the degree to which research instruments yields consistence results or data when used repeatedly in a manner that decreases random error (Mugenda and Mugenda, 2003).

To achieve reliability, Cronbach’s alpha test was done using Using SPSS Version 20 to determine reliability of the instruments used in this study. According to Sekaran (2002), coefficients which are greater than 0.6 but less than 0.8 are considered good. The average Cronbach’s alpha reliability coefficient for the instrument was 0.775 which was within the acceptable reliability range hence reliable for measurement of CHWs’ retention.

3.9 Data collection

3.9.1 Development of Data Collection Instruments

There were no standard instruments previously developed for assessing factors predictive of retention hence the questions used in the study were formulated based on gaps in literature. Both quantitative data and qualitative data was collected using researcher-administered study tools. The questions were grouped into four main sections: background characteristics, incentives, human resource practices and community health system functionality characteristics. 552 CHWs were interviewed using a pre-tested structured questionnaire while 20 Key Informants were interviewed using a key informant interview guide (Appendix 3). 3 FGDs were conducted using an FGD guide (Appendix 4).
3.9.2 Data Collection Process

3.9.2.1 Data collection points

This was a community-based study. Data collection was from the community since community health strategy focuses on the community members. The health facilities were used to link the CU for effective and efficient service delivery. To collect the data, CHEWs were used to link the research assistants with the selected community members through their CU chairpersons. Where applicable, the CHEWs helped convene a meeting of the selected CHWs to a common point of convenience where the interviews took place. Where converging in a common venue was not possible, the research assistants traced the CHWs to their homes where the interviews were done. Tracing the CHWs was done using their cell-phone numbers provided by the CHEWs. FGDs and KII were scheduled at neutral venues within the CU coverage and at convenient time for all the respondents to enhance increased participation and quality of data collected.

3.9.2.2 Training of Research Assistants

Research assistants were recruited and trained to assist in collection of data for the study. The research assistants were interviewed and selected based on their experience, education qualification and knowledge in similar assignments. Ten (10) research assistants who had at least 3 years of experience in data collection and management were selected for the study. All of them had a degree in health-related courses and were knowledgeable in the implementation of community health strategy. They were all proficient in use of local language which helped in interviewing participants who were only proficient in local language.
A two-day training workshop for the research assistants was organized to ensure they were in tandem with the study and field work procedure. The training modules covered the study objectives and research questions, methodology of the study, study design and data collection procedures, data quality checks and management, ethical requirements, interactions with the study participants and other key individuals such as county staff. The training aimed at ensuring:

i. The exercise was conducted successfully in line with the ethical requirements

ii. The data collected was of the highest quality standards

iii. The exercise is properly completed within the set timelines and

iv. Teamwork during the exercise.

The training was conducted by principal investigator using lectures, group exercises, exercises and role plays (researcher and respondent) to explain how to deliver the exercise effectively.

3.9.2.3 Quantitative Data Collection

During data collection at the field, informed consent was sought from each selected respondent by reading the consent form (Appendix 1) to each respondent after which the respondent either accepted or declined to participate in the study. Any respondent who didn’t consent to participate was thanked for his/her time.
3.9.2.4 Qualitative Data Collection

3.9.2.4.1 Key Informant Interviews

A total of 20 Key Informants comprising CHEWs, Sub-county MOHs and County Health Officers (Director of Medical Services and Chief Health Officer) were done. Key Informants who participated in the study were selected purposively based on their experience, knowledge and understanding of the subject matter under investigation.

A list of Key Informants and their contacts was obtained from the Department of Health Services in the county. The interviewees were notified of their selection and purpose of the interview through phone calls. Their consent to participate in the study was sought and once the consent was given, they were asked to propose a convenient time and place (where necessary) for the interview after which an interview schedule for the key informant interviews was prepared. Interviewees were reminded of the interview one day before the date of interviews.

All face-to-face interviews were done in the offices assigned to the participants. At the time of interview, only the interviewee and the study team were allowed in the interview room. During the interview, recording of responses was done with the consent from the interviewees. At the end of the day’s work, summaries of interviews were noted on key statements to help determine whether point of saturation (where no new information was generated) had been reached.
3.9.2.4.2 Focus Group Discussions

Three (3) Focus Group Discussions were conducted. Participants for the FDGs were selected purposively from a list of those who were not selected to participate in the researcher-administered questionnaire. The discussions were done in convenient and neutral venues for all the participants.

To ensure availability of participants for focus group discussions, participants were notified about the venue and purpose of the discussions one week earlier and were reminded two days before the date of interviews. The venues for the discussions were selected in such a way that all participants were free to contribute without fear or intimidation. By the time of concluding the third FGD, the point of saturation had been reached since there were no new insights coming out from the discussion hence no need for more FGDs.

During the discussions, note taking and recording of responses was done with the consent from the discussants. At the end of the day’s work, summaries of discussions were noted on key statements to help determine whether point of saturation (where no new information was generated) had been reached.

3.10 Data Analysis

In quantitative analysis, descriptive statistics (frequencies, means and standard deviation) were computed. Test of independence were derived to show whether there was a statistically significant relationship between independent variable and the dependent variable (retention of CHWs).
Variables which showed a statistically significant relationship \((p<0.05)\) were subjected to logistic regression model to identify the predictors of CHW retention. The regression model was also used to derive odds Ratios which were used to determine likelihood of retention for variables that indicated a statistically significant relationship \((p<0.05)\).

Likelihood Ratio (LR) test and Hosmer-Lemeshow (H-L) test of goodness of fit were used to test the suitability of the regression model. The LR test has the hypothesis that the model with intercept only is preferred to one with explanatory variable. The model with intercept only gave a log likelihood value of \(-340.0284\) and the model with explanatory variable gave a log likelihood value of \(-149.96613\). The resulting LR statistics was \(380.12\) which was statistically significant at 1 percent level \((p=0.000)\). This implied that the model with intercept only was rejected and the model with the explanatory variable was appropriate. The Hosmer-Lemeshow (H-L) test of goodness of fit was done. A chi-square value of \(365.05\) was obtained and it was not statistically significant at 5 percent level \((p=0.9998)\) which implied that the data fitted well with the model.

Qualitative data was analyzed using Nvivo by categorization into themes as per the study variables. This was then followed by cleaning and coding of the respondent’s statement into sub-themes based on the study objectives. Nvivo software was used to organize key statements from the extracts to help in synthesizing and interpreting the study findings. On synthesis of the findings, key statements were extracted in verbatim form to support the findings emerging from analysis of the data and to validate the quantitative findings.
3.11 Ethical Considerations

Proposal approval to conduct the study was granted by Kenyatta University Graduate School. Ethical approval was obtained from Kenyatta University Ethical Review Committee (Appendix 6) and a research permit was granted by National Commission for Science, Technology and Innovation (NACOSTI) (Appendix 5). Clearance from local authority to conduct the study was also obtained from Makueni County Government. Informed consent to participate in the study was obtained from study respondents and confidentiality was maintained by ensuring privacy of the study participants.

Consent form was used to obtain informed consent as well as enable respondents inquire on any issues of concern that related to the study especially ethical concerns (Appendix 1). The identities of the respondents involved in the study were duly protected by ensuring that the names of the participants were not indicated in the data collection tools. Data collected from the field was kept in a lockable box to ensure security and confidentiality and only the principal investigator had access to the contents thereof.
CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the findings of the study on the predictors of CHWs retention in Makueni County, Kenya. Detailed analysis of the data, interpretation and explanation of the results with regard to objectives and the research question are given. The findings are based on information from questionnaire survey from a representative sample of 552 CHWs and consultative discussions using focus group discussions and key informant interviews. A total of 552 respondents against a target of 603 (CHW) participated in quantitative studies. This was a response rate of 92%. The chapter is organized as follows: Background Characteristics of respondents, CHWs’ expectations, Human Resource Management Practices, Community Health System Characteristics and Predictors of CHWs’ retention.

4.2 Socio-Demographic Characteristics of Study Participants

This section presents information regarding background characteristics of the study respondents. The section is divided into seven parts namely: Age, Sex, Marital Status, Age, Sex, Level of Education, Occupation and Religion. Table 4.1 presents a summary for the background characteristics of the respondents.
Table 4.1 Background Characteristics of Study Respondents

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (552)</th>
<th>percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>48</td>
<td>8.7</td>
</tr>
<tr>
<td>30 – 39</td>
<td>238</td>
<td>43.1</td>
</tr>
<tr>
<td>40 – 49</td>
<td>194</td>
<td>35.2</td>
</tr>
<tr>
<td>50+</td>
<td>72</td>
<td>13</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>176</td>
<td>31.9</td>
</tr>
<tr>
<td>Female</td>
<td>376</td>
<td>68.1</td>
</tr>
<tr>
<td><strong>Level of Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary level not completed</td>
<td>15</td>
<td>2.7</td>
</tr>
<tr>
<td>Primary level completed</td>
<td>208</td>
<td>37.7</td>
</tr>
<tr>
<td>Secondary level and above</td>
<td>329</td>
<td>59.6</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>36</td>
<td>6.5</td>
</tr>
<tr>
<td>Married</td>
<td>484</td>
<td>87.7</td>
</tr>
<tr>
<td>Others</td>
<td>32</td>
<td>5.8</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farmer</td>
<td>342</td>
<td>62</td>
</tr>
<tr>
<td>Business</td>
<td>156</td>
<td>28.3</td>
</tr>
<tr>
<td>Casual labourer /wage earner</td>
<td>54</td>
<td>9.8</td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christians</td>
<td>539</td>
<td>97.6</td>
</tr>
<tr>
<td>Muslim</td>
<td>13</td>
<td>2.4</td>
</tr>
</tbody>
</table>
In relation to age, the mean age of respondents was 40 years with a standard deviation of 9 years. The age ranged between 20 and 70 years. Majority of the respondents (43.1%) were aged between 30-39 years. Regarding the sex of the respondents, 68.1% of the respondents were females.

In relation to marital status, 87.7% of the respondents were married. Singles comprised 6.5% of the respondents while the divorced, separated and widowed) comprised 2.8% of the respondents. In terms of the highest education level, 37.7% had completed primary level of education while 59.6% had completed secondary level of education. In regard to occupation, 9.8% of the respondents comprised of casual labourers while 62.1% practiced farming. In relation to religion, 97.6% of the respondents were Christians while Muslims represented only 2.4% of the respondents.

4.3 Retention Status of CHWs

In this study, retention was defined proportion of CHWs who had been submitting monthly reports up to two months preceding the study since they were trained and assigned households as documented in the CHEWs records. Information was obtained regarding retention status among CHWs who were interviewed and the results were summarized in Figure 4.1.
Five Hundred and Fifty Two (552) respondents were interviewed of which 69.4% were retained.

**4.4 Socio-Demographic Factors Influencing Retention among CHWs**

The results on socio-demographic characteristics influencing retention among CHWs are summarized in Table 4.2.
Table 4.2: Socio-Demographic Characteristics Influencing Retention among CHWs

<table>
<thead>
<tr>
<th>Variable</th>
<th>Retained</th>
<th>Not Retained</th>
<th>p-value</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>28(77.8%)</td>
<td>8(22.2%)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>327(67.6%)</td>
<td>157(32.4%)</td>
<td>0.204</td>
<td>0.595</td>
<td>0.265</td>
<td>1.336</td>
</tr>
<tr>
<td>Others</td>
<td>28(87.5%)</td>
<td>4(12.55)</td>
<td>0.294</td>
<td>2.000</td>
<td>0.540</td>
<td>7.409</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20–29</td>
<td>28(58.3%)</td>
<td>20(41.7%)</td>
<td>0.080</td>
<td>0.502</td>
<td>0.231</td>
<td>1.092</td>
</tr>
<tr>
<td>30–39</td>
<td>172(72.3%)</td>
<td>669(27.7%)</td>
<td>0.823</td>
<td>0.934</td>
<td>0.515</td>
<td>1.695</td>
</tr>
<tr>
<td>40–49</td>
<td>130(67%)</td>
<td>64(33%)</td>
<td>0.302</td>
<td>0.728</td>
<td>0.398</td>
<td>1.332</td>
</tr>
<tr>
<td>50+</td>
<td>53(73.6%)</td>
<td>19(26.4%)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>125(71%)</td>
<td>51(29%)</td>
<td>0.568</td>
<td>1.121</td>
<td>0.758</td>
<td>1.659</td>
</tr>
<tr>
<td>Female</td>
<td>258(68.6%)</td>
<td>118(31.4%)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level of Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary level not completed</td>
<td>10(66.7%)</td>
<td>5(33.3%)</td>
<td>0.599</td>
<td>1.340</td>
<td>0.448</td>
<td>4.009</td>
</tr>
<tr>
<td>Primary level completed</td>
<td>176(84.6%)</td>
<td>32(15.4%)</td>
<td><strong>0.001</strong></td>
<td>3.685</td>
<td>2.382</td>
<td>5.702</td>
</tr>
<tr>
<td>Secondary level and above</td>
<td>197(59.9%)</td>
<td>132(40.1%)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christians</td>
<td>376(69.8%)</td>
<td>163(30.2%)</td>
<td>0.232</td>
<td>1.977</td>
<td>0.654</td>
<td>5.974</td>
</tr>
<tr>
<td>Muslim</td>
<td>7(53.8%)</td>
<td>6(46.2%)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>109(69.9%)</td>
<td>47(30.1%)</td>
<td>0.998</td>
<td>0.999</td>
<td>0.661</td>
<td>1.510</td>
</tr>
<tr>
<td>Casual labourer</td>
<td>35(64.8%)</td>
<td>19(35.2%)</td>
<td>0.453</td>
<td>0.794</td>
<td>0.434</td>
<td>1.453</td>
</tr>
<tr>
<td>Farmer</td>
<td>239(69.9%)</td>
<td>103(30.1%)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In relation to age, 73.6% of the respondents who were aged 50+ years were retained. Among the respondents who were aged 20-29 years, 58.3% were retained. There was no statistically significant relationship between age and retention of CHWs (P>0.05). KII and FGD respondents reported that young CHWs were less likely to be retained as they join community strategy expecting employment. The older CHWs are said to be discouraged (de-motivated) by long walking distances involved in community work especially during home visits as one Key Informant put it:

"... The aged feel they may not be able to cover long distances involved in home visits... Youthful CHWs drop out immediately they get something to do or go to college..."

In relation to sex, among the respondents who were females, 71% were retained. Among female respondents, 68.6% were retained. Although there was no statistically significant relationship between sex and retention of CHWs (P>0.05), female CHWs were reported to value knowledge acquired from training for a healthy living of their family and community as a motivating factor. The following statement by a Key Informant illustrates the above-mentioned point:

"...Yeah, most of the active CHWs are females... Female CHWs are more interested because they feel it would help their families..."

In terms of marital status, there was no statistically significant relationship between marital status and retention of CHWs (p>0.05). Both KII and FGD respondents reported that CHWs who at the time of recruitment were married were likely to be retained compared to those who were single as they may be married outside their
current residential area. This point was well captured by a Key Informant who stated thus:

"...Ladies who are single at the time of recruitment are likely to drop out of the programme when they get married out of their current residential area..."

In regard to education level, 84.6% of the respondents who had completed primary level of education were retained. Among those who had completed secondary level of education and above, 59.9% were retained. There was a statistically significant relationship between level of education and retention of CHWs. A CHW who had completed primary level of education was 3.68 times more likely to be retained compared to a CHW who had completed secondary level of education and above (P=0.001; CI= 2.38-5.70). The study found that less educated CHWs were discouraged by their inability to execute key duties which required higher literacy abilities. A statement by one respondent in a focus group discussion captured this state of affairs:

“....Utesi Kusoma na Kuandika ndutonya kususya voomu na kuandika malivoti ala maile kutungwa na kiu nikitonya utuma utula na uiumgama...”

(If you are not able to read and write, you cannot fill the data forms and reports. This will make you feel out of place)

There was another dimension where CHWs with secondary level of education and above dropped out in pursuit of other opportunities. The following statement by a Key Informant explains the point:

"...Level of education affects retention because most of those who are learned are able to access other opportunities to engage themselves..."
In terms of occupation, 69.9% of the respondents who practiced farming were retained. The retention status of respondents who were farmers was almost similar to that of those who practiced business as an occupation. There was no statistically significant relationship between occupation and retention status of CHWs (p>0.05). KII and FGD responses indicated that CHWs involved in flexible occupations were more likely volunteer due to their ability to balance their responsibility with routine commitment. The following statement was captured during a focus group discussion:

“..Wia uu wienda mundu wina mwanya wautethya mawia make vate kuvingiiswa. Amwe maitu makolile wia uu nundu wa masaa nundu maina mwanya wa kutembea nduani nundu wa kukwatana mawiani moo ma kimusyi...” (This work requires individuals with a flexible job which acts as a source of income because we are not paid…..Actually, some of our colleagues give up because they cannot get time to catch up with their routine activities especially moving from one household to another because they are busy elsewhere)

In relation to religion, 69.8% of Christian respondents were retained. Among Muslim respondents, 53.8% were retained. There was no statistically significant relationship between religion and retention status of a CHW (p>0.05). Responses from Key Informants and FGDs showed that religion was perceived to make CHWs fail to attend meetings and participate in key activities for fear of being reprimanded by their church leaders particularly due to differing religious beliefs on socialization and health practices involved in community strategy work. A statement by a respondent in a focus group discussion illustrated the point:
“..Ekana na andu ma katholiki, ve angi ala maasyaa natangie, asu maiendaa kuwetaniwa na kikundi kii maikese kumanyika ni vasita woo....” (Leave alone the Catholics, we have those who call themselves saved, they don’t want to be associated with this group because they are monitored by their pastor)

4.5 Incentives Influencing Retention among CHWs

The results on influence of incentives among CHWs are summarized in Table 4.3.

Table 4.3 Incentives Influencing Retention among CHWs

<table>
<thead>
<tr>
<th>Variable</th>
<th>Retained</th>
<th>Not Retained</th>
<th>p-value</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Incentives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>288(90.3%)</td>
<td>31(9.7%)</td>
<td>0.001</td>
<td>13.495</td>
<td>8.576</td>
<td>21.236</td>
</tr>
<tr>
<td>No</td>
<td>95(40.8%)</td>
<td>138(59.2%)</td>
<td>1.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>376(70.4%)</td>
<td>158(29.6%)</td>
<td>0.001</td>
<td>10.164</td>
<td>6.623</td>
<td>15.599</td>
</tr>
<tr>
<td>No</td>
<td>7(38.9%)</td>
<td>11(61.1%)</td>
<td>1.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of Health Updates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>184(91.5%)</td>
<td>17(8.5%)</td>
<td>0.001</td>
<td>8.267</td>
<td>4.819</td>
<td>14.184</td>
</tr>
<tr>
<td>No</td>
<td>199(56.7%)</td>
<td>152(43.3%)</td>
<td>1.000</td>
<td>1.000</td>
<td></td>
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</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6(54.5%)</td>
<td>5(45.5%)</td>
<td>0.325</td>
<td>0.522</td>
<td>0.157</td>
<td>1.735</td>
</tr>
<tr>
<td>No</td>
<td>377(69.7%)</td>
<td>164(30.3%)</td>
<td>1.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of Certificates</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12(70.6%)</td>
<td>5(29.4%)</td>
<td>0.913</td>
<td>1.061</td>
<td>0.368</td>
<td>3.060</td>
</tr>
<tr>
<td>No</td>
<td>371(69.3%)</td>
<td>164(30.7%)</td>
<td>1.000</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In relation to financial incentives, among the respondents who said they received financial incentives, 90.3% of them were retained. There was a statistically significant relationship between provision of financial incentives and retention of a CHW. A CHW who had received financial incentives was 13.49 times more likely to be retained compared to one who had not received any financial incentives (P=0.001; CI= 8.58-21.24). Responses from KII and FGDs indicated that some programmes provided CHWs with financial incentives inform monthly stipends and allowances to facilitate their work. CHWs who received stipends and allowances were more retained the service. A statement from a Key Informant explains the point:

"...I think there was some token that was given to the community health workers when they participated in some key health promotion activities but once that token was withdrawn most (40) of them drew back..."

Responses from FGD indicated that where financial incentives were promised but not provided, it led to discouragement among CHWs:

“...Amwe maitu twalikile wiani uu nundu nitwamanyaa tukakwataa kasamu kanini indi maundu nimavindukie. Amwe maitu mai yi matatia wia uu ethiwa vaithiwa uvandiliku...”

(Some of us are becoming inactive because they thought they would be given something. They started discovering there was nothing after which they got discouraged. I think even now, about 20, almost half of those remaining can give up any time)
In relation to preferential treatment, among the respondents who said they received preferential treatment, 70.4% of them were retained. There was a statistically significant relationship between preferential treatment and retention of a CHW. A CHW whose had received preferential treatment at a facility was 10.16 times more likely to be retained compared to those on who did not receive preferential treatment (P=0.001; CI= 6.623-15.599). Responses from KII and FGDs indicated that CHWs expected to be given first priority during service delivery as a way of recognizing their contribution in the community. A statement from a focus group discussant explains the point:

"...When I get to the facility, I am given first priority in getting treatment which makes me feel good and appreciated..."

In relation to provision of health updates, 91.5% of the respondents who had received health updates were retained. There was a statistically significant relationship between provision of health updates and retention. A CHW whose expectation for provision of health updates had been met was 8.26 times more likely to be retained compared to one whose expectation for provision of health updates was not met (P=0.001; CI= 4.82-14.18). Responses from KII and FGDs showed that acquisition of health-related knowledge is an expectation perceived to be important for family and community health living. The following statement from a Key Informant highlights the above-mentioned point of view:

"...Eeeeh, during the time of training, we hear that they are interested because the knowledge gained would help their families to maintain their health. They value it for a healthy living..."
In relation to means of transport, 54.5% of the respondents had received a bicycle as a means of transport were retained. There was no statistically significant relationship between provision of bicycles and retention (p>0.05). Results from KII and FGDs indicate that CHWs find it difficult to cope with their personal commitment and CHW work without a suitable means of transport. Where bicycles are supplied, only a few CHWs have access to them as not all in community unit are supplied. Inadequacy of bicycles was highlighted in a statement by one respondent in a focus group discussion:

“....Amwe maitu nimanengiwe isululu. Uthuku nikana kila mundu niwe wisuuviasya kisululu kyake na ndutungiawa mbesa ila watumia kuseuvya. Kwoou kwithiwa na kisululu kui useo wivo nundu ni ngalama...” (Some of us were given bicycles. Even those with bicycles have to use their own money to repair the bike, and there is no refund. So, it is an additional cost to have a bicycle)

In relation to provision of certificates after training, among the respondents who had been awarded a certificate (after the initial induction training), 70.6% of them were retained. There was no statistically significant relationship between being provided with a certificate after training and retention status (p>0.05). Responses from KII and FGD indicated that provision of certificates of participation after initial training is an expectation which has been partially met. Only community units which were supported by partners were in many cases issued with certificates after training which resulted in de-motivation among other CHWs. A Key Informant who is a focal person for community strategy had this to say:
"... You find that those who were not given certificates tend to pull out of the programme because it raises issues such as why those trained by AMREF were given while we didn’t receive any certificate. Does it mean other trainings are not recognized? ..."

4.6 HRM Practices Influencing Retention among CHWs

The results on human resource management practices influence retention of CHWs are summarized in Table 4.4.
Table 4.4: HRM Practices Influencing Retention among CHWs

<table>
<thead>
<tr>
<th>Variable</th>
<th>Retained</th>
<th>Not Retained</th>
<th>P-Value</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self Help Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>264(79.5%)</td>
<td>68(20.5%)</td>
<td><strong>0.001</strong></td>
<td>3.295</td>
<td>2.262</td>
<td>4.799</td>
</tr>
<tr>
<td>No</td>
<td>119(54.1%)</td>
<td>101(45.9%)</td>
<td>1.000</td>
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<tr>
<td><strong>Provision of Rewards</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>8(53.3%)</td>
<td>7(46.7%)</td>
<td>0.253</td>
<td>0.494</td>
<td>0.176</td>
<td>1.384</td>
</tr>
<tr>
<td>No</td>
<td>375(69.8%)</td>
<td>162(30.2%)</td>
<td>1.000</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Selection by Community</strong></td>
<td></td>
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<tr>
<td>Yes</td>
<td>373(70.1%)</td>
<td>159(29.9%)</td>
<td>0.055</td>
<td>2.346</td>
<td>0.958</td>
<td>5.747</td>
</tr>
<tr>
<td>No</td>
<td>10(50%)</td>
<td>10(50%)</td>
<td>1.000</td>
<td></td>
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<tr>
<td><strong>Training Duration</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 days</td>
<td>160(67.5%)</td>
<td>77(32.5%)</td>
<td>0.407</td>
<td>0.857</td>
<td>0.595</td>
<td>1.234</td>
</tr>
<tr>
<td>10 &amp; 15 days</td>
<td>223(70.8%)</td>
<td>92(29.2%)</td>
<td>1.000</td>
<td></td>
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<td></td>
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<tr>
<td><strong>Performance Appraisal</strong></td>
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<tr>
<td>Yes</td>
<td>7(46.7%)</td>
<td>8(53.3%)</td>
<td>0.253</td>
<td>0.494</td>
<td>0.176</td>
<td>1.384</td>
</tr>
<tr>
<td>No</td>
<td>162(30.2%)</td>
<td>375(69.8%)</td>
<td>1.000</td>
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<td></td>
<td></td>
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<tr>
<td><strong>Training Duration</strong></td>
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<tr>
<td>5 days</td>
<td>160(67.5%)</td>
<td>77(32.5%)</td>
<td>0.407</td>
<td>0.857</td>
<td>0.595</td>
<td>1.234</td>
</tr>
<tr>
<td>10 &amp; 15 days</td>
<td>223(70.8%)</td>
<td>92(29.2%)</td>
<td>1.000</td>
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<tr>
<td><strong>Performance Appraisal</strong></td>
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<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7(46.7%)</td>
<td>8(53.3%)</td>
<td>0.253</td>
<td>0.494</td>
<td>0.176</td>
<td>1.384</td>
</tr>
<tr>
<td>No</td>
<td>162(30.2%)</td>
<td>375(69.8%)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Provision of ID</strong></td>
<td></td>
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</tr>
<tr>
<td>Yes</td>
<td>218(69.6%)</td>
<td>95(30.4%)</td>
<td>0.877</td>
<td>1.029</td>
<td>0.714</td>
<td>1.483</td>
</tr>
<tr>
<td>No</td>
<td>165(69%)</td>
<td>74(31%)</td>
<td>1.000</td>
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</tr>
</tbody>
</table>
In terms of belonging to self-help groups, 79.5% of the respondents who belonged to a self-help group were retained. There was a statistically significant relationship between belonging to a self-help group and retention of CHWs. A CHW who belonged to a self-help group was 3.295 times more likely to be retained compared to one who didn’t belong to a self-help group (P=0.001; CI= 2.26-4.79).

KII and FGD responses indicated that belonging to a self-help group enhanced retention of CHWs in the community strategy because the group members engage in activities which promote solidarity. A statement by a Key Informant representing an NGO highlighted this point thus:

"...To ensure sustainability in community programmes, we have a programme called Savings and Loan Association whereby we give loans to self-help groups to start IGAs as a way of enhancing retention and empowering of CHWs..."

Belonging to a self-help group was said to enhance members' availability to submit monthly workload report while they held their group meetings. This point of view was captured in a focus group discussion for a community unit supported by an NGO:

“...Nitwambiie kikundi kya kukovethania mbesa na tukomanaa kila mwei muthya. Twakomana niwo tuetae livoti sya munene witu....”

“...We started Saving and Loan Association in the Self-help group to keep us together. We meet monthly to make our contributions and at the same time we submit our reports...”
In relation to selection of CHWs by community members, 70.1% of the respondents who were selected by community members were retained. There was no statistically significant relationship between selection by community members and retention of CHWs (P>0.5). The fact that community members were involved in the selection of CHWs was highlighted during KII and FGDs indicating that community members participated in selecting CHWs through Baraza’s to ensure they get CHWs they deem best to serve them. One Key Informant had this to say:

"...The community health workers were selected by community members during Baraza’s and community itself knows them better...The community was sensitized about the qualities of a CHW and the nature of their work. Then they were told to choose those who met the qualities and who they trusted for the work..."

In regard to provision of rewards, 53.3% of the respondent who had received rewards for their performance were retained. There was no statistically significant relationship between provision of rewards for meeting targets and retention of CHWs (p>0.05). Responses from KII and FGDs brought out the fact that there was no clear policy on rewards and performance appraisal system with evident differences in administration of rewards among government and partner organizations which is a source of demotivation among CHWs. One Key Informant who was a Sub-County MOH had this to say:

"...Although there is no guidelines on how and what rewards to provide to performing CHWs, we occasionally recognize those performing well, for instance, if there is an activity such a polio campaign and research projects,
we give them the first priority. Others are employed as casuals in the hospitals but there is no criterion for doing so…"

Respondents from a focus group discussion held among CHWs in a government supported Community Unit stated that CHWs from government supported community units were not given rewards. The following statement highlights this point of view.

"..Vai kindu unengawe wathukuma muno. Na kethiwa ve kindu ta kiu andu no kuluma wiani uu. Ikundi ila isavotiwe ni NGO ta Amref na Bidii nimanengawe kindu indi ila sya silikali mainengawe kindu mathukuma nesa…"

(No rewards are given for the work done. If they were there, there would be no dropouts…Those community units supported by partners like AMREF and BIDII are the ones which get some rewards and incentives for their work)

In terms of training, 46.7% of the respondents who had undergone a training period of five (5) days were retained. There was no statistically significant relationship between duration of initial training and retention of CHWs (p>0.05). Responses for KII and FGDs indicated that the duration of training was inadequate to cover key modules. There was a difference in duration of initial training where partner supported CHWs were trained for 15 days while those from government supported CHWs were trained for 5 or 10 days. The following statement was captured during a focus group discussion:

"..Amwe maitu nimasomethiwe mithenya itano na angi mithenya ikumi. Kwoou andu vaa mayianenie umanyi. Ve mowau amwe maitu matesi uvo wamo na nitukomanaa na mowau tutesi undu tutonya kwikana namo…”
Some of us were trained for 5 days while others were trained for 10 days. Those of us who were trained for 5 days did not cover some diseases yet we face them in the community.

In regard to performance appraisal of CHWs, 46.7% of the respondents whose performance was appraised on a monthly basis were retained. There was no statistically significant relationship between provision of rewards for meeting targets and retention of CHWs (p>0.05). Responses from KII and FGDs showed that there was no policy on performance appraisal. A statement by one Key Informant who was a Sub-County MOH amplifies the point:

“… There is no such system in place unless we introduce it. We expect those CHWs performing well will be recognized and appreciated through formal appraisal and rewarding systems…”

A FGD discussant commented:

“…Munene witu ndiasiasya wia witu. Twamunenge livoti noou…”

(Our supervisor does not check on our work. He is only interested in records and registers of active members)

In regard to provision of identification (IDs) materials such as branded hats, T-shirts and badges, 69.6% of the respondents who were provided with IDs were retained. There was no statistically significant relationship between being provided with an ID and retention of CHWs (p>0.05).
Responses from KII and FGD revealed that lack of provision of IDs affected the morale of CHWs as they felt they were not recognized in the health system. The following statement by a Key Informant who was a Sub-County MOH illustrates this point:

"...Yeah, some CUs are provided with identifications but others don’t have. This affects them because it de-motivates them especially when they take a patient and are asked ‘who are you?’"

IDs were not provided to all CHWs making those who don’t have unable to identify themselves to clients and other health care providers at higher levels of referral system. A respondent in a focus group discussion said:

“...Na saa ingi niuvuthwa uikulwa nue uu. Ona niisa oneka ta wi king’ei.Kii niutuma mundu akola kuthukuma wia uu...”

(Without identification, the villagers can even mock you and suspect you to be a thief and this can make you lose morale to continue volunteering)

### 4.7 Health System Structural Factors Influencing Retention among CHWs

Results on Community Health Characteristics influencing retention among CHWs are presented in Table 4.5.
Table 4.5: Health System Structural Factors Influencing Retention among CHWs

<table>
<thead>
<tr>
<th>Variable</th>
<th>Retained</th>
<th>Not Retained</th>
<th>P-value</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Availability of Reporting Tools</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>82(82%)</td>
<td>18(18%)</td>
<td>0.002</td>
<td>2.285</td>
<td>1.323</td>
<td>3.947</td>
</tr>
<tr>
<td>No</td>
<td>301(66.6%)</td>
<td>151(33.4%)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Supply of Health Products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>71(85.5%)</td>
<td>12(14.5%)</td>
<td>0.001</td>
<td>2.977</td>
<td>1.568</td>
<td>5.653</td>
</tr>
<tr>
<td>No</td>
<td>312(66.5%)</td>
<td>157(33.5%)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Availability of Referral Forms</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>152(73.2%)</td>
<td>56(26.9%)</td>
<td>0.143</td>
<td>1.328</td>
<td>0.908</td>
<td>1.942</td>
</tr>
<tr>
<td>No</td>
<td>231(67.2%)</td>
<td>113(32.8%)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In regard to availability of reporting tools, 82% who said that reporting tools were available were retained. Among the respondents who said that the reporting tools were not available, 66.6% of the respondents were retained. There was a statistically significant relationship between reporting tools and retention of CHWs. A CHW who had inadequate reporting tools was 2.285 times more likely to be retained compared to one who didn’t have adequate reporting tools (P=0.002; CI= 1.323-3.947).

In terms of availability of referral forms, 73.2% of the respondents who said that referral forms were available were retained. Among the respondents who said that the referral forms were not available, 67.2% of them were retained. There was no
statistically significant relationship between availability of referral forms and retention of CHWs ($p > 0.05$). Responses from KII and FGDs showed that there were inadequate reporting tools making monthly reporting a challenge. The following statement was made by a Key Informant who is a focal person for community strategy in one Sub-County:

"...For now the data collection tools are a big challenge. Some CHWs are forced to make copies at their own cost..."

Respondents indicated that adequacy of referral forms forced CHWs to escort clients to the facilities or even use word of mouth to their de-motivation. The following statement came up from a Key Informant who was a CHEW:

"...Referral forms are available but sometimes we run out of supply and at that point, we are forced to improvise..."

In addition, referral forms were not adequately supplied to all community units making some community units to be dysfunctional. The following concern was voiced by a respondent in a focus group discussion who said:

“...Mavoomu amwe saa ingi nimakosaa na tuiandika mathangu na tuitumia makisaisi. Kula muwau wathi monekaa ta mate mawo..”

(Referral forms are not always available. We refer by escorting them to facility. Sometimes we are forced to use exercise books and these are not taken seriously at the receiving health facility)
In regard to supply of essential health products, 85.5% of the respondents who were provided with essential commodities were retained. Among the respondents who said they were not supplied with the essential commodities, 66.5% were retained. There was a statistically significant relationship between provision of essential commodities and retention of CHWs. A CHW with adequate supply of essential commodities was 2.977 times more likely to be retained compared to one without adequate supply of health products \( (P=0.001; \text{CI}= 1.568-5.653) \). Responses from KII and FGDs indicated that where medical supplies were provided, those in other community units not provided felt discriminated against while the beneficiaries felt frustrated by frequent shortages. A statement by a Key Informant who was an NGO representative revealed:

"...Availability of medical supplies is very important and it is one of the key things I would actually put emphasis on. The CHWs are complaining that they cannot meet expectations if they are not well equipped with essential supplies...”

### 4.8 Predictors of Retention of Community Health Workers in Service

The main objective of this study was to determine the predictors of retention among CHWs in Makueni County. To achieve this objective, the study subjected all independent variables that showed a statistically significant relationship with the dependent variable (retention status of CHWs) to a logistic regression model and the results summarized in Figure 4.6.
Table 4.6: Predictors of retention among Community Health Workers in Service

| Variable              | Odds Ratio | Std. Err. | Z     | P>|z|  | 95% CI for OR |
|-----------------------|------------|-----------|-------|------|----------------|
|                       |            |           |       |      | Lower  | Upper  |
| Age                   | 1.034      | 0.020     | 1.690 | 0.091| 0.995 | 1.074 |
| Sex                   | 1.097      | 0.357     | 0.280 | 0.777| 0.579 | 2.077 |
| **Marital Status**    |            |           |       |      |       |        |
| Married               | 0.334      | 0.226     | -1.620| 0.105| 0.089 | 1.256 |
| Others*               | 0.970      | 1.130     | -0.030| 0.979| 0.099 | 9.521 |
| **Education**         |            |           |       |      |       |        |
| Primary level         | 3.650      | 3.543     | 1.330 | 0.182| 0.544 | 24.466|
| Secondary and Above   | 3.119      | 1.079     | 3.290 | 3.290| 1.583 | 6.145 |
| **Financial Incentives** | 129.477   | 60.520    | 10.410| **0.000**| 51.799 | 323.637|
| Preferential Treatment | 0.248      | 0.183     | -1.890| 0.059| 0.058 | 1.052 |
| Health Updates        | 4.489      | 1.795     | 3.760 | **0.000**| 2.050 | 9.829 |
| Self-help group       | 2.555      | 0.821     | 2.920 | **0.004**| 1.361 | 4.798 |
| Reporting tools       | 0.022      | 0.011     | -7.610| **0.000**| 0.008 | 0.059 |
| Essential medical kits | 4.768      | 1.708     | 4.360 | **0.000**| 2.363 | 9.620 |
| Constant              | 0.395      | 0.390     | -0.940| 0.347| 0.057 | 2.736 |

* Comprises respondents who were Separated, Divorced and Windowed
When the regression model was predicted, provision of financial incentives, provision of health updates, formation of self-help groups, provision of reporting tools and referral forms were the predictors of CHW’s retention.

There was a statistically significant relationship between expectation for financial incentives and retention of CHWs. A CHW whose had received financial incentives was 129.477 times more likely to be retained compared to a CHW who had not received any financial incentives (P=0.000, CI for OR= 51.799-323.637).

There was a statistically significant relationship between providing regular health updates and retention of a CHW. A CHW who was provided with regular health updates was 4.489 times more likely to be retained compared to one who was not provided with regular health updates (P= 0.000, CI for OR= 2.050-9.829).

There was a statistically significant relationship between belonging to a self-help group and retention of CHWs. A CHW who belonged to a self-help group was 2.555 times more likely to be retained compared to one who didn’t belong to a self-help group (P= 0.004, CI for OR= 1.361-4.798).

There was a statistically significant relationship between availability of reporting tools and retention of CHWs. A CHW was 0.022 times more likely to be retained where reporting tools were available compared to when reporting tools were not available (P=0.000, CI for OR=0.008-0.059).
There was a statistically significant relationship between availability of medical kits and retention of CHWs. A CHW who had a medical kit was 4.768 times more likely to be retained compared to one who didn’t have a medical kit (P= 0.004, CI for OR= 1.361-4.798).

There was no statistically significant relationship between age, sex, marital status, education and preferential treatment and retention status of CHWs (P>0.05).

4.9 Chapter Summary

This chapter has reported findings of the study based on the study objectives. In relation to background characteristics and retention of CHWs, none of the variables was a predictor of CHW retention (p<0.05) i.e. marital status, age, sex, occupation and religion of a CHW had no statistically significant relationship with retention of a CHW (p>0.05). In terms of CHWs expectations, results revealed that expectations for provision of financial incentives, and provision of health updates had a statistically significant relationship with retention of a CHW (p<0.05). Provision of Transport means and Certificates had no statistically significant relationship with retention of a CHW (p>0.05).

In relation to the six human resource management practices studied, performance appraisal and belonging to a self-help group had a statistically significantly relationship with retention of CHWs (p<0.05). Rewards for meeting set targets, selection by community members and provision of IDs had no statistically significantly relationship with retention of CHWs (p>0.05).
In regards to the community health system functionality studied, availability of reporting tools and essential health products had a statistically significant relationship with retention of a CHW (p<0.05). Availability of referral forms had no statistically significantly relationship with retention of a CHW (p>0.05). In relation to predictors of CHWs retention, provision of financial incentives, provision of health updates, belonging to a self-help group, provision of reporting tools and provision of essential medical commodities (p<0.05) were found to predict retention of CHWs.
CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion, conclusions and recommendations of the study based on the study objectives and findings. The chapter related the qualitative and quantitative findings of a study and interprets them according to the literature reviewed and according to the researcher’s observations. The findings were analyzed according to the research questions and objectives. The outcomes were compared with other similar studies to help highlights similarities and differences in findings. The chapter is organized as follows: background characteristics, CHWs’ expectations, human resource management practices and community health system characteristics on retention of CHWs.

5.2 Discussion

5.2.1 Socio-Demographic Characteristics and Retention of CHWs

Marital status was not associated with retention of CHWs (p>0.05). This was also reported in a study by Ndedda (2012) who carried out a cross-sectional study in Busia County, Kenya on effects of selected socio-demographic characteristics of community health workers on performance of home visits during pregnancy in which marital status was not associated with performance of a CHW. Married CHWs are reported to more active and performing than singles, divorced and separated CHWs which was similar to a study finding conducted by Kok et al., (2014).
This was attributed to their advantage of having more family members (not only their partner but also other relatives) to help with their household duties. Having fewer household duties encourages CHWs to work more actively and reduces the dropout rate (Ahmed, 2008). One of the barriers preventing a CHW from being active was heavy amount of household duties (Yeboah-Antwi et al., 2010). Further study is needed to confirm the relationship between marital status and the amount of household duties as well as retention rate among CHWs.

Age of a CHW was not associated with retention (p>0.05). This finding was similar to that of Gisore et al. (2013) in which age of CHWs was found not to influence retention of a CHW in service. There were more Older CHWs retained in service than younger CHWs due to the fact that they were more settled in life compared to younger CHWs who tend to have more competing priorities and tasks such as desire for new jobs which are better paying, stable relationship and accomplishment in life among others. A previous research showed that CHWs over 40 years old were more retained and active than the youthful ones (Kalyango et al., 2012). This finding differed with that of Ndedda et al. (2012) which showed that the age group of 30-39 years was more retained and hence appropriate for selection of CHWs. The finding was also similar with other studies done in the Sub-Saharan region (Ndedda et al., 2012; Gisore et al., 2013) in which younger CHWs (age 20-29 years) were reported to be less retained due to desires for better paying jobs and competing personal goals in life.
Sex of a CHW was not associated with retention of a CHW in service (p>0.05). This was similar to a past study done by Teralynn et al. (2014) where sex of a CHW was not statistically significantly associated to retention of a CHW. The study indicated that most CHWs were females mainly due to the fact that women were more concerned about the health and wellness of their family and children. Volunteering in community health strategy has been perceived to be an opportunity to acquire health related knowledge for keeping their families healthy especially among women CHWs who value healthy families (Alam et al., 2012).

Education level was associated with retention of CHWs (p=0.001). Education has been associated with better reading, writing and reporting abilities. CHWs with secondary level of education and above had low retention rate particularly due to desire for new and better careers opportunities (Estelle et al., 2012) compared to those who had lesser educational attainment. A high level of education would contribute to a high level of health knowledge acquisition and likelihood of transferring it to beneficiaries, one of the performance indicators for the CHWs. CHWs with a higher educational status would easily understand how to write and submit their monthly report (Rowe et al., 2007). This is in line with the current community health strategy policy in which one of the selection criteria for a CHW (GOK, 2006; 2007).

CHWs with higher educational attainment were reported to have dreams for alternative higher employment and their commitment may not be hundred percent. On the other hand, CHWs with middle education (primary and secondary level) could learn and enhance their skills in the management of common illness and thereby
deliver better care to the community (Baqui et al., 2009). Resultantly, career prospects for CHWs and their aspirations may have significant impact on their retention.

Although religion was not associated with retention of CHWs (p>0.05), individual religious beliefs have been shown to limit ability and willingness of CHWs to attending meetings and participating in key activities (Mayhew et al., 2008). Some faithful fear being reprimanded by their church leaders who hold conflicting religious beliefs on socialization and health practices involved in community strategy work especially those that contradict their religious beliefs and teachings. A study by Egwuatu and Umeora (2007) found religion to influence ability of a CHW to perform on her duties and responsibilities particularly those that conflict with their religious practices; in some religions, members are barred from accepting formal health care such as immunization of children and treatment in hospitals. Instead, they are encouraged to seek spiritual intervention.

Occupation was not associated with retention of CHWs (p>0.05). This can be attributed to the fact that the study was carried in rural set up where all CHW have almost similar source of income or are supported by families for their upkeep or do other tasks to supplement their livelihoods (Kalyango et al., 2012). CHWs with flexible occupations have higher retention because they are able to balance their routine duties as CHWs and personal commitment. This was similar to a study carried out by Gisore et al. (2013) who found enhancing flexibility and minimizing of hours for CHW work to create an incentive for retention while excessive work demands and time constraints reduce retention levels.
5.2.2 Incentives Influencing Retention of CHWs

Provision of financial incentives was associated with retention a CHW in service (p=0.001). This was similar to a study by Ahmed (2008) in which financial incentives were found to be an incentive for becoming a CHW. A previous study by Darmstadt et al., (2008) reported that when financial elements (like financial stipends and allowances) lack in CHWs’ job design, retention rate is considerably reduced. This explains why change in financial incentives creates disincentives for retention. The study found that during selection of CHWs, some recruitment teams promise to provide rewards to the recruits and first priority when new opportunities emerge such as community mobilization jobs. Where such promises are not fulfilled, it led to demotivation hence triggering dropout.

Perseverance and patience in volunteering is perceived as key in landing these new opportunities. When these opportunities were not forthcoming or where financial incentives were promised but not provided, it became a disincentive resulting to drop out. Similar to a study conducted by You et al. (2010), preferential treatment was shown to enhance CHWs retention. CHWs desire to become part of the formal hierarchy of the Ministry of Health and to have prospects for career advancement, recognition and appreciation as a way of being rewarded for their selfless efforts. The study showed that CHWs were not well recognized as part of formal health systems when it comes to provision of benefits such as medical cover for health risks, being given priority in service delivery and free medical care to their disgruntlement hence creating a disincentive for remaining in the volunteer programme in the long run.
Provision of means of transport was not associated with retention of CHWs in service (p>0.05). This finding was not similar to a study finding by AMREF (2007) where means of transport was associated with retention of CHWs. This difference in finding could be due to difference in study context. AMREF study was carried out in their own supported community strategy program while this study covered programs supported by many partners as well as government. These programs have different features in terms of program design and implementation. Some partners provide bicycles to the CHWs while others don’t provide these incentives especially those supported by government which difference in context and operation of the programmes. Providing enough bicycles as an incentive has the potential of averting the challenge of covering vast distance. This would save time spent in community work hence enabling a good balance between personal commitments and community work.

Similar to findings of a MOH evaluation report carried out in 2010, the study revealed that supporting CHWs in community units with vast geographical coverage and hills with transportation means made it easier for CHWs to cover long distances involved in visiting allocated households and be able to attend to other personal commitments. CHWs were promised bicycles to aid their movement within their service delivery jurisdiction. Some of the CHWs had not yet received any bicycle; where they were provided; they were either shared and or required repairs which created discouragement. This was perceived by the CHWs as lack of adequate commitment by the government to make the community health strategy a success. Provision of reliable means of transport was seen as beneficial to facilitate execution of their duties.
Although provision of a certificate of training was not associated with retention of CHWs (p>0.05), CHWs perceive provision of a certificate as an opportunity for a formal recognition and potential for employment (Darmstadt et al., 2008). Lack of a clear formal policy in issuance of certificates of training had resulted in partial provision of the certificates which adversely affected the morale of those who were not issued with them; they feel unappreciated and less important.

In relation to expectation for provision of health updates, the study findings were similar with Arole (2007) in which CHWs expected to acquire valuable health related skills and knowledge. Provision of health updates was perceived to be important for a CHW’s family and community health living. This was more important to women who comprised majority of the volunteers in community health strategy particularly due to the revelation that women put more value in health families and children. Community service was perceived as a golden opportunity for acquiring required skills and knowledge for improving the health status of their families. This created a significant incentive for retention in the community health strategy programmes.

5.2.3 Human resource management practices influencing retention of CHWs

In relation to self-help groups, belonging to a self-help group was associated with retention of CHWs (p=0.001). CHWs who were members of a self-help group were more retained than those did not belong to any self-help group. This was similar to other past studies (Prasad and Muraleedharan, 2007; Shin, 2007) which identified belonging to a CHW association that engages in an income generating activity to enhance cohesion among the group members. Similar to findings by (Prasad and Muraleedharan, 2007; Syed et al., 2010), existence of CHW-specific associations was
shown to provide a constructive approach to achieve incentives through revenue-generating activities. Belonging to a self-help group was reported to promote solidarity among CHWs. This engagement approach creates mutual benefits for both the community health strategy programmes and CHWs which enhances programme sustainability. The mutual benefits include financial stability, socio-belonging, team spirit among others.

Provision of rewards was associated with retention of CHWs (p>0.05). This finding was explained by the fact that rewards were not provided to CHWs in some of the community units in the study area which reduced the ability of the model to discriminate between the two categories. This study finding was not similar to Syed et al. (2010) findings which reported that rewarding good performance and meeting of set targets to enhance performance of CHWs reinforce the motivation for volunteering for a longer period of time. This was also reported in a study done by Gisore et al., (2013) in which provision of non-financial incentives was shown to be important in retaining CHWs. The study found that there was no formal policy for rewarding CHWs resulting into inequity in administration of rewards and incentives across community units.

Selection of CHWs by community has been linked to securing community trust and goodwill towards the CHWs which inspires them to remain in the programme. This was in line with previous studies (Lehmann and Sanders, 2007; Teralynn et al., 2014) which suggested that community should be involved in selection of CHWs to enhance their retention. Community support (Yeboah-Antwi et al., 2010; Kawakatsu et al., 2012) and social prestige (Amare, 2009) have been cited as important community factors associated with CHW retention. Further studies needs to take into account
these community variables to provide deeper insight on their role in enhancing retention. Similar with findings from other studies (Shin, 2007; Ahmed, 2008), the study found inclusive and participatory community-centered approach of selecting CHWs to enhance community acceptance, recognition and creates an incentive that motivated CHWs to volunteer.

In regards to duration of training, longer training period helped improve knowledge retention and skill acquisition due to increased contact period with trainers (Gisore et al., 2013). The study identified gaps between what CHWs were expected to do and the knowledge that they have for executing their duties and responsibilities. There were variations in training duration depending on type of partners and non-governmental organizations (NGOs) supporting the community units (Yoshito et al., 2015). An initial training period of less than 15 days was found to be insufficient to cover modules required to adequately equip CHWs for successful execution of their duties (Teralynn et al., 2014). Lack of comprehensive training and training module coverage created competency gaps which hamper performance of the CHWs. Low performance due to skill and knowledge was linked to increasing drop out among the CHWs as a result of demotivation.

CHWs who were appraised on their performance had higher retention than those who were not appraised. This was similar to a study by Syed et al. (2010) who indicated the need to appraise staff and link their performance with incentives. There was lack of harmony in carrying out appraisals among different players in the health system. Lack of formalized systems has been shown to result to inequality in distribution of incentives. This was also evident in a study by Yoshito et al. (2015) who reported that
there was no standard governmental monitoring and evaluation tool to measure a CHW’s performance except for their monthly report

Provision of identifications such as badges, T-shirt and uniforms created an incentive for remaining in the volunteer programme (Gisore et al., 2013). Yoshito et al. (2015) reported that some CHWs are given non-monetary incentives such as identification like T-shirts, depending on the partners and nongovernmental organizations (NGOs) supporting the MOH. Providing identification materials with identifications such as logos facilitated entry into households with less resistance and enhances recognition and respect from their communities and formal health system. Lack of ID materials is reported to discourage CHWs as they felt unrecognized in the health system in which they served.

5.2.4 Health System Structural Factors influencing Retention of CHWs

Evaluation of community strategy by the Ministry of Health (2010) showed that the community based health information management system was not working very effectively due to lack of data collection tools and referral forms at the community level. The study revealed that reporting tools were inadequate making monthly reporting a challenge which created a demotivation among CHWs. CHWs were forced to photocopy reporting tools at their own expense resulting to demotivation and discouragement as they perceive their work to be unappreciated.

In regards availability of referral forms, lack of adequate referral forms forced CHWs to escort clients to the facilities or even use word of mouth to their de-motivation. This was linked to increased workload, time and income loss as the CHWs are forced to leave their subsistence commitment to attend to clients without any reimbursement
for the associated costs. The MOH evaluation report (2010) found inadequacies in referral tools to be a fundamental challenge to the success of community based health information system.

Similar to study findings by Gisore et al. (2013), essential commodities such as first aid kits and minor ailment drugs are important in helping meet community expectation in dealing with minor and manageable ailments (Wanda and Kate, 2012). Medical kits empower CHWs to provide basic health care such as water treatment, deworming and first aid services which inspires their continued service in the programme owing to the positive health outcomes associated with their work (Yoshito et al., 2015). The study found out that medical supplies were not frequently made available to CHWs. Resultantly, CHWs were unable to meet community expectations making them lose their expected respect, trust and recognition linked to positive contribution in managing minor ailments in the community without necessarily making referrals to the health facilities which created de-motivation and a disincentive for the job.

5.3 Conclusions

5.3.1 Socio-Demographic Characteristics Predicting Retention of CHWs

The results showed that none of the socio-demographic characteristics was a predictor of CHW retention (p>0.05). The null hypothesis that socio-demographic characteristics do not predict retention of CHWs in service failed to be rejected.
5.3.2 Incentives Predicting Retention of CHWs

Results showed that provision of financial incentives (p=0.000) and provision of health updates (p=0.000) were predictors of CHW retention. The null hypothesis that incentives do not predict retention of CHWs in service was rejected.

5.3.3 Human Resource Management Practices Predicting Retention of CHWs

The results showed that belonging to a self-help group was a predictor of CHW retention (p=0.004). The null hypothesis that human resource management practices do not predict retention of CHWs in service was rejected.

5.3.4 Health System Structural Factors predicting Retention of CHW

The results showed that availability of reporting tools (p=0.000) and essential medical products (p=0.000) were predictors of CHW retention. The null hypothesis that community health system structural factors do not predict retention of CHWs in service was rejected.

5.3.5 Implication of the Study Findings

The implication of this study is that policy reforms need to incorporate guidelines for providing sustainable financial incentives, improved health-related knowledge acquisition and dissemination and use of self-help group for income generating activities to enhance CHWs retention in service. Use of self-help group and provision of regular health information have emerged as non-financial incentives which can be used to attract and retain CHWs in service. These will be more sustainable retention options compared to provision of financial incentives.
5.4 Recommendations

1. The national government in consultation with other key stakeholders such as county government and partners to institutionalize and harmonize the use of financial incentives to avoid irregularity and non-uniformity which creates demotivation among CHWs.

2. The county government and partners to re-design implementation of community strategy to provide regular health updates and information to CHWs through refresher trainings and key information dissemination to sustain their interest to continue working as volunteers in the community strategy programme.

3. County governments and partners to create mechanisms for livelihood support to CHWs such as establishing self-help groups as sustainability measure for the community health strategy.

4. County governments and partners to provide CHWs with adequate reporting tools and referral forms as a mechanism of facilitating regular reporting and integration of level-1 services with other tiers of health service delivery.

5. County governments and partners to provide CHWs with essential health products (Medical Kit) to enable them attend to minor ailments within the community as a result of which they will earn respect of community members to act as a motivation for retention of CHWs.
5.5 Recommendations for Further Research

Based on the study findings and conclusions, there is need for undertaking the following studies:

1. A comparative study to determine predictors of retention of CHWs in rural and urban settings as variations in contexts could influence retention rate.
2. An interventional study to determine the role of non-financial incentives on retention of CHWs.
REFERENCES


APPENDICES

Appendix 1: Informed Consent Form

Researchers’ Statement

Good morning/afternoon, my name is Peter Kithuka. I am a PhD student at Kenyatta University. Today I am here to carry out a study on predictors of CHW retention in Makueni County. This form will give you information you need, so that you can make a decision on whether to participate or not to in the study. There are no wrong or right answers. You will be given time to consider if you would like to be in the study. Please read the form well and ask where you don’t understand. Please be honest and truthful in answering the questions. I assure you that the information you give will be totally confidential and you will not be required to identify yourself by name.

Procedure:

You will be interviewed using a self-administered questionnaire (You will be assisted in case you are unable to read or write). The interview will last for about half an hour and participants will be required to give answers to all the questions. Participants will have the opportunity to make suggestions and give information on retention among CHWs in Makueni County.

Risks and benefits

People in the county could learn of your involvement in the study. To protect you from this risk, all information you will give us will be kept confidential within our research team. All the data will be stored in a password protected computer.
There is no financial compensation or other personal benefits from participating in the study. Your participation and/or answers to the questions may provide useful insights into improving community strategy in Kenya.

Confidentiality and voluntary participation

No names will be used on any of the reports from the study. All the respondents will be given different identification numbers and the information relating to each participant will be strictly confidential, available only to the study team. Notes and any other recordings done will be destroyed once summary is prepared. Your participation is voluntary, and you may refuse to answer any question or stop the interview at any time without suffering any consequences.

Instructions:

When you sign, it shows that you have agreed to participate in the study. If you do not understand any part of the information that has been read to you/you have read, be sure to ask questions. Do not sign until you have understood all that is expected or required.

I wish to take part in the study entitled: Predictors of community health workers retention in Makueni County, Kenya.

I understand that I may at any time during the study withdraw my consent without any consequences. I have understood the information given in this sheet and I give my consent to be interviewed.

Respondent number ……………………… Signature…………………………
Date…………………………………………
Name of the researcher: Peter Munyao Kithuka Signature…………………………
Date………………………………………
If you require more information, please contact:

1. **The Chairman**
   
   Ethical Review Committee, Kenyatta University
   
   P.O BOX 43844-00100, Nairobi
   
   Tel: +254-020-8710901-19
   
   Email: chairman.kuerc@ku.ac.ke

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   P.O BOX 43844-00100, Nairobi
   
   Tel: +254-020-8710901-19
   
   Email: jkorir@yahoo.com
## Appendix 2: Questionnaire for CHWs

<table>
<thead>
<tr>
<th>No</th>
<th>Cluster Identification</th>
<th>Coding Categories</th>
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**PART A: BACKGROUND INFORMATION**

This section will ask you questions about yourself. Read each question carefully. **Tick the appropriate response or fill in where necessary**

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<td>/ /</td>
<td>day/month/year</td>
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<td>DON’T KNOW…………………………………998</td>
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<td>Female…………………… 2</td>
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<th>What is your Marital Status?</th>
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<td>Single………………………… 1</td>
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<tr>
<td></td>
<td>Married……………………… 2</td>
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<td></td>
<td>Others(divorced/separated/widowed)……………3</td>
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<tr>
<th></th>
<th>What is your highest level of Education?</th>
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<td>No formal education……………………..1</td>
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<td></td>
<td>Primary Not Completed…………………… 2</td>
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<td></td>
<td>Primary Completed………………………3</td>
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<td>Secondary Not Completed…………………4</td>
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<td></td>
<td>Secondary Completed …………………..5</td>
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<td></td>
<td>Tertiary level………………………..6</td>
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5  What is your religion?  
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<td>Christian</td>
<td></td>
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<td>Muslim</td>
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</tr>
<tr>
<td>Other (Specify)</td>
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6  What is your occupation?  
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<th>3</th>
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<tr>
<td>Casual labor/wage earner</td>
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<td>Business</td>
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<tr>
<td>Farmer</td>
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<tr>
<td>Other (Specify)</td>
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</table>

PART B: WHETHER EXPECTATIONS HAVE BEEN MET OR NOT

Please indicate whether your expectations as a CHW were met by ticking appropriately against each of the items listed.

<table>
<thead>
<tr>
<th>7</th>
<th>Expectations</th>
<th>Met</th>
<th>Not Met</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(a) Financial incentives ( Monthly Allowance)</td>
<td></td>
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<td></td>
<td>(b) Preferential Treatment ( Like not queuing, getting free healthcare)</td>
<td></td>
<td></td>
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<td></td>
<td>(c) Provision of Medical Kits ( First Aid Kit and medical supplies)</td>
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<td></td>
<td>(d) Provision of Means of Transport ( Bicycle)</td>
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<td></td>
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<td></td>
<td>(e) Provision of certificates after initial training</td>
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<td></td>
<td>(f) Provision of health updates</td>
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## PART C: HUMAN RESOURCES MANAGEMENT PRACTICES

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
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<th>Option 2</th>
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<td>Are you rewarded for meeting your monthly targets?</td>
<td>Yes…………………………………………………1</td>
<td>No……………………………………………………2</td>
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<tr>
<td>9</td>
<td>Did your community choose you to serve them as a CHW?</td>
<td>Yes…………………………………………………1</td>
<td>No……………………………………………………2</td>
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<tr>
<td>10</td>
<td>For how many days did your first training as a CHW last?</td>
<td>5 Days………………………………………………1</td>
<td>10 Days………………………………………………2</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>15 Days………………………………………………3</td>
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<tr>
<td>11</td>
<td>Does your supervisor appraise you on your performance?</td>
<td>Yes…………………………………………………1</td>
<td>No……………………………………………………2</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Yes</td>
<td>No</td>
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<td>-----------------------------</td>
</tr>
<tr>
<td>12</td>
<td>Are you a member of a self-help group?</td>
<td>Yes……………………………1</td>
<td>No…………………………….2</td>
</tr>
<tr>
<td>13</td>
<td>Have you been provided with a work identification card?</td>
<td>Yes……………………………1</td>
<td>No…………………………….2</td>
</tr>
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**PART D: COMMUNITY HEALTH SYSTEMS CHARACTERISTICS**

<table>
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<tr>
<th></th>
<th>Question</th>
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<tbody>
<tr>
<td>14</td>
<td>Are you provided with monthly reporting tools?</td>
<td>Yes……………………………1</td>
<td>No…………………………….2</td>
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<td>No…………………………….2</td>
</tr>
<tr>
<td>16</td>
<td>Are you provided with medical supplies?</td>
<td>Yes……………………………1</td>
<td>No…………………………….2</td>
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</table>

**THANK YOU FOR YOUR TIME**
Appendix 3: Key Informant Interview Guide

Identification of Interviewee:

Position of the Interviewee...........................................................................................................
Organization represented by the respondent..............................................................................
Sub-County.....................................................................................................................................

Theme 1: Selection of CHWs

Probe to gain understanding of the process of selecting tools and to establish whether there are exceptions to the set criteria. Probe to get key informant views as to the effect of not adhering to the set criteria on retention of CHWs.

- What are the requirements for one to be selected as a volunteer CHW?
- What are the exceptions to the requirements stated above?

Theme 2: Role of incentives on retention of CHWs

Probe to understand financial and non-financial incentives provided to CHWs. Seek to understand whether there were promises made to CHWs at the time of recruitment and find out whether such have been provided.

- What incentives are provided to CHWs?
- What is the effect of incentives on the retention of CHWs?

Theme 3: Supervision of CHWs

Probe to establish the existing supervision mechanisms and how they affect motivation and retention of CHWs.
Probe to understand mechanisms in place to reinforce positive behaviour of the CHWs especially when they achieve set targets.

- Who supervises CHWS?
- What are the performance appraisal mechanisms for CHWs?
- How are CHWs rewarded?

**Theme 4: Reporting Mechanisms**

Probe to understand the reporting process, tools used and how such tools are supplied to the CHWs.

- What reporting tools are CHWs expected to use and how regularly are such tools supplied to CHWs?
- How often are CHWs expected to submit reports and are there sanctions for not reporting?

**Theme 5: Availability of Health Products**

Probe to understand whether CHWs are provided with a medical kit and to know the contents of the kit. Seek to establish whether the kit or health products necessary for the performance of CHWs are provided on a regular basis and to understand whether lack of essential supplies has an effect on retention of CHWs.

- What are the essential health products expected to be supplied to CHWs?
- How does availability of essential commodities affect retention of a CHW?
Appendix 4: Focus Group Discussion Guide

Theme 1: Selection and Training of CHWs

Probe to understand how CHWs were selected and to establish whether there were differences in the initial training duration and content.

- What factors are considered when selecting you as a CHW?
- What were you trained on at the time of recruitment?
- What causes attrition of CHWs?

Theme 2: Provision of incentives to CHWs

Probe to understand types of incentives provided to CHWs, and the extent to which expectations for such incentives have been met?

- What are the incentives provided to CHWs?
- Which are the preferred incentives?

Theme 3: Supervision and Management of CHWs

Probe to understand the experience of CHWs performance appraisal, provision of ID, and being supported to join a self-help livelihood improvement group.

- What are the appraisal mechanisms in place for CHWs?
- What arrangements have been put in place to make CHWs feel part of the formal health system?
Theme 4: Status of community health system characteristics

Probe to understand which working tools CHWs require and whether such tools are provided regularly

- Which reports are CHWs expected to submit and how often are such reports to be submitted?
- What initiatives are in place to encourage regular reporting by CHWS?
Appendix 5: Research Permit from NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

NACOSTI/P/14/3576/2056

Peter Munyao Kithuka
Kenyatta University
P.O.Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Predictors of Community Health Workers Retention in Makueni County, Kenya,” I am pleased to inform you that you have been authorized to undertake research in Makueni County for a period ending 31st July, 2014.

You are advised to report to the County Commissioner and the County Director of Education, Makueni County 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.

Said Hussein
For: Secretary/CEO

Copy to:

The County Commissioner
The County Director of Education
Makueni County.
Appendix 6: Ethical Clearance from KU

KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

Email: chairman.kuerc@kua.ac.ke
secretary.kuerc@kua.ac.ke
ercu2008@gmail.com
Website: www.ku.ac.ke

P. O. Box 43844 - 00100 Nairobi
Tel: 8710901/12
Fax: 8711124/8711579

Our Ref: KU/E/COMM/51/546

Date: 9th July, 2014

Peter Muryao,
Kenyatta University,
P.O Box 43844, Nairobi

KE APPLICATION NUMBER PKU/225/1 201. 
"Predictors community health workers retention in Makueni County, Kenya"

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic "Predictors community health workers retention in Makueni County, Kenya" - Version 1 received on 27th May, 2014.

2. APPLICANT

Peter Muryao, Department of Health Management & Informatics

3. STUDY SITE

Makueni, Kenya

4. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines AND APPROVED that the research may proceed for a period of ONE year from 9th July, 2014.

5. ADVICE/CONDITIONS

i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
ii. Serious and unexpected adverse events related to the conduct of the study are reported to this board immediately they occur.
iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above.
If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.

PROF. NICHOLAS K. GIESOY
CHAIRMAN ETHICS REVIEW COMMITTEE

I accept the advice given and will fulfill the conditions therein.

Signature: ____________________________ Dated this day of __________________, 2014.

cc. Vice-Chancellor
Director: Institute for Research Science and Technology
Appendix 7: Map of the Study Area

Source: Source: http://maps.google.co.ke/maps
Appendix 8: List of link health facilities

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<th>Actual No. of CHWs interviewed</th>
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