PERFORMANCE AMONG COMMUNITY HEALTH WORKERS IN NJIRU DISTRICT, NAIROBI COUNTY, KENYA

BY

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REG NO.P57/PT/10529/08

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF PUBLIC HEALTH IN THE SCHOOL OF PUBLIC HEALTH OF KENYATTA UNIVERSITY

JUNE, 2014

DECLARATION

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

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SUPERVISORS' DECLARATION

We confirm that the work reported in this thesis was carried out by the student under our supervision and has been submitted with our approval as the university Supervisors.

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DEDICATION

To my husband Philip, my children Linda, Patience, Ian and Raymond for your enormous support, patience, encouragement ,understanding, and unconditional love.

ACKNOWLEDGEMENT

I wish to acknowledge all those people and institutions that offered assistance and contributions in making this study a success. I am particularly indebted to my supervisors, Dr John Paul Oyore, Department of Community Health and Dr George Ochieng Otieno, Department of Health Management and Informatics for their valuable support, encouragement, wisdom and professional guidance.

Special thanks to the staff of the Department of Community health at Kenyatta University for providing a conducive environment during my study.

I wish to thank the District Health Management Team and the Provincial Administration in Njiru District for their support and teamwork in the study. Special thanks to the community health workers in Njiru Distict and the community members for their diligent support during the study.

My heartfelt thanks to my family members and friends whose effort and assistance made the study a success, I remain grateful and may God bless you greatly.

I will forever remain grateful and thankful to God for his perfect will in my life during the entire study period.

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ABREVIATIONS AND ACRONYMS

APHIA	Aids Population Health Integrated Activities
AIDS	Acquired Immune Deficiency Syndrome
AMREF	African Medical Research Foundation
CBS	Central Bureau of Statistics
CHC	Community Health Committees
CHEWs	Community Health Extension Workers
CHS	Community Health Strategy
CHWs	Community Health Workers
CORPS	Community Own Resource Persons
DHIS	District Health Information Software
DHMT	District Health Management Team
DMOH	District Medical Officer of Health
DPHO	District Public Health Officer
FGD	Focus Group Discussion
HDD	Housing Development Department
HFA	Health For All
HIV	Human Immuno Deficiency Virus
HRSA	Health Resource and Service Admininstration
IPT	Intermittent Preventive Treatment
KDHS	Kenya Demographic Health Survey
KEPH	Kenya Essential Package for Health
KII	Key Informant Interview
MDGs	Millenium Development Goals
MOH	Medical Officer of Health
MOPHS	Ministry of Public Health and Sanitation

NHSSP	National health sector strategic plan
PHC	Primary Health Care
SAPS	Structural Adjustment Programmes
NGOs	Non Governmental Organizations
SPSS	Statistical Package for Social Science
UNICEF	United Nations Children's Fund
VHC	Village Health Worker
WHO	World Health Organisation

ABSTRACT

The 2006 World Health Organization report recognized shortages of professional health workers as one of the key ingredients in the growing crisis of providing health services, particularly in low income countries (Mumbo *et al.*, 2013). In mitigation the Alma-Ata declaration of 1978 promoted wider use of Community Health workers to provide selected interventions and promote health behaviours at the community level. In Kenya, CHWs workforce was adopted into the NHSSP II, 2010-12 as a component of cost effective strategies in addressing the health care needs of underserved communities. MOPHS and implementing partners have therefore been implementing the Community Strategy (CS) for effective delivery of level 1 health services to the community as part of the Kenya essential package for health since 2006. However both the performance of CHWs as change agents and the feasibility of implementing and sustaining large-scale CHW programs have been called into question.The study aimed at describing the determinants influencing performance of CHWs in Njiru district through a descriptive cross-sectional survey.Both quantitative and qualitative data collection methods were used. Systematic sampling method was used to identify the respondents. Quantitative data was collected from 225 CHWs while qualitative data was collected from DHMT Members,public health officers and CHEWs. Data was presented using tables, graphs and cross tabulation while inferential statistics were computed using chi square and odds ratio. Thematic analysis was done on qualitative data. Findings showed that performance of CHWs was low (34.7%). Gender was statistically significant in relation to the CHW performance ($\chi 2=7.619$, df=1, p=0.006) and CHWs who earned between Ksh3501-4500 were associated with non-performance (Unadjusted OR:4.**775**, 95% CI 1.038-21 P<0.045). The period of community strategy training ($\chi 2=6.502$, df=2, p=0.039),application of feedback information ($\chi 2=12.429$, df=3, p=0.006) significantly affected CHWs performance. Communication (P<0.001) was statistically significant with performance increasing with number of *barazas* held. Male respondents were 96% less likely to be associated with performance compared with female CHWs (AOR 0.968, 95% CI 0.114-1.822).CHWs who attended training for one week and three weeks respectively were two times more likely to be non performers as CHWs in the delivery of level one health services (AOR 2.21, 95% CI 0.030-4.384, P=0.047) and (AOR 2.49, 95% CI 0.174-4.804, P=0.035) than respondents who attended training for four weeks and more. The use of feedback information was statistically significant and when adjusted for no feedback report, the odds of using the feedback information report to address gaps was highly associated with performance (AOR -1.099, 95%CI -1.997- 0.201, P<0.016). From this study the performances of community health workers in Njiru district Kenya in the delivery of level one health service was below average. Various demographic, health systems and community factors are central in the Performance of CHWs in the delivery of level one services. From this study the implementation and realization of the key CHS targets in Peri-urban setting is challenging therefore stakeholders need to develop a clear contextualized CHWs guideline tailored for Peri- urban settings. The findings from this study will be useful to policy makers, programme officers and communities in focusing interventions aimed at improving community strategy and programs, ultimately improving community high health impacts indicators.

CHAPTER ONE: INTRODUCTION

1.1: Background to the study

The use of community members to render certain basic health services to their communities is a concept that is scaling up across the globe. However, there have been innumerable experiences throughout the world on both large and small scale community-based initiatives. (WHO, 2007). The World health report 2006 titled working together for health; recognizes shortage of professional health workers as one of the key ingredients in the growing human resource crisis, particularly in low-income countries (WHO, 2006). The report advocates for a review and subsequent delegation of tasks to the "lowest" category of community health workers (CHWs) who can perform the tasks successfully (WHO 2006). It is in this context that the concept of using CHWs has been adopted (WHO, 2007). The community health strategy establishes a level one health care unit (community unit) to serve a local population of 5,000 people. Each community unit has a cadre of well-trained CHWs who each provide services to 20 households (Mars group Kenya, 2010). The CHW is identified by the community as Community's Own Resource Persons(CORPS) and trained by the Community Health Extension Workers (CHEWs). These CHWs are supported by the CHEWs who are based at level 2 (Dispensaries/clinics) and level 3 (Health centres, maternities, nursing homes) (MOH, 2006).

Many countries in Sub-Saharan Africa face the challenge of organizing health service delivery in a manner that provides quality and accessible health care to their populations

against a background of economic recession and limited resources. In response to these challenges, different governments have been implementing health sector reforms. Kenya, Uganda, Ghana, and South Africa have implemented national programmes for community health workers (WHO, 2010).

1.1.1: Community strategy in Kenya

World health assembly of 1974 noted the striking disparities in health and health services between countries and decided to explore possibilities for more effective action to bring appropriate equity in health services. This culminated to Alma Ata conference of 1978 (WHO 1987). The Alma Ata conference of 1978 was on primary health care. The concept of primary health care implies that all the components of the basic essentials package of health care are made available to the community, with their active involvement and with technical support and resources provided by health care workers and other sectors (Ibid). World health assembly specified that the main social target of governments and World Health Organization in the coming decades should be the attainment of health by all citizens of the world by the year 2000 ("Health for all") (HFA). HFA is a level of health that would permit people to live a socially and economically productive life (Ibid). Kenya is a signatory to the Alma-Ata Declaration of 1978 for achieving "health for all by the year 2000". One way of achieving Alma ata declaration, is through the Community Health Strategy. Several efforts have been made to achieve these Alma ata declarations in Kenya through efficient and effective health management systems and reforms. Despite these efforts, there has not been a breakthrough in improving the situation of households entrapped in the vicious cycle of poverty and ill health (Opiyo R and Njoroge P, 2009).

The situation was further complicated by the introduction of structural Adjustment Programmes (SAPs) which invariably hit the poor hardest. The result has been been deteriorating trends in health status throughout the country with unacceptable disparities between and within provinces (MOH, 2007; MOPHS, 2008). The worsening health status indicators includes but not limited to infant mortality rates, under-five mortality rates, maternal mortality rates, malnutrition rates which have continued to rise (MOH, 2007; MOPHS, 2008). The efforts made in Kenya under the First Health Sector Plan (NHSSP-I) did not contribute much towards improving Kenya's health status (MOH 1999).

In 2005, the Second Health Sector Strategic Plan which ran until 2010 was developed (NHSSP-II). The goal of the NHSSP II was to reduce inequalities in health care services and reverse the downward trend in national health indicators, hence the theme: "Reversing the downward trends in the national health indicators" (NHSSP-II 2005-2010). Key among the stated purposes of NHSSP II was to strengthen CHWs Performance through the implementation of the Kenya Essential Package for Health (KEPH) through a number of strategies, one of them is the community strategy (Opiyo R, & Njoroge P, 2009).

The Community Health Strategy service empowers the household to take charge of improving their own health since household is at the foundation of affordable, equitable and effective health care (MOH, 2006). According to the KEPH, Norms and Standards for health service delivery, level 1 health services should include the basic community health services of promotive, preventive and simple curative health care. They are

designed to benefit a local population of 5,000 people with the assistance of 50 Community Health Workers (CHWs). Each CHW is identified by the community and trained within the community to provide level 1 service to 20 households (HENNET, 2010). However a key issue of debate concerns the question of what functions individual CHWs can effectively perform, considering their limited education background; social, political, economic, cultural dynamics of society; health needs of the community and size and geographical spread of the population to be served (WHO, 2006). According to world health organization report- 2007, there is little scientific evidence as to the optimal number of functions and tasks a CHW can perform. In addition no one person can perform all the activities laid out in the vision of Alma Ata Declaration to improve daily life and bring health care to all people (WHO, 2007).

The overall goal of the Community Strategy is to enhance community access to health care in order to improve individual productivity and thus reduce poverty, hunger, child and maternal deaths, as well as improve education performance. CHWs are particularly important in areas where there is inadequate accessibility of facility-based health services (MOH, 2006). For example, CHWs can increase access, use of health services and have played a role in primary health care, tuberculosis, immunization and family planning programmes (Rahman *et al*., 2010). CHWs have promoted the implementation of packages of interventions to reduce neonatal mortality such as improving antenatal visits, promotion of immediate and exclusive breastfeeding, appropriate care of the skin and umbilical stump ,recognition and treatment with antibiotics of sick newborns (Rahman *et al*., 2010).

Services provided by CHWS are expected to be more appropriate to the health needs of the local populations. However the use, efficiency, performance and reliability of CHW programmes is a global debate (WHO,2007). Therefore, it is timely to assess the evidence that such health workers can perform the necessary tasks and describe the determinants influencing their performance at level one.

1.2: Problem statement

Over the past 2 years, Njiru District has been implementing the community health strategy however performance of CHWs is lower (55%) compared to the general Nairobi rates (64%),(MOH 2011). Morbidity burden in the District remain high; flu 23%, diarrhea 20%, tuberculosis 12%, respiratory diseases 8%, unskilled deliveries 26% and HIV prevalence 10%. This is in spite of the fact that it has formed 33 community units out of the proposed 60 (NCMO 2013). The effectiveness and efficiency of level one health services were identified as a major contributing factor to the health problems in the district (DHMT, 2011). According to 2009 census Njiru District had a population of 343,382 people, majority (70%) living in the slum areas ,with poor health indicators.The population was being served by only 4 level 2 public health facilities (DHMT,2011).

Since its adoption, the roll out of community based health services has taken different dimension, acceptance and accessibility at different communities (UNICEF, 2010). Furthermore, there reigns confusion about the sustainability of level one workforce, services and resources (Friedman, 2004). There is less comprehensive research about the CHW workforce (HRSA, 2007). The limited research available has focused on level of

education, residences and source of income, accessibility, availability of drugs, norms and beliefs. There are also few other studies on community based health care financing, scope covered by a CHW, governance at level one; supervision of operations at community level and monitoring and evaluation (Ndedda, 2012). In addition social cultural issues such as recognition of community health services and service provider, cultural diversity/dynamics in urban settings, perception of level one health services and client-provider relation have not been fully explored (Haines and Lagarde, 2007). On the other hand, the community's role in the implementation of the strategy is also not clear (UNICEF, 2010).

As the district plans to increase the number of CHWs, there is a need to understand the determinants that influence the performance of CHWs in order to maximize on the resources that are spent to improve the health outcomes of the community. The study therefore investigated the determinants of the Performance of CHW in Njiru District.

1.3: Justification

The Alma-Ata Declaration of 1978 is a major milestone of the twentieth century in the field of public health, and it identified primary health care (PHC) as the key to the attainment of the goal of "Health for All" (HFA). Primary health care is essential health care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation (Bryant 2002). PHC aims at bringing health care as close as possible to where people live and work, and can be attained through a fuller and better

use of the community resources person. Community health strategy is the Kenyan Ministry of Health model for primary health care reform (MOH, 2006). The strategy aims at improving health indicators by implementing some very critical interventions at the community level (Oyore,2010)

The implementation of the CHWs concept in Kenya is marked by unanswered questions of long term sustainability and program effectiveness. Despite the vast experience with CHWs, relatively little scientific evidence is available to answer basic questions notably the determinants influencing the performance of CHW. There are few studies that have investigated the linkage between demographic, cultural, health system factors in relation to performance of CHW.

Therefore there was need to conduct a research on determinants influencing the performance of community health workers in Njiru District Nairobi county Kenya. The findings will support decision making on CHWs programs. In line with the National Vision 2030 the government intends to scale up the use of CHWs in the country, and also work towards improving the health service delivery at level one (MOP&ND,2007). In view of the above information, it was important to establish the determinants that influence the performance of CHWs and other confounding factors hindering the goal of empowering communities in taking charge of their own health (Oyore, 2010).

Njiru District targets to establish 61 community units by the end of 2013 against the current 33 community units. The findings will improve the overall goal of the community strategy as a tool of enhancing community access to health care in order to improve

productivity and thus reduce child and maternal deaths, as well as improve education performance across all stages of the life cycle.

1.4: Research Questions

1. What are the demographic characteristics influencing the performance of CHWs in Njiru District?

2. What is the level of performance of CHWs in Njiru District?

3. What are the community factors associated with the performance of CHWs in Njiru District?

4. What are the health system factors influencing performance of CHWs in Njiru District?

1.5: Hypothesis

There are no demographic factors, health system factors or community factors influencing the performance of community health workers in Njiru district

1.6: Research Objectives

1.6.1: Broad Objective

The broad objective was to identify the determinants influencing the performance of community health workers in Njiru district.

1.6.2: Specific Objectives

i. To determine the demographic characteristics which influence performance of CHWs in Njiru District?
ii. To determine the level of performance of CHWs in Njiru District.
iii. To identify the community factors influencing the performance of CHWs in Njiru District?
iv. To determine health system factors that influence the performance of CHWs in Njiru District?

1.7: Significance and Anticipated Output

The community-based approach is the mechanism through which households and communities strengthen their role in health and health related development by increasing their knowledge, skills and participation.

The intention is to strengthen the capacity of communities to assess, analyze, plan, implement and manage health and health-related development initiatives so that they can contribute effectively to the country's socio-economic development. In addition, the approach recognizes the pivotal role of the health system in supporting community efforts. It is through partnership between the system and the communities that improvement can be realized and sustained. The integration requires mechanisms and structures that provide the necessary linkage. Such structures would enhance and enable effective CHW programmes at the community level, as well as at the interface between level 1 and levels 2/3.

Therefore, as the demand to scale up community health service increases in Kenya there was need to conduct the study, in order to delineate provider characteristic, health systems factors and community factors that influence the performance of CHWs.

The findings of the study will act as a basis for remodeling the implementation of community strategy in the study area. It will also act as primary benefit to the community by sensitizing on community strategy in Njiru and Nairobi in general. This will create interest and will result to active participation by the community members. The DHMT Njiru will be informed on the issues influencing the implementation of the Community Strategy. This will enable it address these issues and possibly roll out the strategy to the rest of the community. The findings of this study will inform the policy makers and the other stakeholders to come up with better mechanisms on improving the community strategy. This will propel the country to move faster towards achieving high quality health care as desired by the community and achieve the goals of MDG 4 and 5. The goal of MDG 4 is to reduce child mortality rates with an objective of reducing under five mortality rates by two thirds (2/3) between the year 1990 and 2015. Whereas the goal of MDG 5 is to improve maternal health with a target of reducing maternal deaths by three quarter between the year 1990 and 2015 (UNDP 2010)

1.8: Scope and limitation

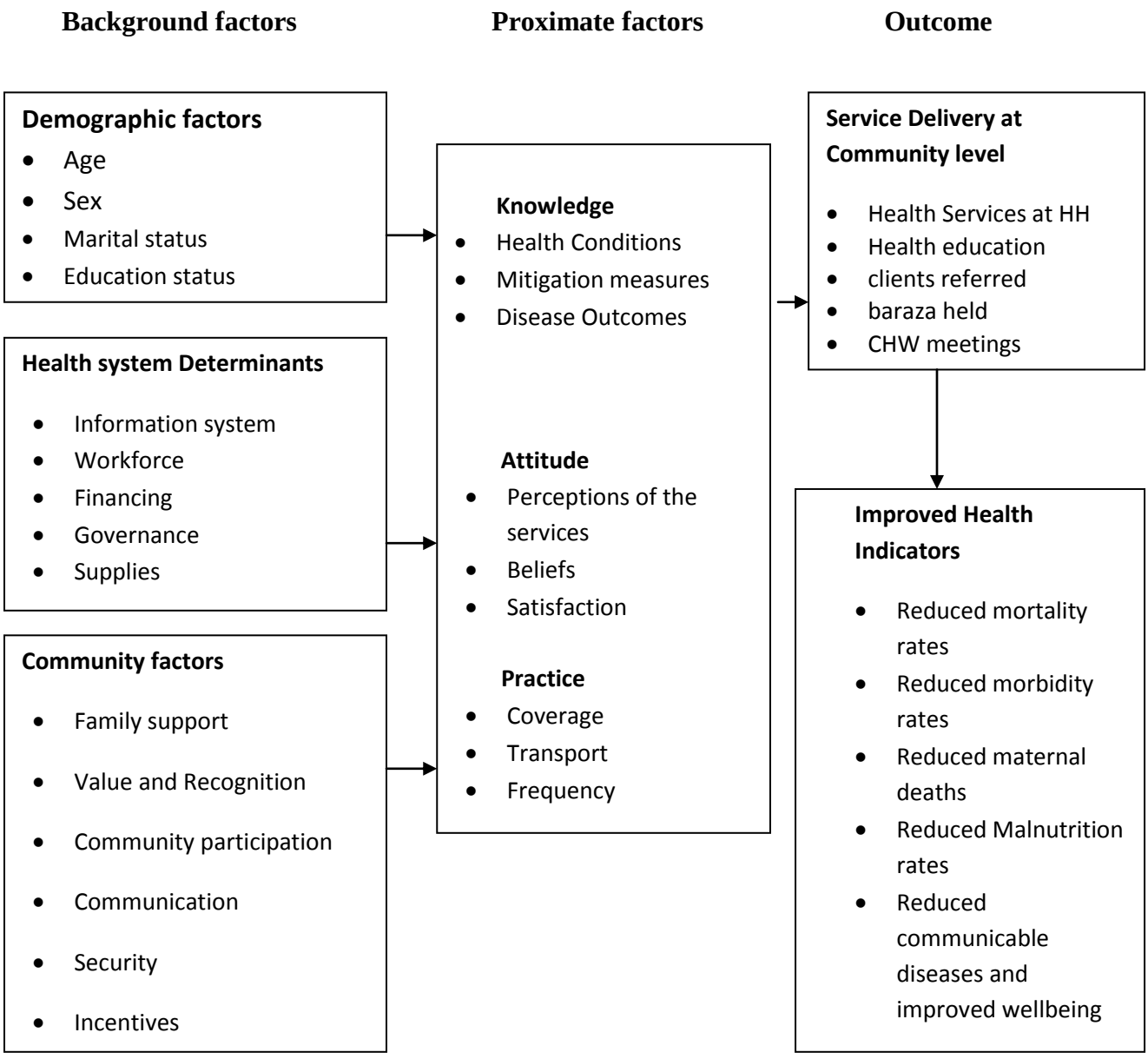
The study covered the determinants that influence the performance of community health workers at level one in Njiru District. Performance impact is a crucial benchmark for program planners and managers but needs specific definition, impact on what and impact over what period. Performance is discussed in relation to a range of impacts, including

mortality and morbidity trends. However, performance analyses show that there are missing key elements of CHW programmes that do not lend themselves to program goals, such as altruism, volunteerism, community norms, reciprocity and duty. Although the performance of CHW is influenced by a wide range of provider's demographic characteristic, socio-economic and community factors: access to health logistics and infrastructural support are critical in the performance of CHW programs, not only due to their obvious importance, but also because they are more easily quantifiable than measures such as client satisfaction or community mobilization. However, there is a shortage of data on determinants that influence the performance in CHWs programmes to confirm these views. Nairobi province in Kenya. Study limitations included: CHW having competing tasks and the vast urban community dynamics. There were some language barriers due to several ethnic communities living in the area. To counter this, an interpreter was engaged.

1.9: Conceptual Statement on Performance of CHW Programmes: Adopted from WHO, 2007 and modified from literature review:

Performance is made up of different but closely inter-linked elements: use of services, impact performance and financial performance or cost-performance (WHO 2007). Often use of services is linked to the community introduction strategy, the structures set up under a new regime or preference for formal, established health services. Use of services can be influenced and improved through training, support and supervision. Attrition is common in many programmes. Retention is affected by central concerns of governance and management, such as sources and sustainability of financing, community ownership and selection practices.

1.10 Conceptual framework



Source: Adopted from WHO (2007) and modified from literature review

CHAPTER TWO: LITERATURE REVIEW

2.0: Introduction

This chapter presents literature with regard to study objectives; demographic factors, health system factors, community factors reviewed in order to familiarize with the body of literature and identify any gaps based on which the study was conducted.

2.1 CHWs: an overview of concepts and practice

The concept of using community members to render certain basic health services to the communities from which they come from has at least 50-year history (WHO,2007). Prasad and Muraleedharan (2007) in a systematic review of concepts, practice and policy concerns on Community Health Workers, reports that the CHWs have evolved with community based health care program and have been strengthened by the PHC approach. However, the conception and practice of CHWs have varied enormously across countries, conditioned by their aspirations and economic capacity. The available literature is quite varied in character. The roles and activities of community health workers are enormously diverse throughout their history, within and across countries and across programmes (WHO,2007). The early literature emphasizes the role of the village health workers (VHWs), which was the term most 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. VHWs were functioning as community mouthpiece to fight against inequities and advocate community rights and needs to government structures: in David Werner's famous words, the health worker as "liberator" rather than "lackey" (Werner, 2011). This

view is reflected in the Alma Ata Declaration, which identified CHWs as one of the cornerstones of comprehensive primary health care (WHO, 2007). Examples of VHW initiatives in Africa driven by this rationale include Tanzania's and Zimbabwe's VHW programmes in their early phase. In Kenya, community health workers, as envisioned in the document, *Taking the Kenya Essential Package for Health to the Community: A Strategy for the Delivery of LEVEL ONE SERVICES,* 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).

While in some cases CHWs perform a wide range of different tasks that can be preventive, curative and/or developmental, in other cases CHWs are appointed for very specific interventions (WHO,2007). The roles of CHWs can as well be described as: home visits, environmental sanitation, provision of water supply, first aid, treatment of minor and common illness, nutrition counselling, health education and promotion, surveillance, maternal health, family planning, child health, communicable disease control, community development, referrals,record keeping and data collection (Lehmann & Sanders, 2007). There is little consensus about the role itself and where it is most effective. Studies recommend the refinement of CHW roles; development of CHW evaluation guidelines and tools; establishment of a CHW evaluation database; establishment of CHW certification, academic linkages, and core curricula; and

development of the means to sustain the CHW role through public policy and financing changes (Swider, 2002).

2.2: CHW Demographic characteristics that influence performances of CHW Programs

A community health Worker (CHW) is any health worker carrying out functions related to health care delivery;trained in some way in the context of the intervention and having no formal professional or paraprofessional certificate, degree or tertiary education (Lewin et al., 2005). The motivation and retention of CHWs are influenced by various inherent characteristics of CHWs, such as their age, gender, ethnicity, and even economic status, which affect how they are perceived by community members and their ability to work effectively (Karabi *et al.,* 2001). However, the titles, the demographic profile and the deployment of CHWs have varied enormously across countries (Lehmann and Sanders, 2007). The question of who CHWs were and are in terms of gender, age and status, finds many different answers in the literature that reflect the diversity of CHW programs (WHO, 2007). Studies have also differed on whether social-demographic factors are important determinants of CHWs' effectiveness (Lehmann & Sanders 2007). Understanding how the socio-demographic factors influence CHWs' performance in conducting their targets is therefore of paramount importance primarily for the adoption of evidence based level one health care services (Ndedda,, 2012).

Comments on age are even less frequent in the literature, although mature age (between 20 and 45 years are reported to be a criterion in a number of cases (WHO, 2007). Studies

over time have shown that older CHWs are more respected in their communities (Bhattacharyya, *et,al* 2001). Simkhada et al, 2007 report that effect of age on performance of health care services is unclear (Simkhada et al, 2007) and inconsistent across studies (Babalola and Fatusi, 2009).

In regards to gender, the majority of articles do not comment specifically on whether CHWs were male or female (WHO, 2007). CHW programmes in Bangladesh and Pakistan mention the sex of their health workers, while articles on programmes in Latin America and Africa in most cases do not (WHO,2007). The gender issue is to a very large extent influenced by wider societal practices and beliefs, and gender relations more generally. Few studies have looked at how gender and gender roles, influence the performances of CHW (Furuta and Salway, 2006). Among some communities such as the Somali, male CHWs find it difficult to pass messages to women (Bentley, 1989). In other communities, resistance from husbands was identified as a key barrier to the participation of women in health related activities. (Boerma et al., 2006).

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 (Egwuatu & Umeora 2007). Lehmann et al., 2005 report that family reasons certainly influence decisions of CHWs, but more so for women than for men. Lehmann et al. (2005) conclude that the evidence on performance and job attrition due to a personal situation such as marriage is inconclusive.

A great deal of variation exists in required qualifications (WHO,2007). Many but not all CHW programs require literacy as a prerequisite (Boerma et al., 2006). For instance, Kenyan AMREF programmes require seven years of primary education (Johnson & Khanna, 2004) while a community self-help health development programme in Saridid, Kenya did not consider literacy as selection criteria (Kaseje et al., 1987). Some programmes consider ability to read and write and communication skills (Ande, Oladepo, & Brieger, 2004).The level of formal education tends to increase the level of general knowledge and hence may positively influence the ability of an individual to deliver. While Lower level of education is associated with low delivery of health care services (Ouma *et al.,* 2005).On the contrary, according to Antwi *et al,* 2013 in a study on factors influencing the delivery of intermittent preventive treatment of malaria in pregnancy in the Bosomtwe district Ghana, there was no association between educational level and delivery of health care services.

It is well established that health educators who obey their own health messages are more likely to have impact on delivery of health service (Mulindwa *et al*., 2000). Rayman *et al*., (2010) in a study on factors affecting recruitment and retention of community health workers in a newborn care intervention in Bangladesh found that the services offered by a CHW were influenced by the cluster they come from and the type of house they live either rented or personal.

2.3: Health system determinants associated with Performance of CHW at Level One

All components of the health care system play an important role in the performance of health care services. The elements of the health care system and health care related factors including its culture and environment may have an impact on service delivery (Shah, *et al*., 2007). The healthcare industry has recently devoted large sums of money to investments in health decision support systems and improvements in health information technology. The aim of the recent surge of investments in health information technology is to improve the efficiency of clinical and public health practices as well as the cost-effective management and performance of CHW.

Reports and records-keeping are often highlighted for establishing a good monitoring system (Jerden, Hillervik, Hansson, Flacking, & Weinehall, 2006). Nevertheless only a 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 place (Bhattacharyya,*et al*., 2001). For example, 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 (Doherty & Coetzee, 2005). Studies for example in Columbia, have also shown that "feedback are more significant in the overall motivation and performance of CHWs (Doherty & Coetzee, 2005). The critical issues that still remain in this respect are which mode of feedback mechanism work and how do CHWs and CHEWs utilize the feedback report (Arole, 2007).

Timely and accurate information form the basis for management to plan and for service providers to take appropriate action. However, very little is known about how health

workers particularly CHWs value investments in health information technology and its impact on performances of CHW (Mensah & Aikins, 2007**)**.

The extent to which economic resource base and political commitment factors should be taken into account is contingent on local conditions including the economic and socio-political factors. The role of economic resource base and political commitment will largely determine the amount of attention CHWS receive in the design and implementation of CHW

schemes (Haines and Lagarde, 2007). The relationship between resources and healthcare is widely documented in a high-income country settings but has rarely been empirically investigated in low-income countries (Bakeera *et al.,* 2009).

The health care provider depends on an efficient combination of financial & human resources, supplies, and delivering of services in a timely fashion. Their role of governance and specifically efficiency are paramount in health care service delivery (Lewis and Haukoos, 2006).

Availability of drugs and cost of travel may influence performances of CHWs, however few studies have assessed the impact of availability and accessibility of drugs by community health workers (Haine and Lagarde., 2007).

Duration, content, organization and approaches to training of CHWs vary dramatically across programmes. In countries such as India CHWs are trained for about 3 months, while in other countries such as Brazil they are trained for about 6 to 8 months at the

beginning of their career (Campos et al., 2004; Leslie, 1985). The training of CHWs has been a key and major activity in most of the health programmes in Kenya based on the CHWs manual. The CHWs manual advocates for a three phases training with each phase lasting tweive days (MOH 2007). CHWs have been trained even before the Alma Ata conference, however we are still not clear on fundamental issues such as duration of the training, content of the training, the trainers, the training venue and the role the community plays in the training. It is not peculiar that in one programme, CHWs are trained for two weeks, and in another for up to six months (Kaseje *et al.,* 2003). The empirical analysis of the contents and approach of various training programs and their influence on performance of CHWs remains minimal (Prasad & Muraleedharan, 2007).

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. Human resource is one of the most important components of determining the performance of public health programs and deliverables (WHO, 2006). However, there is limited research on the quantitative links between health workers and service coverage rates (Kruk et al., 2009). There is contradictory evidence on the contributions of different categories of health workers and the role of health workers relative to other health system inputs in increasing the delivery of essential services, particularly in developing countries (Kruk et al. 2009). This research examined the relationship between community health workers' concentrations and delivery rates of level one health services**.**

Changing people's behavior takes time and cannot be achieved by one or two visits in a year Nor is it possible to change a person's attitude and behavior in a 20-minute visit (Orrell and Wilson 2003). Therefore, to give meaning to the CHW's role as motivator there is need to evaluate the relative importance of the number of visits and frequency (Kruk et al. 2009).

Successful delivery of health service is critically dependent on the provider and the client establishing a robust relationship (Orrell and Wilson 2003). Wide differences in social status between practitioner and patient may also inhibit health service delivery. Few comprehensive studies have been completed to analyze the relationship between patient-provider relationship and performance (Turin, 2010).

The distance covered by CHW to offer health services and the availability of transport options can have a significant impact on appropriate and timely delivery of health services (Furuta and Salway, 2006). Despite general acknowledgements of its importance, time and distance covered by a CHW is hardly considered in studies (Kabir 2007, Gage and Guirlene 2006). Experience across countries varies with two critical commonalities that is the optimal population size that a CHW could cover and the optimal range of services that a CHW could deliver (Prasad & Muraleedharan, 2007). Countries Sri Lanka a CHW covers as low as 10 households offering a set of MCH related services (UNICEF, 2004) On the other hand, there are countries such as India, where a CHW covers about 1000 households (UNICEF, 2004).

2.4. Community factors influencing the delivery of Health service at level one.

A number of community social patterns affect the performance of services (Addai, 2000). Provider's decisions regarding health care services are strongly influenced by the practice of others in the community (Stephenson et al., 2005). The power hierarchy at home plays a central role in determining utilization of health services (Duong, *et al*. 2005).However, few studies have looked at how family support and provider's position within the household, influence performance of CHWs (Furuta and Salway,2006). There are several pathways including population characteristics, contextual factors and living circumstance through which a community could influence the performances of a CHW (WHO, 2006). The role of community factors on decision to deliver and utilize health care services have been largely ignored (Cheboi, 2011) Incorporating the role of community in the analysis of performances of CHW will provide an opportunity to highlight health risks associated with particular social structures and community ecologies which then may explain how community development, attitudes, norms, and availability of health service influence health seeking behavior (Stephenson *et al*., 2005).

The widely publicized views of politicians, religious groups and family opinion leaders on the use of health services play an important role in skepticism towards delivery and reception of services (Frank, 2009). Cultural and leader's opinion is particularly important in the demand for or against health services particularly community based ones.

A study in Pakistan, for example, found that resistance by a husband and cultural unacceptability of a health service were more important determinants than fears of further worsening of disease status (Sathar , 2001). Lifestyle is a motivator to the delivery of

health service and few studies have looked at the effect of community lifestyle at performance of health care services (Shah, *et al*., 2007). Healthy communication is a dynamic process that at some point in time has a status that may or may not be appropriate for specific population groups it is meant to inform.

The state of health communication for a given population is a function of several tiers of structure and process. This includes government policy, health care directives, health care structure and process, and the ethnic social realities of a multicultural society The relationship between these many variables has been inadequately studied yet represents an important component of a national healthcare infrastructure and strategic plan that aims to bring quality and equality to the health of all populations (Calderón et al 2007). The issue of personal safety and security is a prerequisite for the initiation, as well as the continuation of the delivery of health care therefore there is a need to assess its role in the performance of CHWs (Sibhatu, *et al* 2008). It is widely acknowledged and emphasized that the success of CHW programmes hinges on regular and reliable support, provision of transport, drug supplies ,equipment and supervision. The use of traditional medicines and traditional doctors is not included in health care delivery data in Kenya (Turin, 2010).

The level of training of provider has a big influence over delivery of service (Brabin *et al*, 2009) however, studies on training of the workforce are inconclusive (lindelow, *et al*., 2004). A study done in rural western Kenya to assess the effect of health care worker training on the use of intermittent preventive treatment (IPT) for malaria in pregnancy, by (Ouma *et al*., 2005) showed an increase in performance from 19% in 2002 to 61% in

2005 for IPT 1 after health care workers were retrained. However a survey conducted in three health centers in Kampala showed no effect on malaria guidelines and treatment after training of health workers (Nankwanga and Gorette, 2008).

General knowledge of the dangers, consequences of ill health, shapes personal perception on promotion of any type of health services and would be benefits (Kabir, 2007) hence need to examine the role of various forms of knowledge in delivery of health care services. Evaluating and making the best use of information on good and bad health sector providers requires some measure of sophistication in the target group however, there are limited studies on the role of community health workers in delivery of health services (Deventer and Radebe, 2009). Attitudes towards medication, illness and healthcare service provider may interfere with delivery of health care (Deventer and Radebe, 2009**)** .

The tendency of patients to doubt or question advice offered by medical practitioners may also contribute to performances of CHWs. Stigma towards certain conditions has effects on performances of CHWs (Turin, 2010). Cultural background is an important factor in the delivery of health care services, especially in Africa. Many cultural or social factors may impede the performance of CHWs. The cultural perspective on the performance of CHWs suggests that medical need is determined not only by the presence of physical disease but also by the cultural perception of illness (Addai, 2000). In communities where women are not expected to mix freely, particularly with men,

performance of CHWs by opposite sex may be impeded. Few studies have looked at beliefs and attitudes directly (Gabrysch and Campbell, 2009).

Job satisfaction, influenced by instituitional factors, such as financial considerations, working conditions, management capacity and styles, professional advancement and safety at work is a major determinant of health service delivery in general (WHO, 2006).There are few studies on the influence of satisfaction on performance of CHWs (Simkhada *et al.* 2007). CHWs do not exist in a vacuum. They are part of and are influenced by the larger cultural and political environment in which they work.

2.5: Performance and Effectiveness of CHWs

Effective community health services require well thought out theoretical and practical training modules and programmes. Most activities for CHWs take place in the community with periods of practice at various facilities up to the sub-district level (Karabi, *et al* 2001). However studies have shown contrasting results on the performance of community health services and community health workers (CHWs) (HENNET, 2010). For instance in Democratic Republic of Congo (DRC), CHWs were found to be effective in administering timely and effective treatment of presumptive malaria attacks (Kidane and Murrow, 2000). On the other hand, large centrally managed CHWs programmes have failed, whilst true community-based ones work well (Friedman.,2004). In Kenya the positive performance of CHWs programmes has been demonstrated in a number of districts Kakamega, Busia, Siaya, Bondo, and Kisumu though on pilot and small scale (MOH, 2007).

Many studies have highlighted the role of incentives in determining the overall performance of community workers (Ballester, 2005). While some report that monetary incentives can increase retention of CHWs across countries (Karabi, *et al*., 2001) other document show quite varied experience with several countries employing CHWs as volunteers or contract staff. The experience of NGOs is also quite varied in this respect (Prasad and Muraleedharan 2007).

On the other hand monetary incentives often bring a host of problems because the money may not be enough, may not be paid regularly, or may stop altogether. Lack of uniform monetary incentives may cause problems among CHWs. However, there are some success stories of programs paying CHWs (Karabi, *et al*., 2001). Many programs have used in-kind incentives effectively. Non-monetary incentives are critical to the success of any CHW program. The critical question is that would incentives in material or in kind per se influence CHWs' performance? (Prasad and Muraleedharan (2007).

CHWs need to feel that they are a part of the health system through supportive supervision and appropriate training (Karabi, *et al*., 2001). Relatively small things, such as an identification badge, can provide a sense of pride in their work and increased status in their communities. In the end, the performance of a CHW comes down to his or her relationship with the community and social complexity of the communities they serve.

Different CHWs will need different types of incentives, depending on other job opportunities available, experience, the economic situation of the community and other factors. Both the performance of CHWs as change agents and the feasibility of

implementing and sustaining large-scale CHW programs have been called into question (Karabi, *et al*.,2001). High attrition rates cause several problems. Frequent turnover of CHWs means a lack of continuity in the relationships established among a CHW, community, and health system. Considerable investment is made in each CHW, and program costs for identifying, screening, selecting, and training the CHW rise with high attrition rates. When CHWs leave their posts, the opportunity is lost to build on their experience and further develop their skills over time through refresher training. The very performance of CHW work usually depends on retentiveness. Interaction with other CHWs can be a critical motivator for people who often work with little supervision or tangible evidence of their performance (Karabi, *et al*., 2001).

2.6: Summary of literature review.

From the reviewed literature there is no conclusive tidy package of incentives which is successfully tailor made to motivate CHWs to continue performing. Rather, a complex set of factors affects CHW motivation and attrition, and how these factors play out varies considerably from place to place. There are a limited number of studies evaluating demographic characteristics of the level one health service provider such as age but not by cohorts, gender and marital status. However several studies have examined the role of education status, residents; source of income; knowledge of the health provider and attitude and practice but these studies were limited to quantitative research and non on qualitative research design. On health system factors, there are so much literature on cost of financing but not on community based health care financing; quality of services;

governance; accessibility and availability of drugs and supplies however the findings are inconclusive and inconsistent. Studies on the role of supervision and technical support, monitoring and evaluation; communication and leadership; patient- provider relationship; area covered by community health worker are limited. The question of how to sustain a long-term CHW program and to retain CHWs requires additional investigation.

In community factors the role of religion; family support; recognition of health services; community participation and security have been examined but the results are inconsistent across studies. The role of alternative medicine; beliefs, traditions and norms; knowledge of community health worker and the service they offer; motivation and privacy and confidentiality have not been fully explored. The fact that the performance of the CHW depends almost entirely on his or her relationship with the community is surprisingly often overlooked. There are several quantitative researches on role of perception of health care services by CHW but limited qualitative research

CHAPTER THREE: MATERIALS AND METHODS

3.0: Introduction

This was a study to establish the determinants of performance of community health workers in Njiru District. The research design, the study site, study population, sample size determination and sampling procedure are described. This chapter also describes the research instruments used, data collection procedures, data analysis and ethical considerations.

3.1: Research Design

The study was a cross-sectional study design which adopted both quantitative and qualitative methods of data collection. On the quantitative dimension, structured questionnaires were used to survey economic, socio-cultural, demographic attributes, knowledge, attitudes and practices of CHWs. The approach was considered most appropriate for the study because of its ability to elicit a diverse range of baseline information (Mugenda, 2008). On the qualitative dimension, key informants interviews obtained opinion of the DHMTs, public health officers, CHEWs and the District Community Focal person on the determinants affecting their performance. The approach was proposed because of its ability to elicit in-depth opinion that qualified quantitative data source from the CHWs.

3.2: Variables

The independent variables included demographic factors (age, sex, marital status ,education status, Economic status (employment, incentives, allowances, reimbursements), Health system determinants (information systems, scope of work, financing, supplies, supervision, training, refresher course, exchange visit, means of transport, certification) and community factors (family support, community recognition, security, communication and value)

3.2.1: Operationalization of the variables

3.2.2: Independent variables

These included all the variables in the three specific objectives (demographic, health systems and community factors) as explained below.

- **Age-** was defined as age of the respondents in completed years.
- **Attitude**-Community perceptions of health services rendered to the community by the CHWs
- **Communication-** Was defined as channel of communication used by various health service providers at various level and community.
- **Community** meant people with a stake in health service provided by the CHWs at level one.
- **Financing -**Was defined as the source of monentary incentives provided to the CHWs to facilitate delivery of health care services at level one..
- **Gender** - Whether men or women respondents.

- **Health systems** – Meant issues of health workforce, information systems, supply of commodities, service delivery, financing and governance at level one.
- **Knowledge**-Understanding of disease conditions and their mitigation measures by CHWS
- **Level of education**-As the highest attained formal education by the respondents.
- **Marital status** referred to family social status such as married, divorced or single respondents.
- **Participation** was defined as people's contributions towards the health agenda and this includes their roles and responsibility im promoting health.
- **Practices**-Health seeking behavior patterns amongst the community.
- **Religion -** Meant the respondent's particular system of belief.
- **Sex** – Sex orientation of the respondents ie ther being male or female
- **Source of Income-** Meant whether the respondents was on any kind of employement or was a dependant.
- **Technical support** - Meant the facilitative support given to CHWs by the relatives community or provincial administration to enhance their performance per month.

3.2.3.: Dependent variables

The dependent variables included performance of CHWs which were assessed in terms of achievement against the set targets in a month as per the community health strategy.

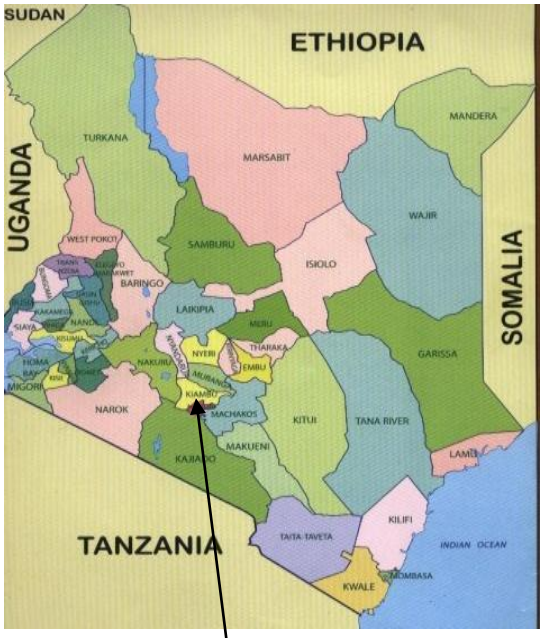
- Number of households visited

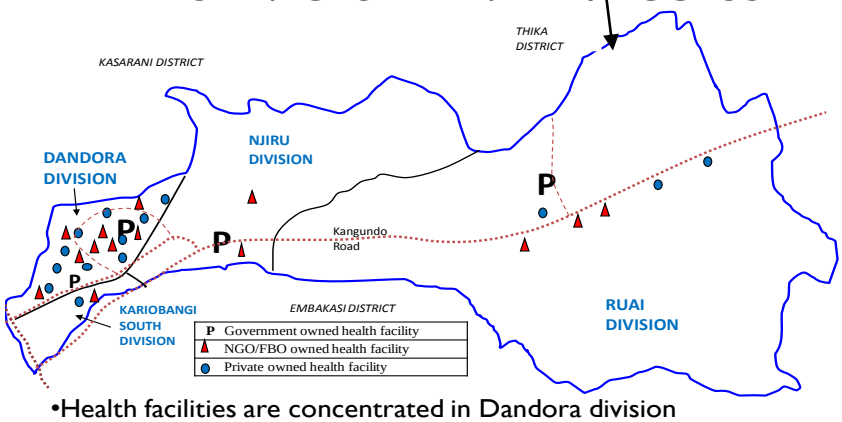
- A number of health education session held
- Number of clients referred
- A number of community Baraza addressed
- Number of CHW meetings attended

3.3: Location of the Study

The study was carried out in Njiru District which has four divisions, 13 locations and 27 sub locations. The District had a cosmopolitan society with peri urban and slum dwellers. The residents had multicultural diversity. The District had only four (4) level 2 public health facilities and the reporting rate of the CHWs was at 55% (MOH,2011). The district had a population of 343,382 according to the 2009 census. The major land use and their distribution in the district were residential, commercial, agricultural, industrial and institutional (KNBS, 2010). The district had 33 health facilities including public,private,faith based and non governmental organization owned facilities.These were:4 nursing homes, 1 health center 13 dispensaries and 15 clinics. The District had formed thirty three community units.

MAP OF THE STUDY AREA





- Health facilities are concentrated in Dandora division
- Most HFs are privately owned
- Poor geographical access in the larger eastern part
- Inadequate road network

3.4: Target population

The target population was all community health workers.

3.5: Study population

The community health workers in the eleven formed community units which had been operational for the last six months in Njiru Districts. Each community unit comprised of fifty (50) CHWs hence the study population was five hundred and fifty (550) CHWs.

3.6: Sampling techniques and Sample size determination

The eleven (11) community units each with 50 community health workers were selected through cluster sampling from the thirty three formed community units The community health workers were diversified in demographic characteristics and economic status. The sample size was calculated using a formula for determining sample size for single population not exceeding 10,000 as used by fisher et al as explained by Mugenda,O and Mugenda,A 2003.

To determine the sample size

$$n = \frac{Z^2pq}{d^2}$$

Where; n = desired sample

Z = Standard normal deviate at the required confidence level

(Usually set at 1.96).

p = the proportion of the CHWs practicing.

q = Characteristics of no interest 1-p

d = the level of statistical set usually at (0.05)

$$= \frac{1.96^2 \text{ x } 0.5 \text{ x } 0.5}{0.05^2} = \frac{1.96 \text{ x } 1.96 \text{ x } 0.5 \text{ x } 0.5}{0.05 \text{ x } 0.05}$$

$$= \frac{0.9604}{0.0025} = 384.16$$

Therefore, 384 was the calculated sample size.

But because the target population was less than 10,000 that is 550 CHW the above formula is used where the population is greater than10, 000 therefore the below formula was used to determine the sample size.

$$nf = \frac{n}{1 + \left(\frac{n}{N} \right)}$$

Where,

NF = desired sample size (when the population is less than 10,000).

n = the desired sample size (when the population is more than 10,000)

N = the estimated of the population target.

1 = a constant

Therefore, $nf = \frac{n}{1 + \left(\frac{n}{N}\right)}$

$= \frac{384}{1 + \frac{384}{550}}$

$= \frac{384}{1 + 0.69}$

$= \frac{384}{1.69} = 230$ CHWs

Systematic sampling method was used to identify the respondents. A register of the CHWs was obtained from the DMOH's office. Respondents were equally distributed per the eleven community units.

$\frac{230}{11}$ = 21 respondents per unit

The 21 CHWs were derived from their register and were randomly selected

A table of random numbers was used to identify the first respondent and thereafter every 2nd CHW from the register was interviewed until the 21th respondent per community unit

Table 3.1: Sampling Criteria

No.	Community unit	Trained CHW	Selected Sample size	Sampling interval
1	Canaan	50	21	2
2.	Gitarimarigu A	50	21	2
3.	Hdd	50	21	2
4.	K/south	50	21	2
5.	Kibarage	50	21	2
6.	Kinyago	50	21	2
7.	Kwa mbao	50	21	2
8.	Maili Saba	50	21	2
9.	Mowlem	50	21	2
10.	Gitarimarigu C	50	21	2
11.	Silanga	50	21	2
Total		550	230	

3.7: Development of Research Instruments

A structured questionnaire was developed for collection of quantitative data. The questionnaire was pre tested in Embakasi district before actual data collection to verify the validity and reliability before the actual study was done. The questionnaire was administered in English as most of the CHW could read and write. FGD guide was

developed for the CHWs who did not participate in the quantitative survey and was open ended.

3.8 Pretest of the Study

Pretest of the study was conducted in Embakasi, a neighboring district to Njiru District. The pretest tested the research instruments to verify whether the question asked and observations made were useful in achieving the objectives of the study. Thereafter the tools were reviewed

3.8.1: Validity

Five research assistants were identified prior to the research. They were trained on the research instruments in the aspects of: how to use questionnaire, to avoid mistakes in recording, the meaning of each item of questionnaire, and how to rephrase questions not well understood by respondents,to reduce interview bias. All the filled questionnaires were checked for anomalies

3.8.2: Reliability

The reliability of the questionnaire was standardized by ensuring that the same structured questionnaire was used for all the respondents. The structured questionnaire was administered in English since all the CHWs could understand the language.

3.9: Data Collection Techniques

3.9.1: Structured Interview questionnaire

The quantitative data was collected using a structured interviewer guide administered to CHWs. The guide covered sections on Health system determinants, community factors as

well as demography, knowledge, attitudes and practices of CHWs towards the effective delivery of health care services at level one. The interviews were conducted informally in a relaxed atmosphere. The research assistants checked the questionnaire for consistency from the responses at the end of each day,

3.9.2: Focused Group Discussions

A structured focus group discussion guide was formulated and was used to gather information on CHWs attitudes and practices towards delivery of health services they offer to the community.. A team of 6-12 CHWs composed one FGD. Each FGD was facilitated by one moderator (the researcher) two observers (public health officers) and three note takers (research assistants). FGD was held in a private setting to facilitate freedom of expression. CHWs who took part in the interview did not participate in the FGD. The selection considered issues of gender, age, experience and level of education for homogenicity.

3.9.3: Key Informant Guide

This tool was used for key informants who included six Community Health Extension Workers, One District community strategy focal person and six DHMT members. It included information on cultural and economic factors influencing provision of health services offered by CHWs.

3.9.4: In-depth interview

Qualitative data was collected from random selected household to validate the information from CHWs and confirm services rendered to the community. This captured the client satisfaction on the services offered by CHWs.

3.10: Data analysis

The quantitative data was cleaned, entered into a computer, coded, cleaned and analyzed for significance at $p<0.05$ using the version of statistical package for social scientists (SPSS) version 20. The results are presented descriptively and inferentially using frequency distributions, percentages and measures of central tendency. Chi square was used for inferential statistical for dependent and independent variables. A p value < 0.05 was deemed significant while $p> 0.05$ was taken as not significant. Frequency tables, cross tabulation, bar charts, and histograms were used in data presentations while inferential statistics were computed. Qualitative data was analyzed manually into trends, sub themes and themes in which conclusion was inferred.

3.10.1:Rating of Delivery of Level One Health Services

The study used five key indicators that measure overall performance of CHWs at level one;; number of clients referred, number of health education forums conducted, number of *barazas* addressed, number of CHW meetings attended and number of households visited. A code of one was allocated to every service offered above the given targets (yes=1) and zero for services delivered below given targets (no=0). A dichotomous outcome (performance of delivery of level one health services) was done by scoring five

target variables where one meant yes and zero meant no for delivery of level one health services as illustrated in table 3.2 below.

Table 3.2: Rating scale for delivery of level one health services

Service	Achieved or not	
	Yes	No
Achieved targeted HH visit	1	0
Addressed expected no. of baraza's	1	0
Conducted expected of no. health education	1	0
Referred expected no. of patients	1	0
Attended over half of CHW meetings	1	0

The overall results were computed for all the questionnaires and aggregate average results in percentage for yes meant delivered services while no meant no delivery of services.

3.11: Ethical Considerations

The researcher observed the code of ethics in the process of reviewing the relevant literature, data collection and thesis writing. The researcher clearly explained the purpose and objective of study to respondents. The data collection tools were administered in a conducive environment. The respondents were assured of total confidentiality and that the information collected was only for research purpose.

Authorisation to carry out the study was obtained from Kenyatta University, National Council for Science and Technology, Ministry of Public Health and Sanitation, the ministry of Education. Permission was then obtained from the district Medical officer of Health Njiru. Informed consent was obtained from Community Health workers and the

respondents who took part in the study. Only those who were willing to participate in the study were interviewed. Data was collected anonymously, without using the name of the interviewee in the questionnaire.

CHAPTER FOUR: RESULTS

4.1: Introduction

This chapter presents the findings of the study on the performances of community health workers in Njiru district,Nairobi 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 225 CHW and consultative discussions using focus group discussions and key informant interviews. A total of 225 respondents against a target of 230 (CHW) participated in quantitative studies. This was a response rate of 98%.

4.2: Demographic characteristic of the respondents

The total number of CHWs interviewed were 225.The demographic characteristics of the study population are as shown in Table 4.1. The median age for CHWs was 35years (IQR 30-39). Twelve percent (29) of the respondents were less than 20 years and over 50 years respectively while the age bracket of 20-29, 30-39 and 40-49 were 22%, 27% and 25% respectively. The majority of the study participants 179 (80%) were females and on marital status, 123 (55%) were married, 71 (32%) were single while 31 (14%) were either widowed or separated. One hundred and ninety nine of the respondents (88%) were Christians while Muslim, Hindu, and the Indigenous were minority 14 (6%), 9 (4%), and 3 (1%) in descending order. In education, 126 (56%) had completed secondary education while 74 (33%) had completed primary and Only 25 (11%) had tertiary education as illustrated in table 4.1.

Table 4.1: Demographic characteristics of study respondent (n=225)

Characteristics	No. (n)	Percentage (%†)
Age		
<20yrs	29	12.9
20-29 yrs	50	22.2
30-39yrs	60	26.7
40-49yrs	57	25.3
>50 yrs	29	12.9
Gender		
Male	46	20.4
Female	179	79.6
Marital status		
single	71	31.6
married	123	54.7
widowed/separated	31	13.8
Education		
Primary	74	32.9
Secondary	126	56.0
Tertiary	25	11.1
Religion		
Christian	199	88.4
Muslim	14	6.2
Hindu	9	4.0
Indigenous	3	1.3
Occupation		
None	89	39.6
Business	78	34.7
Employed	18	8.0
Farmer	40	17.8

Abbreviations: n- Number of respondents per category; † Column percentages

Only 18 (8%) of the respondents were employed while the majorities were not. Among the non-employed 40 % were business people, 18% were farmers while 40% hustle. While the majority of the respondents were independent, a significant 46 (20%) of the respondents were supported by their families. Most respondents 126 (56%) earned a

monthly income less than Kshs. 2500, 35% earned between Kshs 2501 to Kshs. 5500 and only 9% earned above Kshs. 5501 as shown in figure 4.1 below.

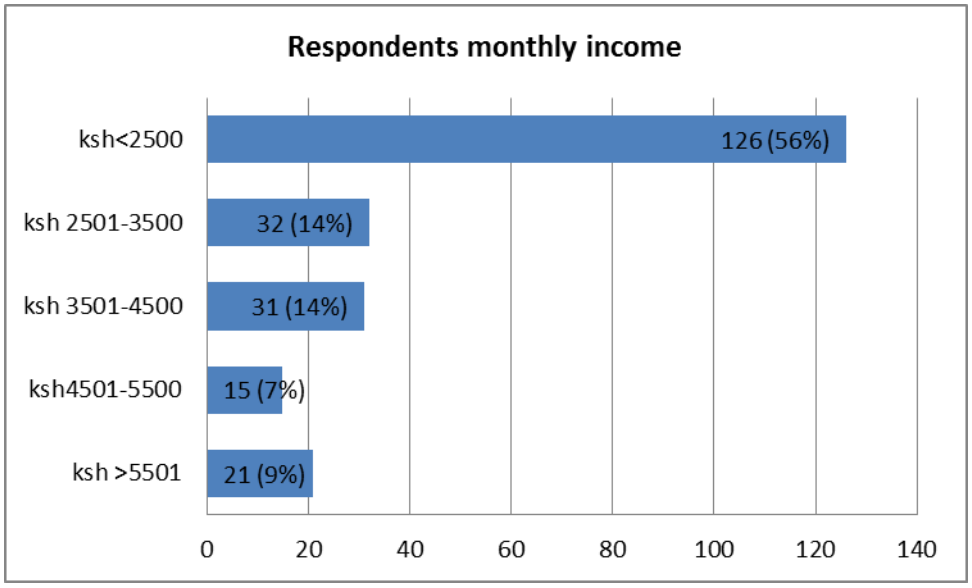


Figure 4.1: Respondent monthly income

4.3.: Demographic factors in relation to CHWs Performance at level one

The first objective of the study was to describe CHW demographic characteristics which are associated with performances of community health workers in Njiru district, Kenya. The demographic characteristics were determined by age, gender, level of education, occupation, income and source of income, marital status and religion. Gender was statistically significant in relation to the performance of CHW in delivery of level one of health services ($\chi 2=7.619$, df=1, p=0.006). Only 8 (17.4%) male respondents were associated with performance compared to 72 (40.2%) females Figure 4.2.

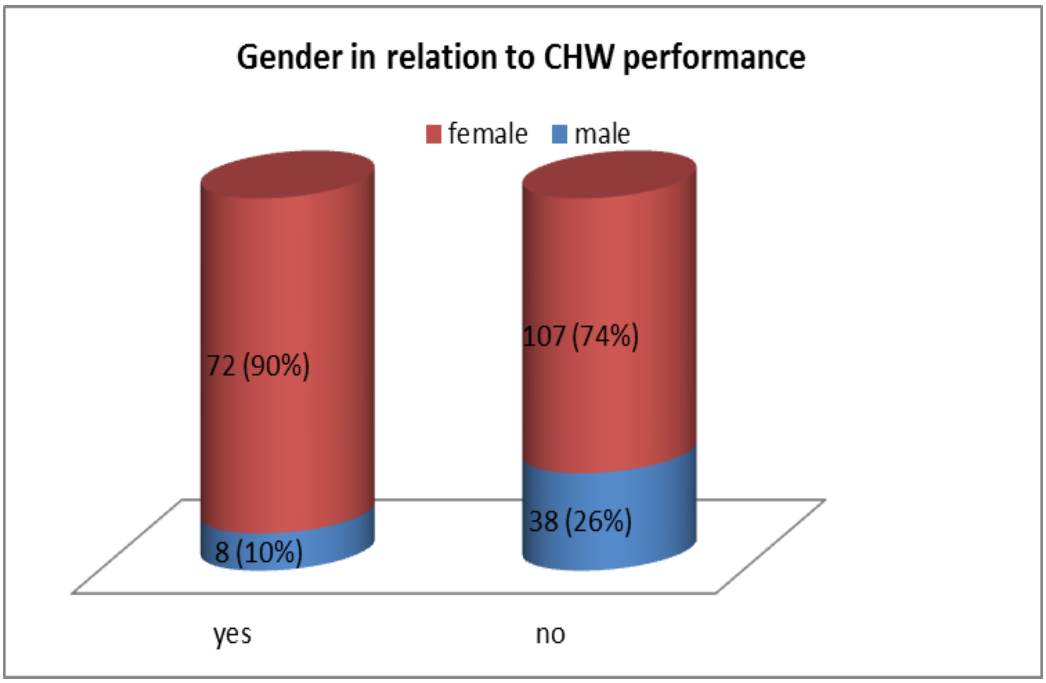


Figure 4.2: Gender in relation to performance (n=225)

These findings were validated in four (K/south, Kibarage, maili Saba and mowlem) in which (100%) and two other community units (Canaan and HDD) which over (75 %) of the male respondents ranked as performers respectively. However there were contrasting results in silanga and gitari marigu C as in table 4.2.

Table 4.2: Performance in comparison to respondents' gender per community unit

Community Unit (CU)	Gender	Performance of CHW	
		Yes	No*(%)
Canaan	Male	1 (25.0%)	3 (75.0%)
	Female	5(29.4%)	12 (70.6%0
Gitarimarigu A	Male	2 (50.0)	2 (50.0%)
	Female	3 (17.6%)	14(82.4%)
Hdd	Male	1 (20.0%)	4 (80.0%)
	Female	10 (62.5%)	6 (37.5)
K/south	Male	0.(0)	8 (100.0)
	Female	4 (30.8)	9 (69.2%)
Kibarage	Male	0. (0%)	9(100.0%)
	Female	6(54.5%)	5 (45.5%)
Kinyago	Male	1 (16.7%)	5 (83.3%)
	Female	4(26.7%)	11(73.3%)
Kwa mbao	Male	1 (50.0%)	1(50.0%)
	Female	10(55.6%)	8 (44.4%)
Maili Saba	Male	0(.0%)	2(100.0%)
	Female	11(57.9%)	8(42.1%)
Mowlem	Male	0	4 (100.0%)
	Female	5(29.4%)	12(70.6%)
Gitarimarigu C	Male	1(100.0%)	0
	Female	10(55.6%)	8(44.4%)
Silanga	Male	1(100.0%)	0
	Female	4 (22.2%)	14(77.8%)

Abbreviations: CU-community units; *Column percentages

Age was not statistically significant ($\chi 2=0.665$, df=4, p=0.956) in relation to performance of CHW in the delivery of level one health services. However a third of respondents in the age brackets of less than 20 years, 20-29 years and above 50 years were performing in delivery of level one health services as illustrated in table 4.3. Marital status was not significant ($\chi 2=3.905$, df=2, p=0.142) in relation to CHW performance. The other

demographic factors: education, religion(χ2=3.452, df=2, p=0.178), occupation (χ2=0.9723, df=3, p=0.808), religion(χ2=2.093, df=3, p=0.553) and main source of income (χ2=6.222, df=4, p=0.183) were not statistically significant in the performance of respondents even after running multinomial logistic regression but there was parity among Muslims respondents in performance of level one health services as table 4.3. Most 199 (88%) of the respondents were nominated by the community to be CHW while 14 (6%), 12 (5%) were nominated by community health committee and the Ministry of health respectively. Whereas there was no association (χ2=1.858, df=2, p=0.395) in nominating a person in relation to respondent's performance, (50%) among those CHWs nominated by MOH performed while 68 (34%) and 6 (43%) performed among those selected by community and community health committees respectively as in the figure 4.3

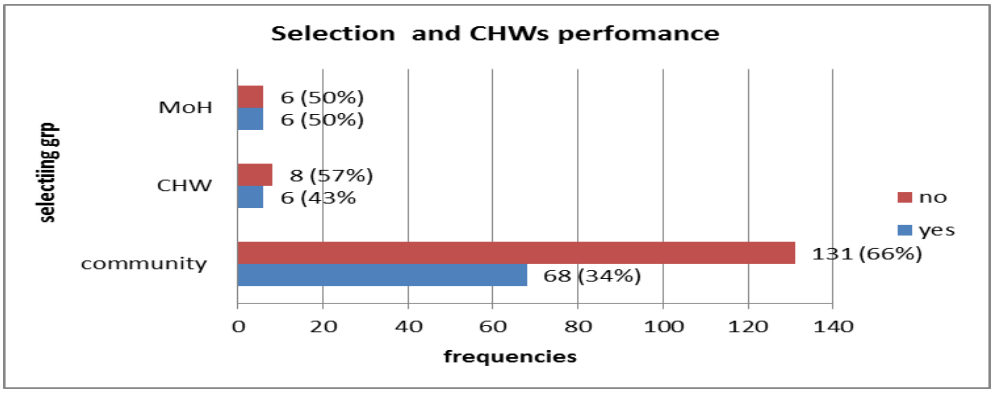


Figure 4.3: Selection and CHWs performance (n=225)

There was no association in respondent's average monthly income (χ2=6. 038 df=4, p=0. 196) and performance with majority CHWs who earned between 3501-4500 being associated with non-performance (OR: **4.775**, 95% CI 1.038-21 P<0.045).

Table 4.3: Association of selected demographic factors with performance of CHWs

Demographic Factors	**Performance (n=225)**		**Bivariate analysis**	
	Yes n (%)	**No n (%)**	OR (95% C.I.)	**P** value
Age				
<20yrs	11 (37.9)	18(62.1)	0.658 (0.186-2.323)	0.516
20-29 yrs	19 (38.0)	31(62.0)	0.959 (0.307-2.298)	0.942
30-39yrs	19 (31.7)	41(68.3)	1.581 (0.531-4.705)	0.410
40-49yrs	19(31.7)	38 (66.7)	1.597 (0.522-4.880)	0.412
>50 yrs	10 (34.5)	19(65.5)	Reference	
Gender				
Male	8 (17.4)	38 (82.6)	**4.593** (1.186- 12.358)	**0.003**
Female	70 (39.1)	109 (60.9)	Reference	
Marital status				
single	20 (28.2)	51 (71.8)	2.312 (0.807-6.625)	0.119
married	43 (35.0)	80 (65.0)	1.678 (0.0.641-4.397)	0.292
widowed/separated	15 (48.4)	16 (51.6)	Reference	
Education				
Primary	22 (29.7)	52(70.3)	0.626 (0.177-2.220)	0.468
Secondary	50(39.7)	76(60.3)	0.477 (0.146-1.559)	0.221
Tertiary	6 (24.0)	19 (76.0)	Reference	
Religion				
Christian	68 (34.2)	131 (65.8)	0.513 (0.024-11.124)	0.671
Muslim	7 (50.0)	7 (50.0)	0.257 (0.010-6.538)	0.411
Hindu	2 (22.2)	7 (77.8)	1.060 (0.040-27.746)	0.972
Indigenous	1 (33.3)	2 (66.7)	Reference	
Occupation				
None	28 (31.5)	61 (68.5)	1.576 (0.569-4.368)	0.382
Business	28 (35.9)	50 (64.1)	1.169 (0.392-3.489)	0.779
Employed	6 (33.3)	12 (66.7)	1.333 (0.323-5.497)	0.691
Farmer	16 (40.0)	24 (60)	Reference	
Source of income				
Salaried	4 (28.6)	10 (71.4)	1.273 (0.382-4.238)	0.694
Farmer	14 (22.2)	14 (77.8)	1.724 (0.708-4.202)	0.231
Self employed	31 (32.9)	64 (67.1)	1.250 (0.545-2.871)	0.598
Casual labor	27 (47.4)	30 (52.6)	2.096 (0776-5.5662	0.144
Family support	12 (29.3)	29(70.7)	Reference	
Average monthly income				
<2500	44(34.9)	82(65.1)	1.510(0.421-5.414)	0.527
2500-3500	13(40.6)	19(59.6)	1.239(0.320-4.788)	0.756
3501-4500	6(19.4)	25(80.6)	4.775(1.038-21.968)	0.045
4501-5500	8(53.3)	7(46.7)	0.506(0.106-2.415)	0.393
>5500	7(33.4)	14(66.7)	Reference	

Abbreviations n; ,total number of respondents CI,confidenceinterval;*column percentages,OR,odds ratio,Significant odd ratio values (unadjusted) in bold

One forty four (64%) of the respondents have been CHWs for one year or less than, 45(20%) for one-two years, (24) for three-four years. whereas only 13 (6%) practiced as CHWs for more than five years. There was no significant association with respondents' period of practices as CHWs ($\chi 2$=5.382, df=4, p=0.250) and performance however 7(54 %) among those who have been CHWs for more than five years performed as in figure 4.4

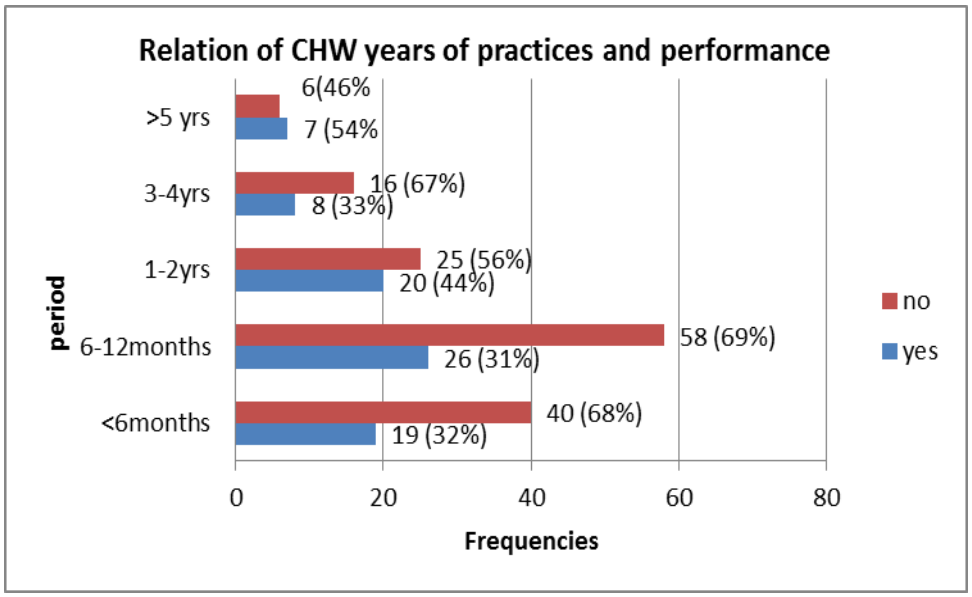


Figure 4.4: Relation of CHWs years of practice and performance (n=225)

4.4.: Overall rates of CHWs Performances at level one

Two hundred and twenty five (225) CHW respondents drawn from two Divisions participated in the study. Dandora and Njiru Divisions had 185 (82%) and 40 (18 %) representatives respectively. On average the overall rate of CHWs Performance at level one in Njiru district was thirty five percent as in the table 4.4 All the key targets of CHWs Performance at level one rated below average in Njiru district (number of

households visited 40%, number of Baraza's 35%, health education 28% and referral of patients 23%) while the target of attending CHW meetings rated lowest at 19%.

Table 4.4: Overall CHWs Performance at level one in Njiru District (n=225)

Targets	**Performance in percentage *%**	
	Yes	**No**
Overall performance of CHWs'	78 (34.7%)	147 (65.3%)
Achieved targeted HH to visit	90 (40.0%)	135 (60.0%)
Held expected no. of *Baraza's*	78 (34.7 %)	147 (65.3%)
Conducted expected no. of health education	64 (28.4%)	161 (71.6%)
Referred expected no. of patients	51 (22.7%)	174 (77.3%)
Attended an expected number of CHW meetings	43 (19.1%)	182 (80.9%)

Abbreviations: *Column percentages

The rate of overall performance of CHWs was poor in almost all the eleven community units except in Gitari marigu C (57.9%), Maili *Saba* and Housing Development Department (HDD) (47%) and kibarage *(*30%) community units as illustrated in the table 4.5. The trend is replicated in five levels one targets for instance; the rating of a number of households visited was very poor in gitari marigu (10%), mowlem (10%), and silanga 5% contrastingly respondents from Canaan scored highly 62%. None of the eleven community units achieved the desired number of community barazas with respondent from Njiru and HDD not attending any *baraza*. Similar results were reported in CHW meetings with the majority of the community units scoring below five percent. The rating of number of referred clients was average in HDD (48%) and Maili Saba (10%) but very poor in Kwa mbao (5%) and gitari marigu (10%). Whereas there were average results in a number of health education forums, Kinyago scored very poorly (5%) while Gitarimarigu A and Gitarimarigu C rated 48% respectively.

Table 4.5: Rates of CHWS performance per community unit (n=225)

Rates of performances of key level one services as per community unit			
Services	**Community unit**	**Performance Services rate in %(†)**	
		Yes	**No**
Overall performance of CHWs at level one	Canaan	6 (28.6%)	15 (71.4%)
	Gitarimarigu A	5 (23.8%)	16 (76.2%)
	Hdd	10 (47.6%)	11 (52.4%)
	K/south	4 (19.0%)	17 (81.0%)
	Kibarage	6 (30.0%)	14 (70.0%)
	Kinyago	5 (23.8%)	16 (76.2%)
	Kwa mbao	10 (50.0%)	10 (50.0%)
	Maili saba	10 (47.6%)	11 (52.4%)
	Mowlem	5 (23.8%)	16 (76.2%)
	Gitarimarigu C	11 (57.9%)	8 (42.1%)
	Silanga	5 (26.3%)	14 (73.7%)

Abbreviations: † Column percentages

Two hundred and nine of the respondents understood their roles clearly and among this group, 65% (136) did not perform whereas 44% (7) among 16 who could not understand their roles performed. A Significant (50) 22% of the respondents were not satisfied with CHW work, 98 (44%) fairly satisfied. On the other hand 40 (18%) and 37 (16%) were satisfied and very satisfied respectively. Financial constraints (40.4%), lack of supplies (37.3%), lack of transport (11.1%), inadequate support (8%) and lack of supervision were highlighted by the respondents as daily challenges. Constraints had no statistical significance ($\chi 2=1.815$, df=4, p=0.770) in relation to performance, with 14.3 % of those who lacked supervision only performing as shown in table 4.6.

Table 4.6: Chi-square values of constraint parameters with performance (n=225)

Characteristics	Performance of CHWs (n) (%) All *		Bivariate analysis		
	Yes	No	x^2	df	P
Constraints					
Lack of supplies	28 (33.3)	56 (66.7)	**1.815**	**4**	**0.770**
lack of transport	10 (40.0)	15 (60.0)			
Lack of supervision	1 (14.3)	6 (85.7)			
Community support	7 (38.9)	11 (61.1)			
financial	32 (35.2)	59 (64.8)			

4.5: Community factors associated with CHW performance

The variables that were taken into consideration in measuring community factors were: family support, norms, values and recognition, community appreciation, incentives and security. The bivariate results are explained while multinomial results are shown in table 4.7.

Table 4.7: Community Factors in relation to Performance of CHWs

Community Factors	**Performance (n=225)**		**Bivariate analysis**	
	Yes n (* %)	**No n (%)**	OR (95% C.I.)	**P** value
Current Incentives				
Community recognition	26 (37.7)	43 (62.3)	0.996 (0356-2.786)	0.994
Kit supplies	20 (30.8)	45 (69.2)	1.687 (0.570-4.989)	0.345
Clients tokens	9(37.5)	15 (62.5)	0.769 (0.194-3.053)	0.709
Supervision support	7 (18.9)	30 (81.1)	0.439 (0.124-1551)	0.201
Career development	16 (53.3)	14 (46.7)	Reference	
Means of Appreciation				
In kind	43 (32.6)	89 (67.4)	1.878(0.585-6.034)	0.290
Material	5 (55.6)	4 (44.4)	5.041 (0.846-30.046)	0.076
Cash	1(50)	1 (50)	17.261(0.700-425.38)	0.081
Community recognition	24 (40.7)	35 (59.3)	2.684(0.798-9.0300)	0.111
None	5 (21.7)	18 (78.3)	Reference	
Source of support				
Spouse	11(40.7)	16(59.3)	0.998 (0.377-2.639)	0.997
Entire family	11 (39.3)	17(60.7)	1.258 (0.513-3.082)	0.616
Community	14 (24.6)	43(75.4)	0.455 (0.205-1.013)	0.054
Provincial administration	6 (50)	6 (50)	1.562 (0.400-6.101)	0.521
None	36 (35.6)	65(64.4)	Reference	
Communication				
None	37 (32.5)	77(67.5)	**0.405 (**0.188-0.872)	**0.021**
One	9 (26.5)	25 (73.5)	**0.315** (0.111-0.896)	**0.030**
2-4	8 (23.5)	26(76.5)	**0.241** (0.084-0.692)	**0.008**
>5	24 (55.8)	19 (44.2)	Reference	

Abbreviations: n, total number of respondents; CI, confidence interval; *Column percentages; OR, odds ratio; Significant odds ratio values (unadjusted) in bold

Ninety percent (202) respondents said they received community support and among these respondents, 75 (37%) meet the threshold of performance of delivery of level one health services while 5 (22%) from 23 respondents who did receive community support did not perform. The highest mode of appreciation was in kind 65%, community recognition (29%), material 5%) and least cash 1% as illustrated in figure 4.5.

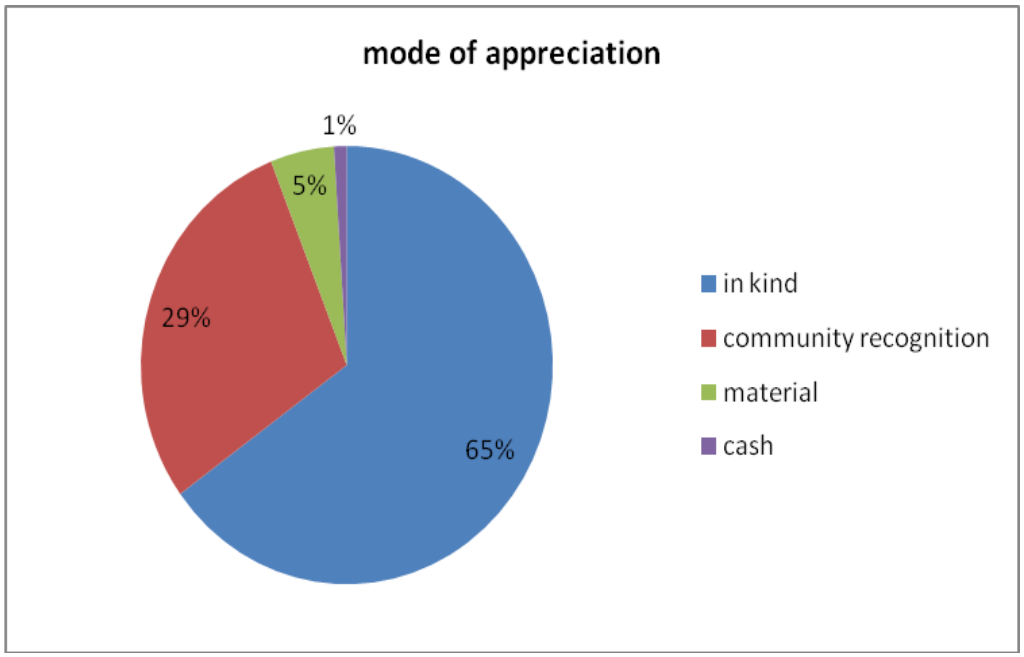


Figure 4.5:Mode of community appreciation

From bivariate analysis community incentives ($\chi 2=9.465$, df=4, p=0.050), community means of appreciation ($\chi 2=4.835$, df=4, p=0.305) and community support ($\chi 2=0.037$, df=1, p=0.848) had no statistical significance in relation to performance of CHWs in delivery of level one health services. However communication (P<0.001) was statistically significant with performance increasing with number of *barazas* held (table 4.7).

4.5.1.: Norms and lifestyle

Safety and security are key factors to the survival of individual, families and society in cosmopolitan society especially slum setting where there are several competing interest. Reception and acceptance are cross cutting challenges and are common in the community. The entry of CHWs into the estates and people house is skeptically accepted even with badges and security escorts. From several FGDs, safety, security, accessibility

and acceptance are critical factors in the performance of CHWs in delivery of level one health services. This was summarized in the discussant quote

> *One FGD discussant concluded: We are not well received in the community; it appears there are skepticism, discrimination and fear among the community residents on visitors. For instance people accept person who speak their language and invitation inside people rooms is very limited. In fact getting quality attention and time is a big dream".*

Secondly the area residents are not permanent and move periodically to different estate subject to the sources of livelihood; rent and some are hardly found in the house especially male residents as was narrated by one discussant.

> *An FGD discussant:said, "this job is very good, we do a lot of good things but our clients are mobile, rare and enlightened. We are not well received in the community; sometimes you only meet children and house helps in the house. Meeting the decision makers in the estate is very rare and when available they are engaged'.*

4.5.2.Traditional practices

The area comprised of cosmopolitan society characterized by diversified Culture, Beliefs and Practices. In a country with liberalized economy and freedom of worship, the community still subscribes to Christianity, Islam and other African churches. From FGD discussions, the practices of the religion were tricky and competed with the implementation of some of the community strategy especially the uptake of child birth notification and family planning. This was elaborated by one informant.

One focal person aluded*: Some practices especially from religious and traditional perspective complicate CHWs work. The uptake of CHWs services especially visiting house hold, uptake of contraception for family planning and feeding practices compete with religious interest."*

4.5.3.: Beliefs

The use of traditional medicine and other non conventional medicine in the management of common illness remains common and wide spread in the informal settings. This may be attributed to cultural values, low income and accessibility. For instance, from qualitative view most FGD discussants advocated for the the use of herbs in the treatment of malaria in the community

One FGD discussants *said that "Our parents treated the children with medicine from local medicine men due to financial and religious challenges like praying for the sick to get well ".*

4.5.4.: Community dynamics

The study area was a peri-urban and slum based inhabited by diverse people from all corners of Kenya with the majority being Kikuyu, Kamba, Luos and Luhyas. With this diversity: the lifestyle, customs and interests conflict and compliment another especially in the implementation of social development.

One discussant candidly commented…."*This is a cosmopolitan society. This means interaction and socialization is limited by cultural diversity, language barriers and skepticisms. This complicates the entry of CHWs into the society and endangers lives".*

4.6: The influence of health system factors in CHWs performance

The fourth objective of the research was to determine health system factors that influence performance of CHWs in the delivery of level one health services. These factors included training, type of training, period of training, supplies, seminars as refresher courses, support supervision, payments as rewards and use of feedback information. Type of training ($\chi2=0.043$, df=1, p=0.835) in general had no statistical significance to performance as shown in table 4.8. However, excerpts from KII suggest that training of CHWs enhances their performances with one key informant summiting as in the caption below.

A member of DHMT (the district surveillance coordinator) reported that "Since their selection, nomination and training of CHWs, my work was made easy. With their contacts, I am informed of the trends of health issues and challenges in the estates. With their support the births and deaths reports have been enhanced".

The period of community strategy training was statistically significant ($\chi2=6.502$, df=2, p=0.039) to performance. Refresher course ($\chi2=7.087$, df=4, p=0.131) and period of refresher ($\chi2=5.22$, df=3, p=0.156) were not significant.

Table 4.8: Health system factors in relation to performance (n=225)

Factors	Performance of CHWs (n) (%) All * (n=225)		Bivariate analysis		
	Yes (%)	No (%)	$\chi 2$	df	P
Day of CHWs training					
1wk	52 (30.6)	118(69.4)	**6.502**	**2**	**0.039**
2wks	19 (52.8)	17 (47.2)			
3wks	7 (36.8)	12 (63.2)			
Refresher course					
HBC	12 (35.3)	22 (64.7)	7.087	4	0.131
PMTCT	40 (33.9)	78 (66.1)			
Disability	14 (56.0)	11 (44.0)			
RH	2 (28.6)	5 (71.4)			
None	10 (24.4)	31 (75.6)			
Period of refresher					
<1wk	42 (41.6)	59 (58.4)	5.222	3	0.156
1wk	22 (29.7)	52 (70.3)			
>1wk	4 (44.4)	5 (55.6)			
None	10 (24.4)	31 (75.6)			

Information is power therefore this study looked at how the CHWs write reports, the reporting structure, period of reporting, feedback reports and how the CHWs use the feedback information in relation to the performance of CHWs in the delivery health service at level one. There was no statistical significance with report writing ($\chi 2$=3.180 df=1, p=0.075), reporting structures ($\chi 2$=5.291, df=4, p=0.259), means of reporting ($\chi 2$=8.871, df=5, p=0.114) period of reporting and feedback reports but how the CHW applied the feedback information was significant ($\chi 2$=12.429, df=3, p=0.006).

Table 4.9: Reporting in relation to performance (n=225)

Factors	Performance of CHWs (n) (%) All * (n=225)		Bivariate analysis		
	Yes (%)	No (%)	$\chi 2$	df	P
Report writing					
Yes	69 (37.3)	116 (62.7)	**3.180**	**1**	**0.075**
No	9 (22.5)	31 (77.5)			
Reporting structure					
CHC	22 (31.4)	48 (68.6)	5.297	4	0.259
CHEW	34 (39.5)	52 (60.5)			
Health facility	9 (42.9)	12 (57.1)			
All the above	4 (50.0)	4 (50.0)			
None	9 (22.5)	31 (77.5)			
Feedback reports					
Yes	54 (38.3)	87 (61.7)	3.442	2	0.17
No	15 (34.1)	29 (65.9)			
None	9 (22.5)	31 (77.5)			

This finding was corroborated by FGD session, in which one discussant summed the importance of feedback information in the caption below.

An FGD discussant summed*: We make reports periodically and take it to the PHOs office and then receive summarized feedback recommendation or briefs in meeting on how to address job challenges.*

The above caption which was confirmed by one key informant who added:

A Public health officer reported that: "The CHW reports are very important to my office. they assists me to identify those whose births have not been notified and registered"

The other health systems factors supplies ($\chi 2$=0.335, df=1, p=0.563), received supplies timely($\chi 2$=2.286, df=2, p=0.319), payment reward($\chi 2$=0.490, df=1, p=0.484), supervision ($\chi 2$=7.610, df=4, p=0.107) and frequency of supervision ($\chi 2$=0.691, df=4, p=0.952) were not statistically associated with the performance of CHWs (table 4.10).

Table 4.10: Relation of Health System Factors with CHW Performance

Health System Factors	**Performance (n=225)**		**Bivariate analysis**	
	Yes n (%)	**No n *(%)**	OR (95% C.I.)	**P** value
Type of Training as CHW				
Trained	71 (34.5)	135 (65.5)	0.680 (0.158-2.922)	0.604
Not trained	7 (36.8)	12 (63.2)	Reference	
Seminar as refresher				
Hbc	12 (35.3)	22(64.7)	1.691 (0.621-4.603)	0.304
Pmtct	40 (33.9)	78 (66.1)	1.879 (0.833-4.240)	0.129
Rh	2 (28.6)	5(71.4)	1.240 (0.207-7.142)	0.814
Disability	2(16.7)	10(83.3)	0.620 (0.116-3.317)	0.576
No refresher	10 (24.4)	31 (75.6)	Reference	
Supervision per month				
None	24 (35.3)	44(64.7)	1.746 (0.352-8.646)	0.495
Once	20 (37.7)	33(62.3)	1.182 (0.242-5.779)	0.836
Twice	15 (32.6)	31 (67.4)	2.187 (0.423-11.316)	0.351
Thrice	15(31.2)	33(68.8)	1.570 (0.303-8.149)	0.591
Four plus	4(40. 0)	6 (60.0)	Reference	
Payment				
Salary	13 (34.2)	25(65.8)	0.29 (0.343-2.006)	0.677
Stipend	19 (35.8)	34(64.2)	0.800 (0.374-1.712)	0.566
allowance	2 (66.7)	1 (33.3)	0.810 (0.056-11.656)	0.877
None	45(34.1)	87(65.9)	Reference	
Received any Supplies				
Yes	8 (25.0)	24 (75.0)	1.801 (0.685-4.734)	0.233
No	70 (36.3)	123(63.7)	Reference	
Reporting				
Daily	2(22.2)	7 (77.8)	1.168 (0.107-12.723)	0.898
Weekly	5 (55.6)	4(44.4)	0.145 (0.016-1.340)	0.089
Monthly and plus	63 (38.2)	102 (61.8)	0.394 (0.078-1.991)	0.260
None	8 (21.1)	30 (78.9)	Reference	
Feedback use				
Planning	26 (33.3)	52 (66.7)	0.689 (0.309-5.930)	0.689
Address gaps	37 (48.1)	40(51.9)	0.727 (0.166-3.184)	0.672
All the above	3(13.6)	19 (86.4)	6.097 (0.875-42.48)	0.068
None	9 (23.7)	29 (76.3)	Reference	

Abbreviations: n, total number of respondents; CI, confidence interval; *Column percentages; OR, odds ratio; Significant odds ratio values (unadjusted) in bold

One twenty three (55%) of the CHWSs were trained by ministry of health while (102) 45% by NGOs. There was no significant relation ($\chi 2$=1.917, df=2, p=0.383) the person who trained the respondent and respondents' performance with 76 (62%) and 70 (69%) among those trained by G0K and NGOs not performing respectively as shown in table 4.11.

Table 4.11: Training in relation to performance (n=225)

Characteristics	**Performance of CHWs (n) (%) All * (n=225)**		**Bivariate analysis**		
	Yes	**No**	$\chi 2$	**df**	**P**
Training					
GoK	47 (38.2)	76 (61.8)	1.505	1	0.220
NGOs	31 (30.4)	71 (69.6)			

Most 194 (86%) of the respondents said they accepted to be CHWs to help the community, 8 (4%) forced by community, 6 (3%) enticed by family members and 14 (6%) fancied the medical profession. One hundred and thirty one (58%) of the respondent reported the training is not adequate and 73 (32%) requested that the training period be increased, another (71) 32% requested the training contents be enhanced while a significant (51) 22% requested for more refresher courses and (30) 13% urged for training on basic curative services training to enable them offer basic care as first aid**.** There was no significant association in respondents requested area of training ($\chi 2$=0.844, df=3, p=0.839); training adequacy ($\chi 2$=4.607, df=2, p=0.100) and performance.

Table 4.12: Areas of training in relation to performance (n=225)

Characteristics	Performance of CHWs (n) (%) All * (n=225)		Bivariate analysis		
	Yes	No	$\chi 2$	df	P
Training					
Training duration	19 (32.2)	40 (67.8)	0.844	3	0.839
Content of training	25 (29.8)	59 (70.2)			
Curative services	20 (44.4)	25 (55.6)			
Refresher course	7 (29.2	17 (70.8			

4.7: Multivariate analysis

A multivariate logistic regression analysis using the backward conditional method was performed on multiple factors to eliminate confounding factors and examine the effect of the three predictive factors which significantly associated (independently) with performance of CHWs in delivery of level one health services at bivariate analysis as presented in the table 4.7. Three factors were found to predict performance of CHW in delivery of level one health services among the CHWs (Table 4.13). Male respondents were 96% less likely to be associated with performance compared with female CHWs in delivery of level one health services practice (AOR 0.968, 95% CI 0.114-1.822).

Table 4.13 : Multivariate analysis results for independent variables (n=225)

Variables	Levels	Exp(β)	95%CI for Exp(β)		P value
			lower	Upper	
Gender	Male	**0.968**	0.114	1.822	**0.026**
	Female	Ref	-	-	-
Period of training	1 wk	**2.207**	0.030	4.384	**0.047**
	2 wks	1.482	-0.818	3.781	0.207
	3 wks	**2.489**	0.174	4.804	**0.035**
	4 wks	Ref	-	-	-
Use of feedback Report	Planning	-0.412	-1.332	0.507	0.379
	Address gaps	**-1.099**	-1.997	0.201	**0.016**
	All the above	0.685	-.0782	2.152	0.360
	No report	Ref	-	-	-

Abbreviations: CI, confidence interval; **Exp (β) (AOR)**, adjusted odds ratio; Significant odds ratio values (adjusted) in bold. Dependent variable: (0 = yes (performer as a CHW), 1= No (non performer as CHW).

Adjusting period of training, CHWs who attended training for one week and three weeks respectively were two times more likely to be non performers as CHWs in the delivery of level one health services at level one (AOR 2.21, 95% CI 0.030-4.384, P=0.047) and (AOR 2.49, 95% CI 0.174-4.804, P=0.035) than respondents who attended training for four weeks and more. Two weeks training was a confounding factor. The use of feedback information was statistically significant and when adjusted for no feedback report, the odds of using the feedback information report to address gaps was highly associated with performance (AOR -1.099, 95%CI -1.997- 0.201, P<0.016).

CHAPTER 5: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0: Introduction

This chapter presents the discussion, conclusions and recommendations of the study on determinants of performances of community health workers in Njiru district Nairobi county; Kenya.

5.1 Discussion

5.1.1 Introduction to the Discussion

This section discusses the findings of a study carried out to find out the determinants of performances of community health workers in Njiru district Kenya. This section relates 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 are analyzed according to the research questions and objectives. The outcomes are further compared with other similar studies and highlights similarities.

5.1.2: Overall Performance of CHWs In The Delivery of Level One Health Services

Apparently from the study findings the performances of community health workers in Njiru district Kenya in the delivery of level one health service was below average. Against two hundred and twenty five Community Health workers (225) who participated in the study, 34.7% (78 CHWs) were rated as performing in the delivery of level one health services. This trend of poor performance was replicated a cross all the community units which participated in the study. Performance rates were also poor in four level one health services per month (house hold visited, community *barazas*, CHWs meetings and number of referred patients) except health education which the CHWs registered average

performance. These poor rates applied to most community units except Canaan which rated well in the household visits. Since CHWs offer more preventive services such awareness during household visit and during *baraza* than curative services.According to Salmen, 2002 this approach may reduce the confidence of the community on CHWs which in-turn reduce effectiveness in attaining targets of referring patients and visiting house. At the same time personal security, accessibility, privacy, diversity and the dynamics of urban life complicates the attainment of these targets whereas health education forums can be achieved through church meetings, social and religious gatherings (Salmen, 2002).

5.1.3: Influence of Demographic factors in CHWs performance

This study found out that female CHWs, age categories of less than 20 and above 50 years, widows and separated CHWs, Muslims were associated with performance. Monthly income, occupation, education, years in services, source of income and nominating party did not influence performance of CHWs.

Age did not affect the performance of CHWs however young (less 20 years) and elderly CHWs (over 50 years) rated highly in performance than the middle aged. This finding on older age performance concurs with (Yoshito *et al.*, 2012) in a cross sectional survey on factors influencing the performance of community health workers in Kisumu West, Kenya who concluded that older CHWs were likely to perform well. This implies that old people have no competing tasks hence are committed and are respected in the community therefore find it easy to work while young people are enthusiastic and eager to perform in the first job assignments. The middle aged CHWs are busy taking care of their young

families, struggling to achieve high ambitions, address social issues and other community demands. However this contradicts with a study by (Ndedda , 2012) in Busia on Social demographic determinants of CHWs performance where CHWs aged 30-40 years were more active.

Gender was related to good performance at level one health services. Majority of the CHWs were females and were more active than males counterparts in all community units except *Silanga* and *Gitarimarigu C.* This finding concurs with (Prasad and Muraleedharan 2007) in a systematic search of literature review of concepts, practice and policy on Community Health Workers reports that female CHW workers are able to deliver care more effectively than male workers at community level in both developing and developed countries. This is probably because females are passionate about family and children welfare despite having many other tasks in the households and community level than males. On the other hand gender factors may facilitate the entry of female CHWs into the society since they are trusted, believed and welcomed than their male colleagues (Pariyo, *et al.*, 2006). This contrasts with the Uganda study (Kallander *et al*., 2006) which found that sex had no relationship with performance.

CHW's level of education had no statistical association with CHWs performance.CHWs with tertiary education and above were less performing compared to those with secondary level of education and below. The trend was the same across all community units and divisions. This conforms with a study from Uganda which showed education is inconsequential on CHWs ability to perform (Kallander, *et al*., 2006 in studies which have explained that CHWs with higher educational qualifications have dreams for

alternative higher employment and therefore their commitment may not be hundred percent. On the other hand CHWs with lower education could learn and enhance their skills in the management of common illness (Ande, Oladepo, & Brieger, 2004) and thereby deliver better care to the community. Therefore career prospects for CHWs and their aspirations do influence their performance. However this contrast with some studies from the Unite States of America (Ballester, 2005) which reported a significant drop out of CHWs due to lack of career prospects. This finding implies that low literacy or illiterate community members should not be discriminated against during selection agreeing with the Saridid study (Kaseje *et al*., 1987) in which education was not a selection criterion for CHWs.

Despite marital status being not significant in relation to CHWs performance, widows and separated CHWs were more associated with performance than singles and married. This finding concurs with Ndedda,2012) in a Cross-Sectional Study in Busia District, Kenya on "Effects of Selected Socio-Demographic Characteristics of Community Health Workers on Performance of home Visits during Pregnancy" which did not find any relationship of marital status with performance.

Religion was not a significant factor however CHWs who were Muslims were rated better in performance than Christians. The importance of religion was also discussed by Gilson et al., who found that, although religion was a significant factor, it was difficult to keep track of the direct role of CHWs religion in performance (Gilson et al., 1989).

Affiliation to institution nominating the CHWs for recruitment was not significant but those selected by government of Kenya performed more than those nominated by NGOs.

This concurs with Ofosu-Amaah (1983) who found in her study of the literature available in 1983 that "turn-over of CHWs is high for a number of reasons, the most important being poor selection and affiliation".

Respondent's main source of income, occupation and monthly average income were not important statistically with middle income CHWs' earners associated with non performance. This can be attributed to the fact that the study was carried in urban setting where all CHW have source of income or are supported by families for their upkeep or do other tasks to supplement their livelihoods.

Majority of the respondents' had served for less than one year in this profession and despite years of services having no statistical value on performance, those who had been in the service for more than five years were associated with performance. This concurs with Ndedda, (2012) study which reported that experienced CHWs were most effective at establishing client satisfaction and client enablements both of which are very important for behaviour change and demand creation for services.

5.1.4: Role of Health Systems factors in Delivery of Level One Health Services

Training, type of training, period of training, supplies, seminars as refresher courses, support supervision, payments as rewards and use of feedback information were the variables taken into consideration in measuring this factor. Supplies elicited significant statistics with delivery of level one health services. Training and type of training in general had no statistical value in the performance of CHWs but the period of training was important. Performance increased with period of training. Those who had attended

refresher courses for more than three weeks were six percent less likely to perform compared to those who had trained for more than four weeks. The argument is supported by another study done in Malawi and Uganda on non-randomized community trials (WHO 2007). Refresher course was not important however those who attended IYCF as refresher course were more performing than those who had not attended any refresher course. This findings contrast with a national survey on CHWs in the US which suggested that on job-training help CHWs overcome difficulties in understanding illnesses (Kash, May, & Tai-Seale, 2007).

Payment as an incentive to performance was not statistically significant; however functional allowance induced the CHWs to perform than salary and stipend. Two thirds of those who received functional allowance scored highly in the delivery of level one health services. This agrees with a WHO article ID: BLT.11.086710. Motivation was the key challenge hindering the delivery of level one service among the CHWs. However this contrasts a study in Nigeria by (Khan *et al*., 2006) on reasons for high CHWs turnover as due to; low salaries, lack of support for personal development and poor supervision. The issue of motivation may be the reason why CHWs scored poorly in targets requiring personnel input and scored highly in targets with public input such as health education forums.

Constant receipt of supplies had no statistical significance in delivery of level one health services with equal proportion of those who received constant supplies and those who did not, not performing. This may justify the poor rate of performance since supplies

facilitate service delivery and at the same time explain why services based on knowledge dissemination are rated highly than supply based. This may be because the CHWs use home visit to deliver personal and private services while public messages are relayed through different channels.

Reporting was not statistically significant but the use of feedback information was, with those who reported weekly performing well than those who reported daily or monthly. Those who reported weekly performed probably because the feedback they received was frequent and addressed each individual challenges encountered in the course of their work whereas those who reported monthly delivered poorly due to delay of feedback which would have addressed their challenges and those who reported daily were mainly committed to the reports rather than deliverly of services. This feedback information assisted the respondents to address gaps within their mandate. Studies for example in Columbia have also shown that “feed back and rewards from the community” are more significant in the overall motivation and performance of CHWs (Robinson & Larsen, 1990). However this feedback was technically based since it was reported to supervisors but the role of the community remains critical trust and confidence issues, which this study could not conclusively address due to methodology challenges and scope of the study.

Supervision and number of supervisory visits per month had no significant value in relation to delivery of level one health services. Both none supervised and supervised CHWs rated equal in performance However support supervision increased CHWs morale

and confidence. This concurs with a study on Community based Distributors of contraceptives in Ethiopia (WHO, 2009).

5.1.5: Community factors in relation to CHWs performance in health service delivery

Community factors included were: support, norms, values and recognition, community appreciation, incentives and security. The majority of the respondents reported receiving community support with most being appreciated in kind. There was a similar performance among those who received support and those who did not. Appreciation by community, incentives; means of appreciation and source of support had no positive impact with CHWs performance at level one. This agrees with another study done in Bangladesh where CHWs felt that they are needed and appareciated by the community (Rahman et al., 2010). However sustaining the motivation of CHWs to function with commitment and effectiveness, remain a critical challenge as the experimentation in Parinche (FRCH-PUNE Project) (Antia & Bhatia, 1993) and SEARCH (Shankar 2011) (Bang et. al., 1994) (Gryboski, Yinger, Dios, Worley, & Fikree, 2006) which reported that it is the degree of trust and confidence of the community members that CHWs have gained over a period of time that propel them to work.

Communication is crucial in the performance of CHWs; for instance performance rate increased with number of *barazas* one attended in a month. This concurs with the acknowledgement and emphasizes in the literature that the success of CHW programmes hinges on regular and reliable support and communication (Bhattacharyya et al., 2001). It

is equally acknowledged, however, that improper communication is often among the weakest links in CHW programmes (Ofosu-Amaah, 1983).

Reception, acceptance and safety are central factors in service delivery issues which directly translate to CHWs performance. This can be attributed to the fact the delivery of services relies on some other factors not only community appreciation. Badges and security escort are sufficient but enhanced cordial reception through awareness would facilitate easier and faster entry to the community. Secondly people are enlightened and skeptical of CHW services. Accessibility and security are cross cutting challenge reported by the respondents. Keeping track of clients for a long season was a big hindrance in this study with most of the clients relocating periodically probably due to change of employment status, transfers, increased house rent and just change of estates/houses. Secondly finding people in their house day time is a nightmare and visiting them in the night is unrealistic unless it is communally announced and done in groups.

The language barrier and nepotism is common with clients accepting and inviting CHWs from their own community/tribe. Religious practices and perceptions are a big challenge in adoption of a basic community health strategy such as family planning and use of latrine. For instance some traditions religion restricts the sharing of latrines by elders and children while others complicate adoption of feeding practices.

This study reports that the use of alternative medicine is common and wide spread in informal areas of this study. These practices and subscriptions to alternative medicine may compliment and at the same complicate the uptake of CHWs services. This may be

because the community will resort to or consult community health workers when they do not respond to their first line treatment (alternative medicine).

The study was carried out in a cosmopolitan and diverse society characterized by different lifestyle, customs and livelihoods. These factors limit the community interaction and complicate the entry of CHWs in the society.

5.1.6: Overall performance of CHWS in the delivery of level one health services

Despite CHWs understanding their role and its significance to health outcomes, this study findings show the performance of CHWs in Njiru district Nairobi County, Kenya as below average. The performance was low in the rate of delivery of key level one goals per month that is referral of patients; number of houses visited; CHWs meetings; number of *Baraza*, however the target of health education registered encouraging average results.

5.1.7: Demographic factors in CHWs performance

Various demographic and socio-economic factors were associated with CHWs performance. Young and old CHWs, female gender, Muslims affiliated, widowed/separated and long term serving CHWS influenced the performance of CHWs in this study. Monthly income, occupation, education and source of income were associated with performance of CHWs.

5.1.8: The Role of Health Systems factors in the CHWs Performance

Study finding show that Period of training, type of refresher course, field allowance as motivation, reporting weekly and use of feedback information were key determinants in the CHWs performance. However training in general, type of training, supplies, payment

of stipend and salary, supervision, number of supervisory visits per month, reporting daily and monthly were different in relation to CHWs performance.

5.1.9: Community factors in relation to CHWs performance in health service delivery

Communication, reception, acceptability, accessibility, safety, clients' stability, nepotism, religious practices and perceptions, cultural norms & beliefs, complimentary medicine, diversity, lifestyle and social class were positively associated with CHWs' performance in this study. Appreciation by community, incentives; means of appreciation and source of support had a negative impact on CHWs performance at level one.

5.2: Conclusions

The conclusion is presented thematically based on the major variables that were examined The study findings indicate that the performances of community health workers in Njiru district Kenya in the delivery of level one health service was below average. The performance was low in four parameters that is- referral of patients; number of houses visited; CHWs meetings; number of *Baraza*. There was however positive results in the target of health education.

From this study, CHWs of young and old age; female gender; Muslims religion; those widowed/separated and long serving performed

In Community factors- communication, community reception, acceptability, accessibility, safety, clients' stability, nepotism, religious practices and perceptions, cultural norms &

beliefs, complimentary medicine, diversity, lifestyle and social class were positively associated with CHWs' performance in this study.

The Period of training, type of refresher course, field allowance as motivation, reporting weekly and use of feedback information were found to be key health factors in the performance CHWs in the study.

5.3: Recommendations

Recommendations are specified for policy makers, employers, CHWs and for further research.

5.3.1: Policy recommendation

- From this study the implementation and realization of the key CHS target in Peri-urban setting is challenging. This may be because the CHWs or the clients are not permanent residents of the area. The key stakeholders led by the ministry of public health and sanitation, the city council of Nairobi and NGOs need to develop a clear contextualized CHWs guideline tailored for Peri- urban settings. The targets can be community and group based. Where possible the strategy to be developed may incorporate landlords, caretakers, small businessmen.

- Since female CHWs are more active, this study recommends a policy-shift in Kenya to encourage male CHW to scale up delivery of health services at community level.

5.3.2: Programs level

- Since accessibility, acceptability and safety are cornerstones in attaining CHS set targets in the district and the majority of the clients are migrants from rural areas in

the district by employment or through relatives, this study proposes enhancing partnership with local religious leaders, security groups, welfare team, NGOs and landlords in the implementation of CHS. Joint works plans need to be developed to facilitate liaison.

- For this study active CHWs were young, aged and of the female gender, therefore there is need to give more attention in the selection and training of the CHWs who were young, above 45 years and be gender biased as they appear much more committed.

- It came out clearly that CHWs who submitted their reports weekly performed very well compared to those who reported daily and monthly, therefore there need is to develop a system in which all CHWs report weekly.

- Since specific type of refresher course seems to entice CHWs to perform, this study recommends the development of specific CHS refresher course tailored to meet the goals of CHS be developed .

- There is need to scale up the recruitment and training all the Community health Committees as they play a pivotal role in supervision and supporting CHWs in the delivery of level one health service.

- Given that the study comprised female majority CHWs and female CHWs were more active than their male counterparts, there is need to develop an awareness

program encouraging male to join CHWs family and a similar program to educate the male CHWs to scale up their commitment in CHS affairs.

- The strong role of norm, practices, traditions and alternative medicine in the management of common ailments calls for public intervention programs on the dangers and consequences of the retrogressive cultures which employ unconventional methods.

- The use of alternative medicine should be critically evaluated and its positives incorporated into community health strategy.

- Partnership and or synergy, as an approach of enhancing CHW performance among all stakeholders is recommended as the way forward.

5.4:Suggestions for further research

- This study was based on both peri-urban and slum set up. There is need to conduct a similar study in an upper class area and compare findings with those found in this study.

- Since the use of alternative medicine is prevalent in Njiru district, it's worth assessing the trend, practices and the results of this alternative medicine and to establish the extent to which this has affected community health decision among the Njiru residents.

- Most CHWs who attended infant and young child health training rated highly in performance in spite this study which is not directly linked with CHS there is needed to conduct a research to establish if there could be an association between these CHWs and practicing TBAs. This may explain the uptake of unskilled delivery service in slum areas.

- The role of community feedback would be critical in CHS when explored further. Therefore a study should be done to assess the CHWs' information system. Further studies comparing the same intervention delivered by different types of health care workers would help determine whether the CHW adds a unique benefit to the health care delivery system.

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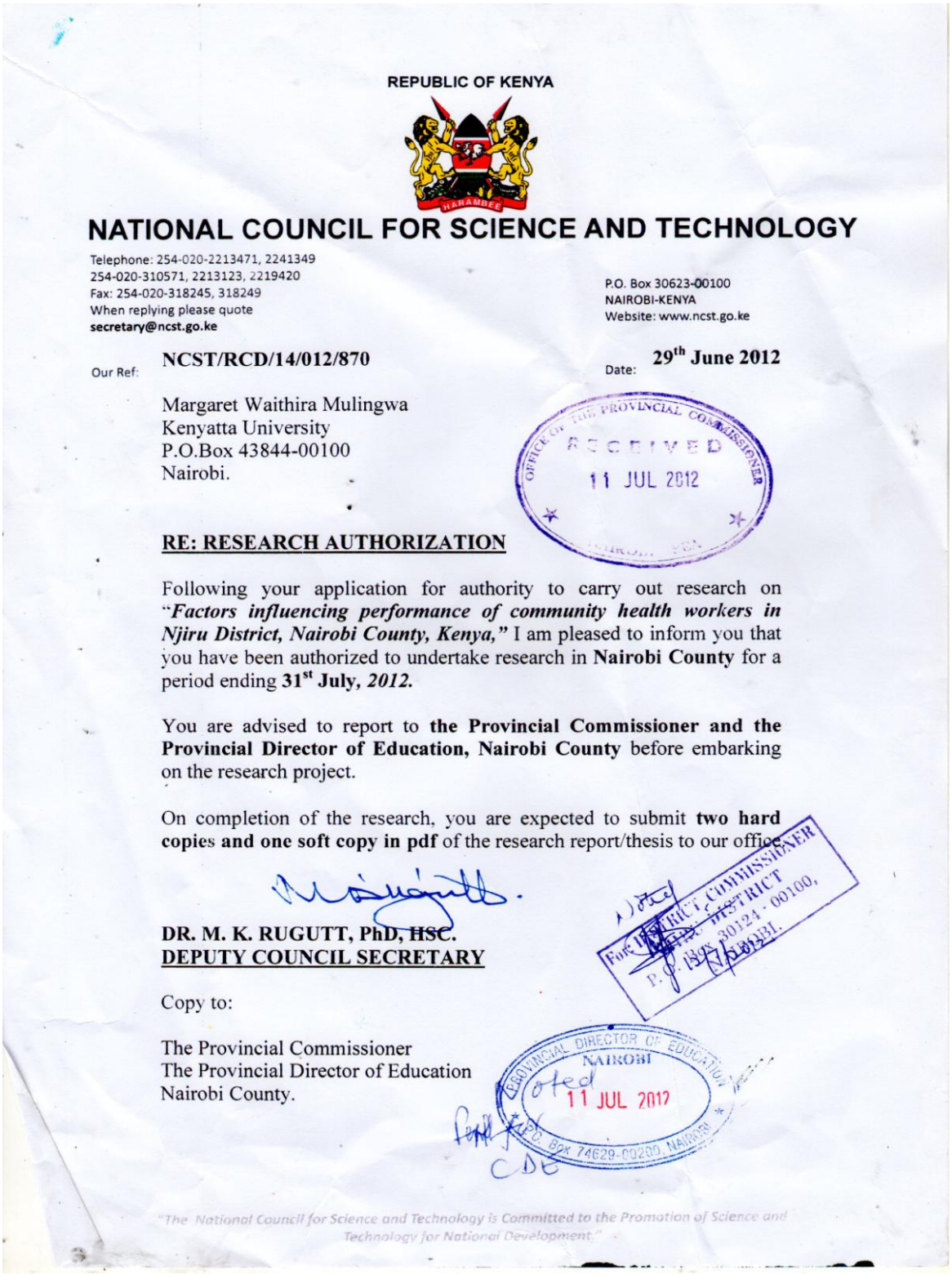
APPENDIX 1: MINISTRY OF HIGHER EDUCATION AUTHORIZATION



REPUBLIC OF KENYA

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NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/RCD/14/012/870**

Date: **29th June 2012**

Margaret Waithira Mulingwa
Kenyatta University
P.O.Box 43844-00100
Nairobi.

OFFICE OF THE PROVINCIAL COMMISSIONER
RECEIVED
11 JUL 2012

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "***Factors influencing performance of community health workers in Njiru District, Nairobi County, Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for a period ending **31st July, *2012.***

You are advised to report to **the Provincial Commissioner and the Provincial Director of Education, Nairobi 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.

DR. M. K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

Copy to:

The Provincial Commissioner
The Provincial Director of Education
Nairobi County.

FOR DISTRICT COMMISSIONER
NJIRU DISTRICT
P.O. BOX 30124 - 00100,
NAIROBI.

PROVINCIAL DIRECTOR OF EDUCATION
NAIROBI
11 JUL 2012
P.O. Box 74629-00200, NAIROBI

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development."

APPENDIX 2: NJIRU MEDICAL OFFICER OF HEALTH AUTHORIZATION

Telegrams, Nairobi
Telephone:2710260/1 Nairobi
Fax:
E-mail:
When replying please quote

Ministry of Local Government

NAIROBI HEALTH MANAGEMENT BOARD,
LADY NORTHEY, STATEHOUSE ROAD,
NAIROBI

Ref: DMOH/NJIRU/1/56/2012

24th July 2012

TO WHOM IT MAY CONCERN

RE:AUTHORITY TO CARRY OUT RESEARCH IN NJIRU DISTRICT

Ms Margaret Mulingwa a student at Kenyatta University pursuing a master's degree in Public Health has been authorized to carry out a research in Njiru district pertaining to community health workers. Please accord her the necessary assistance.

Thanking you.

Dr. Lucina Koyio
District Medical Officer of Health – Njiru district

DISTRICT MEDICAL OFFICER OF HEALTH
NJIRU DISTRICT
Date 24/7/2012
P.O Box NAIROBI

APPENDIX 3: THE RESPONDENTS' CONSENT FORM

The name of the researcher is **Margaret Mulingwa** a master's student at Kenyatta University School of Health Science's department of community health,
The purpose of this research is to identify determinants influencing performance of community health workers' in Njiru District. A questionnaire, an in-depth interview guide and a focused group discussion guide will be used to obtain the necessary information. The duration of the interview will be 25-30 minutes.
The study will assist the Government, communities and other partners in policy formulation, implementation, monitoring and evaluation in community strategy. The findings will help the community health workers in improving health care delivery at community level.
The information given by all those involved in the study will be confidential and privacy will be safe guarded. The presentations of the results will not display the participants name or any other characteristic that would make them identifiable
The study poses no risks to the participants, there will be no payments to the participants and there will be no anticipated cost for the participation.
As a participant you have a right to participate, decline or terminate the interview at any point during the interview session.
Would you like to participate in this study? (if no, appreciate and move on to next participant).The appropriate response:

Yes	No
☐	☐

Name of participant…….. (Optional)
Signature ……
Date …….
Contacts:
In case of any questions please contact
The Researcher: Margaret Mulingwa
P.O Box 6081-01000 Thika
Tel 0721737917

OR Supervisors: .Dr George Ochien'g Otieno
P.O Box 43844-00100 Nairobi
Tel 0719506770
Dr John Paul Oyore
P.O Box 43844-00100 Nairobi
Tel 0722536412

OR Kenyatta University Ethics Review Committee
P.O Box 43844-00100 Nairobi
Email: kuerc.chairman@ku.ac.ke
Website:www.ku.ac.ke

APPENDIX 4: QUESTIONNAIRE

Questionnaire on Performance of Community Health Workers in Njiru District

August 2011

Identification Details

Division _____ location_____

Community unit_____

Name of Interviewer _____Sign _____Date_____

SECTION A: SOCIO-DEMOGRAPHIC DATA

1. Sex

(a) Male [ ] (b) Female [ ]

2. Age

a) Below 20 years [ ]

b) 20-29 Years [ ]

c) 30-39 Years [ ]

d) 40-49 Years [ ]

e) 50-59 Years [ ]

f) 60 + Years [ ]

3. Marital status

a) Single [ ]

b) Married [ ]

c) Widowed/Separated [ ]

4. Level of education

d) Primary Completed [ ]

e) Primary Incomplete [ ]

f) Secondary Completed [ ]

g) Secondary Incomplete [ ]

h) Tertiary [ ]

i) None [ ]

5. Occupation

a) None [ ]

b) Business [ ]

c) Formal employment [ ]

d) Farmer (peasant) [ ]

e) Farmer (Large scale) [ ]

f) Others specify……

6. Religion

a) Christian [ ]

b) Muslim [ ]

c) Hindu [ ]

f) Others specify……

7. What is your main source of income?

(a) Salaried [ ]

(b) Farmer [ ]

(c) Self-employed [ ]

(d) Casual Labour [ ]

(e) Supported by Family [ ]

(f) Others, Specify……

8. What is your Monthly income in Kshs

(a) 500 – 1500 [ ]

(b) 1501 -2500 [ ]

(c) 2501 – 3500 [ ]

(d) 3501 - 4500 [ ]

(e) 4501 - 5500 [ ]

(f) 5501 – 6500 [ ]

(g) 6501 - 7500 [ ]

(h) Above 7500

9. How long have you practiced as a CHW

(a) Less than six months [ ] (b) six months -1Year [ ] (c) 1 -2 Years [ ]

(d) 3 -4 Years [ ] (e) Above 5 Years [ ]

SECTION B: HEALTH SYSTEM FACTORS

10. Have you attended any training as a community Health worker?

Yes [ ]

No [ ]

11. If yes,

(i) Which one?

(a) Community Strategy [ ] (b) Community dialogue [ ]

(c) Home Case Management [ ]

(d) Others specify……

(ii) For how many days was the training?

(a) 1 week [ ](b) 2 Weeks [ ] (c) 3 Weeks [ ] (d) 4 Weeks [ ]

(iii) Who trained you as a Community Health Worker?

(a) GOK [ ]

(b) AMR EF [ ]

(c) APHIA II [ ]

(d) Other [ ]

(iv) Have you attended any other refresher Course?

(a) Yes [ ] (b) No [ ]

(iv) If yes, for how long

a) < 1 Week [ ] (b) 1 Week [ ] (c) > 1 Week [ ] (d) N/A [ ]

(V) Name the refresher course attended

(a) Home Based Care [ ] (b) Prevention of Mother To Child Transmission [ ]

(c) People with Disabilities [ ] (d) Reproductive Health [ ] (e) Infant and Young Child feeding [ ] (f) Breast feeding [ ] (g) N/A [ ]

12: Do you feel that the training that you have undergone is adequate for you to perform your duties as a CHWs?

a) Yes [ ]

b) No [ ]

13: Which areas do you feel should be improved in the training

a) During training

b) The content of the training

c) Areas covered to include curative services

d) Introduction of refresher courses

14: How many times have you been supervised in the last one month?

a) None [ ]

b) 1 time [ ]

c) 2 times [ ]

d) 3 times [ ]

e) More than 3 times [ ]

15: Who is mainly involved in supervising you?

a) CHC members [ ]

b) CHEW [ ]

c) MOPH&S [ ]

d) NGO [ ]

16: Do you feel that the supervision you get is enough?

a) Yes [ ]

b) No [ ]

17: Do you get feedback from your supervisor?

a) Yes [ ]

b) No [ ]

18: In your opinion does your supervisor give you adequate support and attention?

a) Yes [ ]

b) No [ ]

19**:** i) Do you receive any cash payment?

a) Yes [ ]

b) No [ ]

ii) If yes above from who

a) GOK [ ]

b) NGO/Donors [ ]

c) Community [ ]

d) Others specify ……

iii) What kind of cash payment do you receive?

a) Salary [ ]

b) Stipend [ ]

c) Allowance [ ]

d) Others specify [ ]

iv) How often is it paid [ ]

a) Daily [ ]

b) Weekly [ ]

c) Monthly [ ]

d) After a meeting [ ]

e) Others specify [ ]

v) (Do you feel that the payment is adequate for the work that you do as a CHW?

a) Yes [ ]

b) No [ ]

20. Which of the following in kind incentives are you receiving currently?

a) Community recognition [ ]

b) Management of a commodity kit [ ]

c) Training Supervision [ ]

d) Career advancement opportunities [ ]

e) Tokens [ ]

f) Chickens, [ ]

g) Provision of a bicycle [ ]

h) Others specify……

21: Which of the following incentives do you think would motivate you the most as a CHW?

a) Salary /stipend [ ]

b) Allowance/Reimbursement [ ]

c) Provision of supplies and commodities [ ]

d) Intensive training and refresher courses [ ]

e) Recognition by the community [ ]

22: In your opinion a CHW should be

a) A volunteer entirely [ ]

b) Receive a salary [ ]

c) Receive a stipend [ ]

d) Get allowances [ ]

e) Receive any kind incentives [ ]

23: Who would you recommend to deal with the remuneration of a CHW?

a) CHC [ ]

b) GOK/MOH [ ]

c) Community [ ]

d) Donors [ ]

e) Others Specify ……..

24: Is there a system in place regarding your regular ordering of equipment and supplies

a) Yes [ ]

b) No [ ]

ii) Have you had stock out of your commodities kits for the last 6 months?

a) Yes [ ]

b) No [ ]

25. Was the kit replenished on time?

a) Yes [ ]

b) No [ ]

Information system and flow

26. Do you write reports on what you do for the community?

(a) Yes [ ] (b) No [ ]

If yes, where do you take your reports?

(a) CHC [ ] (b) CHEW [ ] (c) Health Facility [ ]

(d) All of the above [ ]

27. Where do you record your reports?

(a) Paper [ ] (b) Note book [ ] (c) Register [ ] (d) Chalk board [ ]

(e) CHW Log book [ ] (f) None [ ]

28. How often do you submit your reports?

(a)Daily [ ] (b) Weekly [ ] (c) Monthly [ ] (d) Quarterly [ ]

(e) Annually [ ] (f) Never [ ]

29. Do you share your reports with the other CHWs and CHCs before submitting?

(a) Yes [ ] (b) No [ ]

30. Do you get a feedback after reporting?

(a) Yes [ ] (b) No [ ]

31. How does the information you get assist you as a CHW

(a) Planning [ ] (b) Address gaps found [ ] (c) All the above [ ] (d) N/A [ ]

Section three: Community factors

32: Does the community appreciate your work?

a) Yes [ ]

b) No [ ]

33: if yes, how does the community appreciate your work?

a) Thanking you after serving them [ ]

b) Tokens, chicken, food [ ]

c) Cash payment [ ]

d) Community recognition [ ]

e) Other specify…….

34: As a CHW do you get any support to facilitate you work (a) Yes [ ] (b) No [ ]

35. If Yes, from who

(a) Spouse [ ](b) Family [ ] (c) Community [ ] (d) Provincial administration [ ]

36. Who selected you as a community Health Worker**?**

a) Community [ ]

b) CHC [ ]

c) MOH [ ] Others specify …….

Section D; Performance of CHW in health Service Delivery at level one

37. How many households did you visit last month?

a) 1-5 [ ]

b) 6-10 [ ]

c) 11-15 [ ]

d) 16-20 [ ]

e) 21-25 [ ]

f) Over 26 [ ]

38: How many health education forums did you conduct last month?

a) None [ ]

b) Only one [ ]

c) two to four [ ]

d) five and above [ ]

39: How many barazas did you address last month?

a) None [ ]

b) Only one [ ]

c) two to four [ ]

d) five and above [ ]

40: How many CHWs meeting do you attend in a month?

a) None [ ]

b) Only one [ ]

c) two to four [ ]

d) five and above [ ]

41: How many clients did you refer last month?

a) None [ ]

b) Only one [ ]

c) two to five [ ]

d) six and above [ ]

Knowledge of Disease conditions

42. Mention 3 commonest Diseases in this community unit

(a) Malaria [ ] (b) URTI [ ] (c) Amoeba [ ] (d) Diarrhoea [ ] (e) Pneumonia [ ]

(g) Others Specify .....

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

a) Yes [ ]

b) No [ ]

44. i) In the last one month have you missed any CHWs meeting?

a) Yes [ ]

b) No [ ]

ii) If yes what was the main reason for you failing to attend the meeting?

a) Financial constraints [ ]

b) Long walking distances [ ]

c) Sickness [ ]

d) No reason [ ]

e) Others specify……

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

a) Yes [ ]

b) No [ ]

ii) If yes were you given feed back?

a) Yes [ ] b) No [ ]

46. Why did you become a CHW?

a) Felt the need to assist the Community [ ]

b) Encouragement by the community [ ]

c) Encouragement by the family members [ ]

d) Hope for recognition in the community [ ]

e) Hope for payment of a salary, stipend or in kind tokens [ ]

f) Hope for advancement of career in the medical field [ ]

47. Would you encourage anybody to enroll as a CHW?

a) Yes [ ] b) No [ ]

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

a) Totally unsatisfied (1) [ ]

b) Not satisfied 2 [ ]

c) Fairly satisfied 3 [ ]

d) Satisfied 4 [ ]

e) Very satisfied 5 [ ]

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

a) Lack of supplies [ ]

b) Lack of transport [ ]

c) Lack of support from the community [ ]

d) Lack of supervisors support [ ]

e) Financial constraints [ ]

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

a) Yes [ ]

b) No [ ]

51. What in your opinion is the main reason that would make a CHW to stop being active?

a) Discouragement by family members [ ]

b) Inadequate compensation for work done [ ]

c) Inadequate appreciation by the community [ ]

d) Inadequate support and supervision [ ]

e) Uncooperative CHC members [ ]

f) Financial constraints [ ]

g) Inadequate training [ ]

52. On average, how many days in a month do you give to community health work?

(a) 0 – 5 [ ] (b) 6 – 10 [ ] (c) 11 – 15 [ ] (d) 16- 20 [ ] (e) 21- 25 [ ]

(f) 26 – 30 [ ]

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

APPENDIX: 5 IN-DEPTH INTERVIEW GUIDE

(Tick as appropriate)

1. Do you know of CHWS –

a) Yes [ ]

b) No [ ]

2. Are you served by one

a) Yes [ ]

b) No [ ]

3. Do you know her/him by name-

a) Yes [ ]

b) No [ ]

4. Which services does she/he give you

a) Health education [ ]

b) Curative services [ ]

c) Promotive services [ ]

d) Inspection services [ ]

5. How regular does he /her visit you

(a)Daily [ ] (b) Weekly [ ] (c) Monthly [ ] (d) Quarterly [ ]

(e) Annually [ ] (f) Never [ ]

6. Are you satisfied by her/his services

a) Yes [ ] b) No [ ]

Thank you for your participation

APPENDIX: 6 FOCUSED GROUP DISCUSSION GUIDE

FGD number……

Division…….Location…….

Community Unit……

Interviewer code……. Date of FGD……

We are conducting a study on the Performance of CHWs in health services delivery in Njiru district. We will be asking you different issues about your overall experience, challenges and possible recommendations, in your work as CHWs.

In general what factors influence your performance as CHWs?

1. Are there personal/family attributes which influence your work? e.g. marriage
2. How effective is governance of Health service delivery at level one?
3. Are there Community factors which influence your Performance (cultures- norms traditions, beliefs and security)?
4. Kindly comment on the support, supervision, training, supplies and financing your receive as CHWs
5. Any others issues?

I thank you most sincerely for sharing your opinion

APPENDIX: 7 KEY INFORMANT GUIDE

Key informant guide

Introduction:

I am a student from Kenyatta University doing a research on the performance of community health workers in Njiru district. An important part of the research is to understand the environment in which the CHWs are operating, as well as what the community's strengths and challenges are. We are interviewing key resources persons in the community as part of an information-gathering process. The themes that emerge from the interviews will be used to generate information for mitigation process. The interviews will be strictly confidential and will only take 45 minutes. With your consent I request to start the interview.

Question

What do you think are the factors influencing the Performance of CHWs in health services delivery in Njiru district?

i. Any personal characteristics associated with Performance CHWs in Njiru District?

ii. Any health systems factors that influence Performance of CHWs in Njiru District?

iii. What are the community factors associated with Performance of CHWs in Njiru District?

Closing Remarks

Are there other people you think we should talk to concerning the same? Have we covered everything you think is important?

Debriefing:

Thank you very much for your time. Your knowledge and insights will be very helpful and valuable. When the process is complete, the researcher would be happy to share a summary of the findings. Would you like to receive a copy?

Thank you again

APPENDIX: 8 LIST OF NAMES OF RESEARCH ASSISTANTS

1. Alice Mwania
2. Miriam Kirore
3. Obadiah Chesire
4. Emilio Nyabende