

**FACTORS INFLUENCING THE PERFORMANCE OF COMMUNITY  
HEALTH WORKERS IN NANDI HILLS SUB-COUNTY**

**BY**

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## DECLARATION

This project report is my original work and has not been presented for an award in this university or any other university.

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## **DEDICATION**

I dedicate this work to my parents Mr and Mrs John Chepkwony whose sacrifice, love, encouragement and financial support have gotten me this far.

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## LIST OF ABBREVIATIONS

|              |  |
|--------------|--|
| <b>AIDs</b>  | Acquired Immune Deficiency Syndrome      |
| <b>AMREF</b> | American Medical Research Foundation     |
| <b>CBDs</b>  | Community Based Distributors             |
| <b>CBSVs</b> | Community Based Surveillance Volunteers  |
| <b>CCCs</b>  | Community Care Coalitions                |
| <b>CHEWs</b> | Community Health Extension Workers       |
| <b>CHMT</b>  | Community Health Management Team         |
| <b>CHS</b>   | Community Health Strategy                |
| <b>CHWs</b>  | Community Health Workers                 |
| <b>CUs</b>   | Community Units                          |
| <b>DHMT</b>  | District Health Management Team          |
| <b>FGD</b>   | Focus Group Discussion                   |
| <b>GoK</b>   | Government of Kenya                      |
| <b>HFA</b>   | Health for All                           |
| <b>HSS</b>   | Health Systems Strengthening             |
| <b>HW</b>    | Health workers                           |
| <b>ICCM</b>  | Integrated Community Case Management     |
| <b>KEPH</b>  | Kenya Essential Package for Health       |
| <b>KII</b>   | Key informant interview                  |
| <b>LMICs</b> | low and Middle Income Countries          |
| <b>MDGs</b>  | Millennium Development Goals             |
| <b>MOH</b>   | Ministry of Health                       |
| <b>MoPHS</b> | Ministry of Public Health and Sanitation |
| <b>NGOs</b>  | Non-governmental Organization            |
| <b>PHC</b>   | Primary Health Care                      |
| <b>PNG</b>   | Papua New Guinea                         |
| <b>SPSS</b>  | Statistical Package for Social Sciences  |
| <b>WHO</b>   | World Health Organization                |

## 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. In Kenya, CHWs workforce was adopted as a component of cost effective strategies in addressing the health care needs of underserved communities. 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 the burden of disease continues to increase in magnitude and diversity and relatively little scientific evidence is available to answer basic questions notably the determinants influencing the performance of CHW. 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 purpose of this study was to investigate the factors influencing performance of CHWs in Nandi Hills sub-county. The objectives of the study were to assess the influence of social-cultural, health system practice and policy, environmental and economic factors on the performance of CHWs in Nandi-Hills sub-county. A descriptive research design was used. Both quantitative and qualitative data collection methods were used. Systematic sampling method was used to identify the respondents. Quantitative data was collected from 87 community health workers of which 81 responded to the questionnaires, while qualitative data was collected from community health management team (CHMT), clients (households) and community health extension workers (CHEWs). Data was presented using tables while inferential statistics were computed using regression and correlation. Findings showed that performance of CHWs was low (50-74%). There was strong correlation between socio-cultural factors (0.884<sup>\*\*</sup>) and performance of community health workers. The findings also show that there is a strong correlation (0.799<sup>\*\*</sup>) between health system factors and performance of CHWs. Further, the findings show that there is strong correlation (0.777<sup>\*\*</sup>) between economic factors and performance of community health workers. Finally, the findings show that there is a strong correlation (0.775<sup>\*\*</sup>) between environmental factors and performance of community health workers. There should be improved staffing of the facilities where community units are linked in order to strengthen referrals and linkage systems especially taking into consideration the spatial distribution and population density. This will improve support supervision from CHEWs to CHWs during their community work.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Countries across the globe are striving to achieve universal health coverage. There is a massive shortage of 4.25 million health workers in Africa and Asia, while the distribution of existing health workers within countries is inequitable (World Health Organisation, 2006). The principle of Primary Health Care (PHC) was introduced in the Declaration of Alma-Ata in 1978 (World Health Organization, 1978). PHC had already been promulgated for over three decades as a global strategy for ensuring essential health care for all people. 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 (WHO, 2006). The severe healthcare worker shortage in many parts of the world is among the barriers that need to be addressed to improve primary health services (Kober K, Van Damme W; 2004).

The global policy of providing primary level care was initiated with the 1978 Alma Ata Declaration. The countries signatory to the declaration considered the establishment of a Community Health Worker (CHW) programme as synonymous with the primary health care (PHC) approach. Shortages in human resources for health and evidence that CHWs can significantly contribute to the health of the population by effectively delivering key interventions in primary and community health care have led to a renewed interest in CHW programmes in Low and Middle Income Countries (LMICs) (Bhutta ZA, Lassi ZS, Pariyo G, Huicho L; 2010). Community Health Workers (CHWs) can make a valuable contribution to community development, and more specifically can improve access to and coverage of basic health services to communities. The use of CHW has also been one of the strategies to

address the shortage of health workers, particularly in low income countries (Lehman and Sanders, 2007). However, the review by Lehman and Sanders (2007) showed that although there are some trends, global generalizations about the performances of community health workers are difficult as the topic area and program profiles, structures, focus areas and implementation arrangement are extensive and diverse.

The role of CHWs in sub-Saharan Africa has evolved over time in response to changing health care priorities, disease burdens and shortages of human resources for health (Health Systems Report, 2008). The Health Systems Report (2008) further demonstrate that evidence on CHWs from Gambia, South Africa, Tanzania, Zambia, Madagascar and Ghana were not only cost-effective, but enhanced the performance of community level health programmes.

Kenya, like many countries in sub-Saharan Africa, suffers from a critical shortage of health care workers. Kenya has responded to the shortage by developing the Kenya Community Strategy for Health MOH (2006), a strategy that utilizes lay volunteers CHWs as the foundation for promoting behavior change through health education, earlier case identification, and timely referral to trained health care providers. In choosing this approach Kenya builds on evidence that task sharing is both possible and effective in promoting health behaviors at the community level (Lehmann, 2007). In Kenya, CHWs play a big role in enhancing primary health care services including family planning services. The majority of CHWs in Kenya had been trained by non-governmental organizations (NGOs) in the context of primary health care from the early 80s. However, there has been minimal government support and recognition for CHWs leaving this mainly to NGOs.

The commitment to improve community based health interventions was made with the establishment of the Community Strategy during the implementation of Strategic Plan 11

2005-2010 whose objective was to provide health care services for all life cohorts and socio-economic groups at household and community level. The community strategy places the CHWs as the first level of health care providers. Their main activities include health promotion, disease prevention and provision of basic health care services including Family Planning in the community. CHWs form an entry point into multiple social networks, networks that are essential in order to build the requisite trust and momentum for any type of change in health behaviors.

## **1.2 Statement of the Problem**

The use of community health workers has been identified as one strategy to address the growing shortage of health workers, particularly in low-income countries. Evaluation of community health workers' performance in general, is the focus of much attention at this time, as many countries invest in them as a strategy for the achievement of the millennium development goals (Haines et al., 2007). The effectiveness of Community Health workers (CHWs) has been demonstrated in some studies for example, a CHW programme in India resulted in significant reduction of low birth weight, preterm births and neonatal sepsis.

Understanding the socio-cultural, economic, and health system practice and policies context in which CHW interventions operate is an important precondition for the design of successful interventions. 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 the burden of disease continues to increase in magnitude and diversity and relatively little scientific evidence is available to answer basic questions notably the determinants influencing the performance of CHW. This put to question the performance and thus effectiveness of CHWs as one of the key strategies of health care delivery. It is because of these that the study attempts to examine factors that influence the performance of CHWs in

Nandi Hills sub-county.

### **1.3 Purpose of the Study**

The purpose of the study was to examine the factors that influence performance of community health workers in Nandi Hills sub-county.

### **1.4 Specific Research Objectives**

The study aimed to achieve the following objectives:

- i. To assess the influence of social-cultural factors on performance of CHWs in Nandi Hills sub-County
- ii. To examine the influence of health system practice and policy on performance of CHWs in Nandi Hills sub-County
- iii. To determine the influence of environmental factors on the performance of CHWs in Nandi Hills sub-County
- iv. To investigate the influence of economic factors on the performance of CHWs in Nandi-Hills sub-county

### **1.5 Research Questions.**

The study focused on the following research questions:

- i. What are the socio-cultural factors that influence performance of CHWs in Nandi Hills sub-County?
- ii. Which are health system practice and policy factors influence performance of CHWs in Nandi Hills sub-County?
- iii. How do environmental factors influence performance of CHWs in Nandi Hills sub-County?
- iv. What are the economic factors that influence performance of CHWs in Nandi-Hills sub-county?

## **1.6 Significance of the Study**

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 environmental, cultural, health system factors in relation to performance of CHW.

Therefore there is need to conduct a research on factors influencing the performance of community health workers in Nandi Hills sub-county. 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 is important to establish the factors that influence the performance of CHWs.



### **1.7 Limitations of the Study**

Getting information was a major limitation. This is because most CHWs performance relates to issues of morbidity and mortality which is classified as confidential. The problem was surmounted by acquiring a letter of introduction from the university and the director of medical services in Nandi County.

The researcher relied on self-report surveys to measure respondents' perceptions of performance. This was minimized by conducting focused group discussion for the clients (patients at health facilities).

### **1.8 Delimitations of the Study**

The study sought to investigate the factors that influence performance of community health workers in Nandi Hills sub-county.

### **1.9 Basic Assumptions**

The basic assumption of the study was that by targeting Community Health Workers, the researcher could access respondents who could volunteer to fill in the questionnaires.

## **1.10 Definitions of Terms**

**Community-** a group of people with diverse characteristics who are linked by social ties, share common perspectives, and engage in joint action in geographical locations or settings

**Community Health workers** Community health workers are men and women chosen by the community, and trained to deal with individual and community health problems, working in close relationship with the formal health care system

**Performance of Community health workers** is measured in terms of improvement in health status of the population that CHWs serve, increase in utilization of services provided by them, reduction in wastage of resources, the presence and accessibility of CHWs to community members

**Socio-cultural** A set of beliefs, customs, practices and behavior that exists within a population. International companies often include an examination of the socio-cultural environment prior to entering their target markets.

**Health system** is the organization of people, institutions, and resources that deliver health care services to meet the health needs of target populations.

**Economic** The set of fundamental information that affects a business or an investment's value.

**Environment** includes everything that changes the local environment that community health workers operate in and includes the office layout, catchment area and the level of interaction

### **1.11 Organization of the Study**

The research proposal is organized as follows: Preliminary pages, Chapter One, Introduction, Chapter Two; Literature review, Chapter Three; Research Methodology References, chapter four; Data Analysis, Presentation and Interpretation and chapter five; Summary, Conclusions and Recommendations. Chapter one aims at giving an overview of urgent need to have a research conducted to find out the factors that influence performance of CHW. Chapter two deals with literature reviewed that is relevant to the study. A conceptual framework showing relationship that exists between the identified independent variables was drawn. Chapter three deals with the research design, sampling procedures, research Instruments, data collection procedures, validity and reliability of instruments, data analysis and ethical considerations that will be made while collecting data. Chapter four presents the data as per the objective and gives an interpretation. Chapter five discusses the summary of the findings, the conclusions and the recommendations of the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents literature with regard to study objectives; socio-cultural factors, health system policies and practice factors, environmental factors and economic factors reviewed in order to familiarize with the body of literature and identify any gaps based on which the study will be conducted.

#### **2.2 The Concept of Performance of Community Health Workers**

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). In the 1970s, the importance of community health workers was originally affirmed by the World Health Organization. After the Alma Ata Declaration of 1978, many countries in sub-Saharan Africa began to institutionalize CHW programs as a strategy to extend primary health care to impoverished rural and urban populations and to address the relationship between poverty, inequality and community health (Newell 1975; Standing and Chowdhury 2008; Cueto 2004).

Currently, many actors in the field of global health are reaffirming the crucial importance of community health workers (CHWs) trained to provide primary health care and promote healthy behaviors for their own communities—in achieving public health goals in the context of poverty and weak health systems. For instance, 2011 saw the emergence of the Frontline Health Workers Coalition, a coalition not of workers themselves, but of international organizations seeking to make better use of them. Though there is considerable debate over the value and activities that should be assigned to CHWs, major global health-development institutions proclaim “No Health

Without Health Workers,” identify massive global shortages of CHWs, and call for innovative and evidence-based policies that improve recruitment and retention of community health workforces (WHO 2006; Watt et al. 2011; Bhutta et al. 2010).

The Millennium Development Goals (MDGs) have renewed global attention on human resources management in the health sector and strengthening of health systems. There is some recognition that the present underperformance of health systems and their progress is the result of a “legacy of chronic under-investment in human resources” (Chen et al, 2004). Responses to this ‘health human resources crisis’ have been focused upon quantity and distribution of health workers (HW), their incentives, retention and issues of migration and their effects upon global distribution of HWs (Dolea et al., 2010; Pena et al., 2010; Vujcic et al., 2004). The current health human resource crisis is not just an issue of availability of staff and retention. Motivation and performance of existing HWs is equally important, yet much less attention has been given to these areas particularly the social.

Over the past couple of decades, studies have shown that community health workers (CHWs) can help reduce morbidity and mortality in settings that have traditionally lacked access to health care (Haines AS, Lehmann D, 2007). The intermediation of CHWs in healthcare delivery is widening as they are crucial in increasing universal access to healthcare provision and the attainment of the Millennium Development Goals (Evans DB, Etienne C;2010).

Community health workers are men and women chosen by the community, and trained to deal with individual and community health problems, working in close relationship with the formal health care system (WHO; 2006). They should have basic literacy and numeracy levels. CHWs are considered as a third health service delivery work-force and have evolved with community-based healthcare programmes (Otieno CFK, Ochieng D, Githae MN; 2012). However, their

titles, profiles and deployment vary across countries, conditioned by their aspirations and economic capacities (Perez F, Ba H, Dastagire SG, Altmann M; 2009). 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 counseling, 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).

Community health workers performance is complex and there are multiple factors that influence HWs' willingness to apply themselves to their tasks and be successful in delivering health services (Franco L, Bennett S, Kanfer R: 2002). Individual HW performance relates to competencies and resource availability; however, motivation to deliver health services is also integral to performance and is underpinned by the organizational structure, the socio-cultural environment and individual characteristics of the HWs (Henderson L, Tulloch J: 2008). Most research on HW performance has occurred in high-income countries, whereas little attention has been given to HW performance in developing countries (Anyangwe S, Mtonga C; 2007). CHW performance is described not as an attribute of the individual, but rather as a result of the transaction between organizational factors (organizational culture, support structures, resources and processes), social factors (community expectations, social values and peer pressure) and the individual (Franco LM, Bennett S, Kanfer R, Stubblebine P; 2004).

Social factors, or cultural and community influences, are distal determinants of motivation (Franco LM, Bennett S, Kanfer R, Stubblebine P; 2004). These social factors affect the relative

importance of the different determinants of performance and the relationships between them, and potential impact on the provision of health services particularly for those working in the HIV and AIDS (Smith JH, Whiteside A; 2010). For example, HW performance has potential to be influenced by the high level of donor attention on HIV prevention and care; community expectations of how services should be delivered; and the personal interactions HW have with clients (Mbilinyi D, Daniel M, Lie GT;2011). The need to tailor programmes to more fully consider the local workforce and local culture is integral to address motivational determinants for the needs of specific groups within each context (Razee H, Whittaker M, Jayasuriya R, Yap L, Brentnall L:2012).

Lehman et al's (2008) review and Mullei et al's (2010) study identified infrastructure as contributing to improving attraction and retention of rural HWs. None of these authors referred to social factors. Dussault (2006) mentioned socio-cultural environment as a broad factor for poor retention. Dieleman et al (2003) in Vietnam identified the community's respect as an important factor for HW motivation. Ashwell and Barclay (2009) in evaluating a community health promotion project in PNG found stronger relationships between communities and HW resulted in better outcomes. Other studies reviewed (Jayasuriya et al., 2011) do not utilise a model of worker performance encompassing social factors.

In an attempt to reduce child morbidity and mortality, Uganda adopted the integrated community case management policy and lay CHWs are main drivers of this strategy in implementation. Under this policy, CHWs are trained and supported to assess, manage and refer when appropriate, children under five years with malaria, pneumonia and diarrhoea [MOH; 2010).

Haines and colleagues (Haines AS, Lehmann D, Rowe U; 2007) identified three determinants of the success of a CHW programme. These include: community factors such as location, support, respect, health beliefs, national socioeconomic and political factors, including corruption and political will and health system factors such as remuneration, training and supervision (Kalyango JN, Rutebemberwa E, Peterson S, Karamagi C; 2012). CHWs require supportive supervision, clearly defined roles with specific tasks, locally relevant incentive systems that combine monetary and non-monetary incentives, recognition, training opportunities, community and policy support, and strong leadership (Mathauer I, Imhoff I; 2006). All of these factors can play a role in the length of time a CHW serves thus affecting their performance. Social demographic characteristics, such as age, sex, marital status and education level, greatly influence performance of CHWs.

Often performance is measured in terms of improvement in health status of the population that CHWs serve, increase in the utilization of services provided by them, reduction in the wastage of resources, the presence and accessibility of CHWs to community members, etc (Stock-Iwamoto & Korte, 1993). However, what is eventually important in sustaining the performance of CHWs to function with commitment and effectiveness, as the experimentation in Parinche (FRCH-PUNE Project - Antia & Bhatia, 1993) and (Gadchiroli, Maharashtra - Bang et al., 1994; Gryboski et al., 2006), is the degree of trust and confidence that CHWs have gained from community members over a period of time.

### **2.3. Social-Cultural Factors and Performance**

The performance and motivation of CHWs are influenced by various inherent characteristics of CHWs, such as their age, gender, ethnicity, and even religion, which affect how they are



perceived by community members and their ability to work effectively (Kartikeyan, S, and RM Chaturvedi, 1991). 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 socio-cultural factors are important determinants of CHWs' effectiveness (Lehmann & Sanders 2007). Understanding how the socio-cultural factors influence CHWs' performance in conducting their targets is therefore of paramount importance primarily for the adoption of evidence based level one health care service (Ndedda Crispin, Annah Wamae, et al. 2012).

Women's preference for giving birth at home is a deeply embedded cultural belief in Ethiopia, resulting in women choosing to deliver with a traditional birth attendant at home instead of with a health extension worker at a health post (Medhanyie A, Blanco R, et al.2012). Similarly, lady health workers in Pakistan have difficulties in following-up newborns because of women delivering in their parents' house and residing with them for 40 days after childbirth (Bhutta ZA, Memon ZA, Ali I, et al. 2011). Likewise, seclusion of mother and baby after delivery hampers CHW performance in Bangladesh (Azad K, Barnett S, Rego AR, et al; 2010).

In many societies, the husband and mother-in-law are the primary decision-makers (McPherson RA, Tamang J, Baqui AH, et al). In India, grandmothers and mothers-in-law have a big influence on the health-seeking behaviour of pregnant women, often resulting in home births. Two different studies on maternal health in Afghanistan and Bangladesh showed that involving the husbands, mothers-in-law, sisters-in-law and mothers in health education activities reinforced the

messages of CHWs and enhanced coverage and acceptability of CHWs in the community(Sanghvi H, Ansari N, Prata NJ, Gibson H, Ehsan AT, Smith JM; 2010).

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. In other communities, resistance from husbands is 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.

Social hierarchies can also form a barrier to CHW performance. From India, Abbott et al. reported that female community based distributors faced challenges in influencing behaviour of women with a lower social status (Abbott L, Luke N; 2011). While in another setting in India, accredited social health activists are in demand by all castes and religious groups (Srivastava DK, Prakash S, Adhish V, Nair KS, Gupta S, Nandan D; 2010). According to Prata et al. social structures in Nigeria are extremely hierarchical and local leaders have strong influence on the “acceptability” of CHWs. This, however, does not necessarily translate into constraints for the CHWs, but still adequate community participation is seen, and CHWs are still able to do their tasks.

According to studies conducted in Uganda, cultural and religious beliefs amongst the target groups made it difficult to approach them and this negatively influenced the level of initiative taken by community reproductive health workers (Martinez R, Vivancos R, Visschers B, Namatovu L, Nyangoma E, Walley J;2008). CHWs' initiative can also be positively influenced by social and cultural values. Community volunteer workers in palliative care in Uganda reported that the cultural desirability of and value attached to the act of helping each other underpinned their caring role for sick community members (Jack BA, Kirton JA, Birakurataki J, Merriman A;2012).

The sex of the CHW has been shown to influence uptake of services in different contexts. In Afghanistan, Viswanathan et al. reported a preference for female CHWs for the delivery of reproductive health services compared to male CHWs, because the norm was that women should not interact with men outside the family (Viswanathan K, Hansen PM, Hafizur Rahman M, Steinhardt L, Edward A, Arwal SH, et al;2012). Hill et al. suggested that having only male community based surveillance volunteers (CBSVs) working in maternal and neonatal health in Ghana might have limited the scope of the intervention, as families may not want the CBSVs to physically help putting babies in the skin to skin position or help with breastfeeding attachment (Hill Z, Manu A, Tawiah-Agyemang C, Gyan T, Turner K, Weobong B, et al; 2008). A family planning programme in Guinea recruited a female and male CBD per village. Only the female CBD, according to social custom, was allowed to approach women about family planning. However, male CBDs were able to engage with men and persuade them that family planning was also a men's concern (Diakite O, Keita DR; 2009). In India, female CBDs working in promotion and distribution of contraceptives were limited in their interaction with men, which hampered

their performance. This was a result of the norms of *pardah*, which strictly regulates interaction between men and women (Abbott L, Luke N; 2011). The same was found for women health volunteers in Iran.

Gender norms and roles affect expectations for income generation of men and women and can influence people to become or remain a CHW. In patriarchal settings, men are expected to be the family breadwinners. A study in Kenya, for example, showed that for this reason, it is difficult for male CHWs to provide voluntary services as it strained their ability to fulfill their financial responsibilities. As a result, they are forced to drop out to search for alternative sources of income. This cultural norm is not the only reason for the higher drop out of male CHWs as compared to female CHWs; it is also indicated that men lacked certain characteristics like instinct for tender care and tolerance that a sick person requires, whereas female CHWs believed “it is their natural duty” to care.

Several studies have reported disease related stigma influencing the performance of CHWs. In a project involving peer counsellors to support clients to adhere to anti-retroviral therapy (ART) in Ethiopia and Uganda, peer counselors’ performance was limited by some clients not disclosing contact details through fear of having their HIV status known (Gusdal AK, Obua C, Andualem T, Wahlstrom R, Chalker J, Fochsen G;2011). Stigma also plays a role in Uganda, where CHWs found it difficult to approach clients about family planning and in Kenya, where trained HIV infected peers delivering HIV care at household level defined themselves as health counsellors to avoid the AIDS label and promote confidentiality (Wools-Kaloustian KK, Sidle JE, Selke HM, Vedanthan R, Kemboi EK, Boit LJ, et al.2009).

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 Sarididi, 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.

Low levels of education and health knowledge in the population pose a challenge for CHWs in Kenya, who are perceived by some people in their communities to be “ignorant” and “uncooperative” (Takasugi T, Lee AC;2012). Community reproductive health workers in Uganda reported that misconceptions about contraception were the major factors hindering their work (Martinez R, Vivancos R, Visschers B, Namatovu L, Nyangoma E, Walley J;2008).

However, this could be interpreted as an attitude of the CHW rather than a contextual factor. Christianity is well established in Papua New Guinea with over 90% of the population belonging to a Christian denomination (NSO: 2000 National Census National Report). The churches provide roughly 50% of Papua New Guinea's education and health services; the influence of Christianity also extends to government services, however, with most government HWs identifying as Christian (Kelly A;2009). The role of religious faith inspires a need to do good and take care of those who are suffering and has been described as 'a culture of service' that influences the practices of HWs in Papua New Guinea (Jayasuriya R, Razee H, Bretnall L, Whittaker M, Yap L, Chakumai K;2011). The impact that Christian frameworks have on sexual and reproductive health service delivery in PNG has been explored with both potential positive impacts (e.g., greater adherence to antiretroviral therapy for those attending church facilities) and negative impacts (e.g., the reluctance of staff to give out condoms due to their religious beliefs)

#### **2.4 Health System Factors (practice and policy) and Performance**

Several authors note the importance of engaging with the various social structures that exist in the community, such as the local leadership, women's groups, community-based organizations and faith-based groups, to broaden the ownership of the program and support for the CHWs themselves (Sauerborn et al., 1989; Tripiboon, 2001). Lewycka et al. (2010) note that support from a local women's group improved health care-seeking within the community (Dubowitz et al., 1995). In her evaluation of a CHW program in Ecuador, Mangelsdorf (1988) found that the presence of a health committee in the community was associated with better CHW performance in the areas of prevention and maternal-child health.

However, the role community groups and other community structures can play in the CHW program needs to be clearly established (Sauerborn et al., 1989). Walt et al. (1989) note that some community structures, such as village health committees, have been weak, inactive, and ill-equipped to engage in the process of supporting and generating demand for CHW programs. The formation of community structures specifically focused on CHWs appears to have a strong role in generating demand for CHW services as well as in increasing the level of respect a community may have for CHWs (Marsh, Wray, Worku, & Mezgab, 1999; Wagner, 2012).

A recent report on the efficacy and sustainability of World Vision's long-standing Community Care Coalitions supports the contribution of CCCs as critical platforms for the coordination of services within communities. Among other things, the CCCs have been effective in creating and sustaining demand for health services (Wagner, 2012). These results indicate that viable CHW-specific associations increase demand for CHWs and also strengthen the operational link between the health system and the community. Community structures are key to supporting the CHW and giving her legitimacy in the community. Health committees working with officials from the public health sector, schools and NGOs strengthened CHW programming in South Africa (Dick, Clarke, van Zyl, & Daniels, 2007). In Jamkhed, India, farmers' clubs supported CHWs and helped CHWs to solve problems. In Brazil, community committees became an informed public monitor of the CHW program (Tendler & Freedheim, 1994). In Navrongo, Ghana, community engagement to support the work of the Community Health Officers was a critical part of its CHW program, which documented a pronounced impact on child mortality.

In many African societies, traditional systems of village leadership, social networking, and social organization foster volunteerism for agricultural production self-help, and village governance. In Navrongo, Ghana, these traditional forms of social cooperation are used to mobilize support for

community health and family planning. The approach involves constituting health-care action committees from existing counsels of elders, mobilizing traditional peer networks and implementing supervisory services with extant traditional village self-help schemes. While CHWs are the service providers, outreach to men is through durbars (community gatherings) which foster widespread knowledge of the program elements (Debpuur et al., 2002). In Mali, new community oversight committees supported the work of CHWs as well as planned and conducted health activities in their villages. The oversight committees also provided a link between the village leadership and the CHWs. When health committees have minimal engagement with CHWs, CHW status, morale and performance can be adversely affected (Gilson et al., 1989).

Community Health Strategy (CHS) is a new Community Health Worker led Primary Health Care (PHC) intervention in Kenya. The CHS intends to improve the health status of Kenyan communities through building the capacity of the Community Health Workers to provide PHC services, strengthening health facility' community linkages and strengthening the community to progressively realize their rights to access quality healthcare and to seek accountability from health facility based services (MOH, 2006). CHS was designed in 2006 to support the delivery of Kenya Essential Package for Health (KEPH) at level one or (Community level). The CHS program structure provides for creation of Community Units (CUs) as the basis of PHC service provision. Each CU is supposed to serve approximately 5000 people. The service providers in the CUs are well trained Community Health Workers (CHWs) and Community Health Extension Workers (CHEWs). CHWs are members of the community identified by the community and trained to serve the same communities they come from while CHEWs are trained health professionals (Nurses and Public health officers trained at certificate and/or diploma levels and



working for the Ministry of Health). Each CHW is required to provide PHC services to 20 households. The responsibilities of CHEWs are; to supervise CHWs (each CHEW is required to supervise up to 25 CHWs), to facilitate trainings in the community and to provide a linkage between CHWs and health facility (MOH 2006).

Since inception of the CHS in the year 2007, the Government of Kenya (GoK) guided by the 2008-2012 Ministry of Public Health and Sanitation (MoPHS) Strategic Plan and with the help of development partners initiated implementation of CHS pilot programs in various sub-counties in the Country (Wangalwa Gilbert, Cudjoe Bennett, Wamalwa David, Machira Yvonne, Ofware Peter, Ndirangu Meshack, Ilako Festus; 2012). CHS is not only one of the Community led health initiatives driving Kenya into realizing Millennium Development Goals (MDGs) number 4 and 5 but is also a component in the health flagship projects of Kenya's vision 2030 (Kenya Health Policy 2012-2030;2012).

## **2.5 Environmental Factors and Performance of CHWs**

The working environment in health care comprises of two major components, namely, physical and psycho-social. During early days of development of health organization physical environment in work place was given importance and was considered as a predominant determinant of employees' performance. Earlier studies examined the effect of illumination, temperature, noise, and atmospheric conditions on performance of the workers (Bennett, C., Chitlangia, A. & Pangnekar; 1997). However, there is no consistent relationship between the components of physical work environment and performance. Studies by health care psychologists have further examined social and psychological environment and its effects on employee performance.

Several studies have shown that topographical challenges and the need to cover large distances hamper CHW performance. Mukanga et al., in a study on CHWs working in child health in Uganda, found that households residing 1 to 3 km from a health facility were 72% more likely to utilize CHW services compared to households residing within more than 3km of a health facility (Mukanga D, Tibenderana JK, Peterson S, Pariyo GW, Kiguli J, Waiswa P, et al; 2012). Thus, proximity of CHWs and health facilities to their clients could affect utilization of CHW services. Four studies referred to difficulties of CHWs in reaching communities because of flooding, which hampered their performance (Azad K, Barnett S, Banerjee B, Shaha S, Khan K, Rego AR, et al; 2010). The amount of work that a CHW's catchment area entails depends on the number of households each CHW is responsible for, the target group within the family (e.g. all family members, children only, women only), as well as the geographic distribution of those households.

The population coverage and the range of services offered at the community level are vital in the design of effective CHW schemes, and it should be noted that the "smaller the population coverage, the more integrated and intensive the service offered by the CHWs". How far apart the households are, how much geographic area they cover, the type of terrain, and whether reliable transport is available all affect how well CHWs are able to meet their performance expectations. When catchment areas are too large, CHWs may have difficulty finding the time or transportation needed to visit all the assigned households (Bennett, C., Chitlangia, A., & Pangnekar). As compared with facility-based providers who spend unproductive time waiting for clients (WHO, 2006), CHWs log unproductive time getting to the client or arriving at the household to find the client absent. Catchment areas where families live spread out over wide distances with difficult terrain to cross or where CHWs are not provided with appropriate

transport increase the time spent on the road and decrease productivity. CHWs participating in the delivery of a community-based newborn care intervention package in the People's Republic of Bangladesh's Sylhet District "attended less than 5% of all births because of their high travel distances, and difficulty receiving timely notification of deliveries" (Chandrasekar K ,2011). Programmes must take care to monitor the catchment area assigned to CHWs to ensure that they can satisfactorily reach all the targeted members within the specified geographic area with a standard level of quality of care.

Access to resources at the workplace is not only a requirement for providing good quality health services; it is also a factor stimulating the workforce (Adzei, F. A., & Atinga, R. A. 2012). Modern working equipment creates a much more stimulating work environment than working with dilapidated equipment. Mathauer and Imhoff argue that shortage of supplies and resources is considerable challenge at many health facilities, in particular in rural areas in Africa (2006). Thus, health workers experiencing inadequate resources may easily become demotivated by a difficult work environment. In a study from Mali, Dieleman et al 2003, found that 'lack of material' was by far the most important factor for de-motivation.

## **2.6 Economic Factors and Performance of CHWs**

The economic context and its influence on the performance of CHWs have been highlighted in a number of studies; they related mainly to livelihoods, technology and willingness to volunteer and requested compensation for services rendered. Economic hardship could influence willingness to go an extra step to perform some duties, health-seeking behaviour, and could lead to stress of CHWs. A lack of financial or material compensation for services rendered could lead to an inability of CHWs to provide for their family and is particularly exacerbated in areas of

pervasive poverty (Maes K, Kalofonos I; 2013). Poverty of the community could also influence the work of CHWs. Maes et al. reported that a food crisis not only affected CHWs, but also led to lack of food among clients causing distress to CHWs (because they saw their clients suffering). Poverty could also prevent people from seeking health services in general, because of the expense incurred for accessing the services (Sadler K, Puett C, Mothabbir G, Myatt M; 2012).

There are numerous CHW programs that compensate the CHWs by allowing them to charge fees for services and/or sell health-related commodities and drugs in their communities. BRAC is one of the largest NGOs implementing a CHW model with this type of financial support. This financial support does not come from the formal health system or from other fundraising efforts of the NGO. The Nepal Female Community Health Volunteer Program has established local endowment funds, the interest from which is used to provide sustainable, although quite modest, financial support to the CHWs. The studies that exist have highlighted that economic incentives, primarily through supplementary income from the sale of medicines and other health-related products, can improve performance of CHWs, and dissatisfaction with earnings can be a main reason for dropping out (Alam, K., Tasneem, S., & Oliveras, E. 2011). A study of urban CHWs in a BRAC program found that while social incentives are important for motivation, financial incentives are the most commonly discussed factor and supersede other incentives.

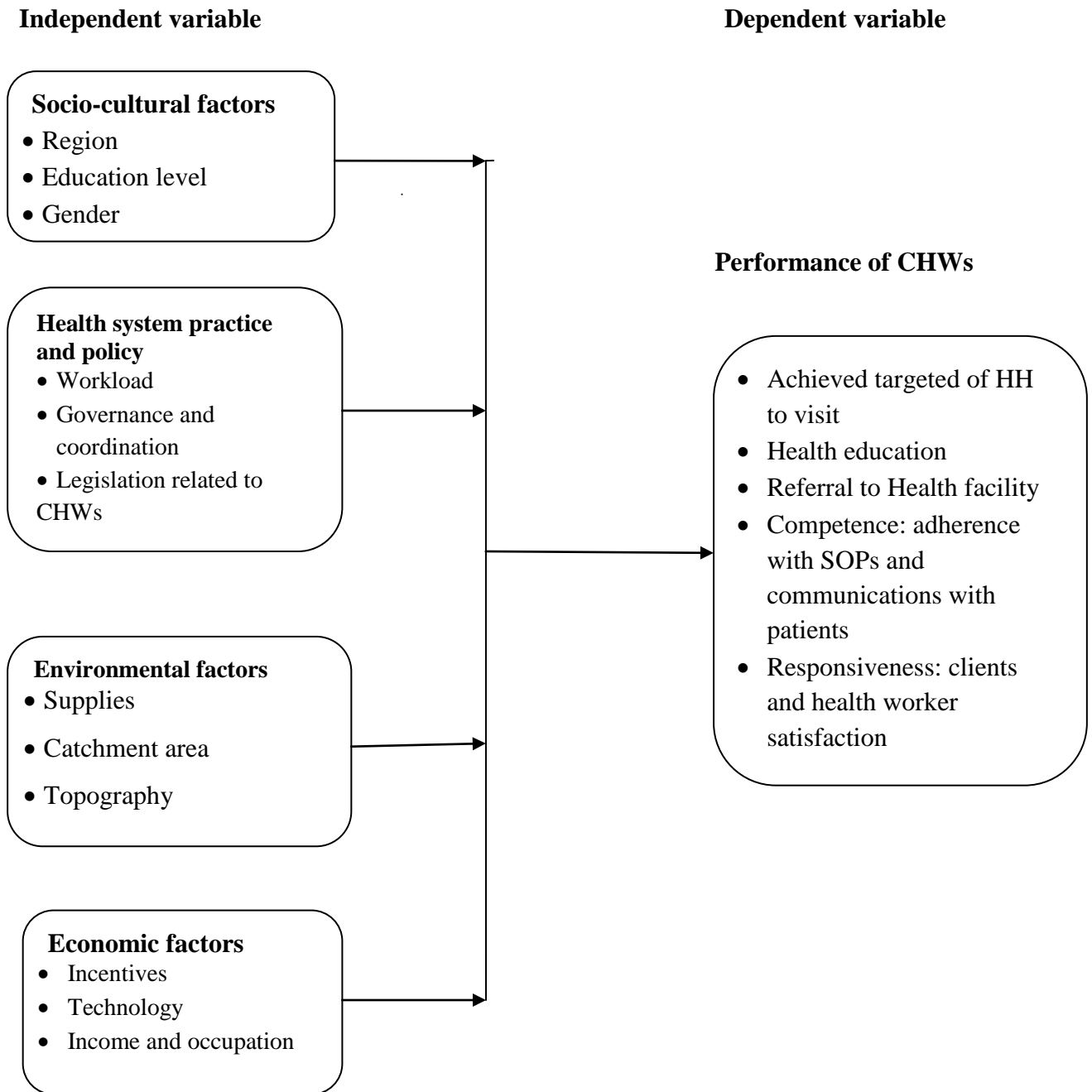
Financial incentives were considered critical in sustaining the CHW program in Tanzania. This finding is also supported by a study done in South Africa, which concluded that non-monetary incentives served as “enablers” while monetary incentives were the “real incentives” (Kironde & Klaasen, 2002). There are few examples of large-scale programs which have been consistently supported financially by the community. One example is the Chinese barefoot doctor program, which lasted from the 1950s until 1984 (Gilson et al., 1989). Another example of CHW

remuneration by communities is a primary health care program developed by the Ministry of Health in the Northwest and Awday regions of Somalia in the 1980s (Bentley, 1989).

## **2.7 Conceptual Framework**

This conceptual framework tries to explain how contextual factors influence CHW performance at the CHW level (e.g., motivation or competencies), the end-user level (e.g., influencing health-seeking behaviour), or by influencing broader CHW programme performance .These factors relate to community (most prominently), economy, environment, and health system policy and practice and form a complex interactive web. They represent characteristics of settings in which a CHW programme operates and sometimes serve as preconditions for the performance of CHWs or CHW programmes.

**Fig 1 Conceptual Framework**



**Source: Author**

## **1.8 Summary of the literature**

CHW socio-cultural characteristics like gender, age, marital status, social status and selection of CHWs from within the community they serve may have an influence on CHW performance, although our review shows a mixed picture on the influence of these factors. Previous studies found that CHW retention rates are higher in programmes which selected CHWs based on past performance and CHWs who are trusted members of the community better reflect the linguistic and cultural diversity of the population served.

The medical profession is regulated and restricted in all countries; legislative and professional regulatory frameworks inform which professional can perform which task. Few studies however reported on regulatory frameworks. Regarding the health-related procedures CHWs are authorized to perform.

The economic context and its influence on the performance of CHWs were highlighted in a number of studies; they related mainly to livelihoods and willingness to volunteer, and requested compensation for services rendered. A lack of financial or material compensation for services rendered could lead to an inability of CHWs to provide for their family and is particularly exacerbated in areas of pervasive poverty. The willingness to become a CHW could be influenced by the wish to earn an income or the hope of being compensated eventually, especially in situations where there is high unemployment or fewer opportunities.

CHW productivity is influenced by a complex interplay of the four elements that comprise an enabling work environment-workload, supportive supervision, supplies and equipment, and respect. Appropriate incorporation of these elements in a CHW programme provides CHWs with the working conditions conducive to doing their job more effectively. However, there is scant

empirical evidence regarding which element of the work environment is the most important, or the exact degree to which one element or a combination of elements has a larger or smaller influence on the overall work environment and, in turn, CHW productivity.

## **1.8 Knowledge Gap**

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 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. 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 beliefs, traditions and norms; knowledge of community health worker and the service they offer; motivation and privacy and confidentiality have not been fully explored.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents information on the research design, target population, sample size, sampling procedures and research instruments. It also presents the methods used for measuring validity and reliability of the research instruments. Data collection and data analysis procedures are also discussed.

#### **3.2 Research design**

Research design refers to the way a study is planned and conducted. It entails choosing the subjects who participate in the study. The techniques and approaches for collecting data for the subject and the procedures (Kumssa, 2011). The study adopted descriptive research design. According to Kothari (2009), descriptive research is used when the problem has been well designed. On the quantitative dimension, structured questionnaires were used to survey, socio-cultural, health system, economic and environmental factors. 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 clients (community) 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.

#### **3.3 Target Population**

The target population for this study constitutes of community Health Workers in Nandi County. According to Polit and Beck (2004:290), the target population “is the aggregate of cases about

which the researcher would like to make generalizations”. There are approximately 2677 community health workers in Nandi County and 241 are from Nandi hills Sub County (KDHS 2008-2009).

### **3.4 Sample size and sampling procedure**

Sampling is the that part of a statistical practice which concerns the selection of individual observations intended to yield some knowledge about a population of concern, especially for the purposes of statistical inference (Ghoshi, 2002). The most straight forward type of frame is a list of elements of the population preferably the entire population with appropriate contact information. According to Kothari (2006), sampling provides a valid alternative to a whole population because surveying an entire population may lead to budget, time constraints and delay result analysis. All CHWs in sub-county will be stratified into three (3) strata as per county assemblies. Thereafter a stratified simple random selection will be done from each stratum.

#### **3.4.1 Sample size**

For populations that are large, Cochran (1963:75) developed the equation to yield a representative sample for proportions.

$$n = \frac{Z_{\alpha/2}^2 pq}{e^2}$$

Which is valid where n is the sample size,  $Z^2$  is the abscissa of the normal curve that cuts off an area  $\alpha$  at the tails ( $1 - \alpha$  equals the desired confidence level, e.g., 95%), e is the desired level of precision, p is the estimated proportion of an attribute that is present in the population, and q is 1-p. The value for Z is found in statistical tables which contain the area under the normal curve.

The researcher considered the population of CHWs in Nandi County which is approximately 2677 and approximately 241 are found Nandi hills sub-county on which the researcher derived a sample size for generalization about the population.

The sample size was determined by substituting in the above formula.

$e$  = Maximum probable error which the researcher was willing to tolerate (0.06)

$P$ =Proportion of CHWs in Nandi Hills sub county to the total population

$$\left( \frac{241}{2677} \right) = 0.09$$

$$q=1-p (0.91)$$

The following values are also assumed;

$$\alpha=5\%$$

$$e = 0.06$$

By substituting the values in equation (1)

$$N = \frac{(1.96^2 * 0.09 * 0.91)}{0.06^2} = 87$$

Therefore 87 CHWs were interviewed.

### **3.4.2 Sampling Procedure**

Sampling technique is the procedure a researcher uses to gather people, places or things to study (Kombo & Tromp, 2006). The study employed the use of stratified random sampling for selecting the CHWs as per the wards they come from as shown below.

**Table 3.1 sampling criteria**

| Ward        | CHWs | Selected sample | Sampling interval |
|-------------|------|-----------------|-------------------|
| Chepkunyuk  | 77   | 26              | 3                 |
| Nandi hills | 100  | 31              | 3                 |
| Kapchorua   | 64   | 29              | 3                 |
| Total       | 241  | 87              |                   |

### 3.5 Research Instruments

Primary data was be collected by using structured questionnaires with open and closed ended questions which were written in English. Questions were asked on socio-demographic characteristics whereby age, marital status, and level of education will be gathered from respondents. Then information on performance related factors was collected through structured questionnaires whereby respondents were asked on the socio-cultural, environmental, and economic and health system factors.

### 3.6 Pilot Study

According to Burns and Grove (2003), a pilot study is often defined as “smaller version of a proposed study, and is conducted to refine the methodology”. A pilot study allows the researcher to test the prospective study and is done on a small number of people having characteristics similar to those of the target respondents. The pilot study helps to identify possible problems in the proposed study and allows the researcher to revise the methods and instruments before the actual study, in other words to improve the success and effectiveness of the study (De Vos et al 2005). The pre test questionnaires were administered to 4 nurses and 6 clinical officers in Turbo.

After pre-testing the tools, data collected was reviewed and where necessary modifications were made.

### **3.6.1 Validity**

Validity refers to ‘the degree to which an instrument measures what it is supposed to be measuring’. In other words, a valid instrument actually measures the concept it is supposed to measure (Polit & Hungler 1989; De Vos et al 2005). According to Polit and Beck; 2004 and De Vos et al 2005), three main approaches for assessing the validity of instruments designed to collect quantitative data are content validity, criterion-related validity and construct validity.

In this study, construct and content validity was used to assess the validity of the instruments by means of assessing the adequacy, appropriateness, inclusiveness and relevancy of the questions to the subject under study was assessed. Expertise of the supervisor and professionals from the medical field was sought to judge whether or not the instruments reflects the known content and it was found to measure to standard.

### **3.6.2 Reliability**

According to Polit and Beck (2004), “reliability is the consistency with which the instrument measures the target attribute”. This means that administering the same instrument by various researchers will provide the same results under comparable conditions (De Vos et al 2005). *Reliability* of an instrument can be equated to clarity, quality, stability, consistency, adequacy and accuracy of the measuring tool (Polit & Hungler 1989; Varkevisser et al 1991:152).

According to Garson (2006a:1) reliability can be estimated in one of the following four ways which is *internal consistency*, *split-half reliability*, *test-retest reliability* and *inter-rater reliability*. In this study, reliability of the instrument was tested by means of the Cronbach’s

Alpha which is the most common means of testing internal consistency of the items, using the SPSS package. Internal consistency reliability refers to the extent to which all the sub-parts of an instrument will measure the identified attributes. By rule a lenient cut-off of .60 is common in exploratory research; the alpha should be at least .70 or higher to retain an item in an adequate scale (Garson 2006a:2).

### **3.7 Data Collection Methods**

#### **3.7.1 Structured Interview questionnaire**

The quantitative data was collected using a structured interviewer guide administered to CHWs. The guide covered sections on socio-cultural factors, health system factors, economic factors as well as environmental factors. 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,

#### **3.7.2 Focused Group Discussions**

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. FGD was held in a private setting to facilitate freedom of expression.

#### **3.7.3 Key Informant Guide**

This tool was used for key informants who included 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.

### **3.8 Data Analysis**

The quantitative data was cleaned, entered into a computer, coded and analyzed using statistical package for social scientists (SPSS) version 20. The results were presented descriptively and inferentially using frequency distributions and percentages. Frequency tables, was used in data presentations while inferential statistics was computed. Qualitative data was analyzed using Nvivo version 10 to determine performance of CHWs.

### **3.9 Ethical Considerations**

The researcher observed ethics in the process of data collection and presentation. The researcher 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. Authorization to carry out the study was obtained from University of Nairobi, National Council for Science and Technology, department of health.

### 3.10 Operationalisations of variables

**Table 3.2 Summary of variables**

| Objective  | Type of variable   | Indicator  | Measure        | Approach of Analysis                            | Research instrument  |
|--|--------------------|--|----------------|---|----------------------|
| To assess the influence of socio-cultural factors on performance of CHWs             | <b>Independent</b> | Beliefs, cultural norms  | <b>Nominal</b> | Percentage, Frequency<br>Inferential statistics | <b>Questionnaire</b> |
|  | <b>Dependent:</b>  | No. of clients referred, household visits, no of morbidity and mortality | ordinal        |   |                      |
| To examine the influence of health system practice and policy on performance of CHWs | <b>Independent</b> | governance, coordination; workload                                       | <b>Nominal</b> | Percentage, Frequency, Inferential statistics   | <b>Questionnaire</b> |
|  | <b>Dependent:</b>  | no. of clients referred, household visits, no of morbidity and mortality | <b>Ordinal</b> |   |                      |
| To determine the influence of environmental factors on the performance of CHWs       | <b>Independent</b> | Geographical locations, working conditions                               | <b>Nominal</b> | Percentage, Frequency, Inferential statistics   | <b>Questionnaire</b> |
|  | <b>Dependent:</b>  | no. of clients referred, household visits, no of morbidity and mortality | <b>Ordinal</b> |   |                      |
| To investigate the influence of economic factors on the performance of CHWs          | <b>Independent</b> | Incentives, technology, infrastructure                                   | <b>Nominal</b> | Percentage, Frequency, Inferential statistics   | <b>Questionnaire</b> |
|  | <b>Dependent:</b>  | no. of clients referred, household visits, no of morbidity and mortality | <b>Ordinal</b> |   |                      |



### **3.11 Summary**

This chapter deals with a brief introduction, research design and identification of target population. Three research instruments namely the questionnaire, key informant guide and focus group discussions were used to collect data. The ethical issues were addressed. An operationalization table showing how various variables were measured was also drawn and explained.

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS**

#### **4.1 Introduction**

This chapter presents the findings of the study on the factors influencing the performance of community health workers (CHWs) in Nandi hills sub-county. 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 81 CHW and consultative discussions using focus group discussions and key informant interviews. A total of 81 respondents against a target of 87 (CHW) participated in the study. This was a response rate of 93%.

#### **4.2 Response rate**

The researcher sort to collect data from CHWs by use of a research questionnaire. A sample of 87 questionnaires were printed and distributed. 81 questionnaires were correctly filled and returned representing 93% response rate while 6 questionnaires were never returned.

#### **4.3 Demographic characteristic of the respondents**

The total number of 81 CHWs was interviewed. The demographic characteristics of the study sample was as shown in Table 4.1

**Table 4.1: Demographic characteristics**

| Characteristics           |                   | N  | Percentage |
|---------------------------|-------------------|----|------------|
| <b>Sex</b>                | Male              | 36 | 44.4       |
|                           | Female            | 45 | 55.6       |
| <b>Age</b>                | 20-29 Years       | 10 | 12.3       |
|                           | 30-39 Years       | 32 | 39.5       |
|                           | 40-49 Years       | 30 | 37.0       |
|                           | 50-59 Years       | 7  | 8.6        |
|                           | Above 60 yrs      | 2  | 2.5        |
| <b>Marital status</b>     | Married           | 60 | 74.1       |
|                           | Single            | 16 | 19.8       |
|                           | Separated/Widowed | 5  | 6.2        |
| <b>Level of Education</b> | Primary           | 21 | 25.9       |
|                           | Secondary         | 35 | 43.2       |
|                           | Tertiary          | 23 | 28.4       |
|                           | University        | 2  | 2.5        |
| <b>Occupation</b>         | None              | 38 | 46.9       |
|                           | Business          | 5  | 6.2        |
|                           | Formal employment | 2  | 2.5        |
|                           | Farmer            | 36 | 44.4       |

The total number of 81 CHWs responded to the questionnaire. The demographic characteristics of the study population are as shown in Table 4.1 above. 45 (55.6%) of the respondents were male and the 36 (44.4%) were female. From the findings, 10 (12.3%) of the respondents were of age 20-29yrs, 32 (39.5%) of the respondents were of age 30-39 yrs, 30 (37%) of the respondents were of age 40-49 yrs, 7 (8.6%) were of age 50-59 yrs and only 2(2.5%) were of age above 60yrs. On the marital status of the respondents, the findings showed that 60 (74.1%) were married, 16 (19.8%) were single and 5 (6.2%) were separated/widowed. The findings also

showered that 21(25.9%) of the respondents had completed primary education, 35 (43.2%) had completed secondary education, 23(28.4%) of the respondents had completed tertiary education and only 2 (2.5%) were university graduates. The study also sort to find out the occupation of the respondents and the findings showed that 38 (46.9%) of the respondents had no formal employment, 5 (6.2%) of the respondents were running businesses, 2 (2.5%) were on formal employment and 36 (44.4%) were practicing farming as a source of living.

#### 4.4 Performance of community health workers

A focused group discussion was conducted on three groups of clients (community members) which comprised of 6-11 participants. The discussions were recorded and Nvivo was used to generate scores attached to each activity as shown below.

**Table 4.2 performance of CHWs**

| <b>Performance of CHWs</b>    |                       |                       |                    |
|-------------------------------|-----------------------|-----------------------|--------------------|
| <b>Variable</b>               | <b>Score (25-49%)</b> | <b>Score (50-74%)</b> | <b>Score (75+)</b> |
| Achieved targeted HH to visit | 17.1                  | 60.5                  | 22.4               |
| Attended meetings             | 11.6                  | 63.2                  | 25.2               |
| Health education              | (9.0)                 | 69.7                  | 21.4               |
| Referral to Health facility   | 13.2                  | 66.4                  | 20.4               |
| <b>Overall performance</b>    | <b>12.8</b>           | <b>65.5</b>           | <b>21.7</b>        |

The table above shows the focus group discussants rating of services they receive from CHWs. The activities that scored 75% and above were classified as being performed well, while those that scored below 75% were classified as being performed poorly. The table shows that

performance of CHWs is measured by the activities that they conduct and this is in agreement with (Stock-Iwamoto & Korte, 1993) who stated that often performance is measured in terms of improvement in health status of the population that CHWs serve, increase in the utilization of services provided by them, reduction in the wastage of resources, the presence and accessibility of CHWs to community members.

*“We Experienced low health status- people didn’t know preventive measures e.g. malaria nets, clearing bushes, there was poor sanitation, use of unsafe drinking water and unbalanced diet leading to malnutrition at the grassroots. In addition those with HIV were shy and anti social due to stigmatization”* (Beneficiary of FGD, Matema CU)

#### 4.5 Socio-cultural factors and performance of CHWs

The first objective of the study was to assess the influence of social-cultural factors on performance of CHWs in Nandi-Hills sub-County. The social cultural factors were determined by religion, cultural beliefs and norms in the community.

**Table 4.3 Socio-cultural factors and performance of CHWs**

|                        | Unstandardized Coefficients |            | Standardized Coefficients |        | P-value |
|------------------------|-----------------------------|------------|---------------------------|--------|---------|
|                        | B                           | Std. Error | Beta                      | t      |         |
| (Constant)             | .692                        | .086       |                           | 8.064  | .000    |
| Sex of the respondents | .121                        | .070       | .137                      | 1.728  | .088    |
| Age of the respondents | -.080                       | .052       | -.166                     | -1.552 | .125    |
| Marital status         | -.107                       | .068       | -.119                     | -1.562 | .122    |
| Level of Education     | .197                        | .051       | .358                      | 3.824  | .000    |
| What is your religion? | .289                        | .024       | .744                      | 11.843 | .000    |

a. Dependent Variable: Performance of community health workers

The table above shows that sex with a standardized coefficient of 0.137 (p=0.088) was statistically significant meaning that sex affects the performance of health workers. Level of

education of with the standardized coefficient of 0.358 ( $p=0.000$ ) meaning that level of education significantly affect health worker performance. Religion with the standardized coefficient of 0.744 ( $p=0.000$ ) meaning that religion significantly affects health workers performance. On the other hand, age of the respondents with a standardized coefficient of -0.166( $p= 0.125$ ) does not significantly affect the performance of community health workers. Also the findings shows that marital status with a standardized coefficient of -0.119 ( $p=0.122$ ) does not significantly affect the performance of community health workers.

The sex and religion of the CHW has been shown to influence uptake of services in different contexts. In Afghanistan, Viswanathan et al. reported a preference for female CHWs for the delivery of reproductive health services compared to male CHWs, because the norm was that women should not interact with men outside the family (Viswanathan K, Hansen PM, Hafizur Rahman M, Edward A, Arwal SH, et al, 2012). In India, female CHWs working in promotion and distribution of contraceptives were limited in their interaction with men, which hampered their performance. This was a result of the norms of Purdah, which strictly regulates interaction between men and women (Abbott L, Luke N, 2011). Being female could influence mobility of CHWs: two studies from Bangladesh reported that Shasthya Shebikas (CHWs) were seen as being “not decent” if they went out in the night, particularly in rural areas (Alam K, Tasneem S, Oliveras E, 2012).

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

“Personally, I usually seek the services of traditional herbalist before going to the health centre or health facility” said a focus group discussant

#### 4.6 Health system factors and performance of CHWs

The other objective of the study was to examine the influence of health system practice and policy on performance of CHWs in Nandi Hills sub-County. The health systems factors were determined by workload, coordination and governance.

**Table 4.4: Health System factors and Performance of CHWs**

|   | Unstandardized |            | Standardized |        |         |
|---|----------------|------------|--------------|--------|---------|
|   | Coefficients   |            | Coefficients |        |         |
|   | B              | Std. Error | Beta         | t      | P-value |
| (Constant)                                      | .740           | .068       |              | 10.815 | .000    |
| Appointment letter                              | .068           | .034       | .257         | 2.031  | .006    |
| Receiving feedback from supervisors             | .099           | .058       | .413         | 1.710  | .091    |
| workload  | .045           | .058       | .174         | 1.670  | .044    |
| Submission of monthly reports                   | .021           | .060       | .144         | 1.354  | .025    |
| Infection control strategy guidelines available | .208           | .064       | .506         | 3.228  | .002    |

a. Dependent Variable: Performance of Community Health Workers

Table above shows results of associations between health system factors and performance of CHWs. Factors found to be significantly associated with performance were: having an appointment letter 2.031(p=0.006), receiving feedback from supervisors 1.710 (0.091) and

regular submission of monthly reports 1.354 (0.025). Others factors found to be significant were: workload 1.670 (0.044) and the presence of infection control strategy 3.228(0.002)

Provision of feedback is an important component of the CHWs strategy, yet nearly a half of the CHWs did not receive timely feedback from their supervisors. A similar study in Mali also found out that regular supervision was a key predictor of good performance of CHWs (Perez F, and Altmann M, 2009). However, contradicting findings in a Zambian study showed that support supervisions did not influence the performance of CHWs (Stekelenburg J, Kyanamina SS, Wolffers I, 2003) although in Zambia, support supervisions were irregular and there was no standard method or checklist was used during supervisory visits. Under the CHWs programme, the main purpose of such feedback is to provide ongoing support, identify best practices, challenges and coping mechanisms for CHWs. Weak and inconsistent provision of feedback was cited in this study and this may be partly attributed to limited resources, mainly transport to conduct monthly supervision. Such home-based interactions with supervisors help to reinforce CHW's competencies in case management, drug storage and record keeping as well as identifying and controlling misuse of drugs. Reliance on quarterly meetings to provide feedback is not enough as they are often too big and usually focus on discussing incentives and general challenges. Such may not necessarily lead to improvement in individual performances.

The findings from the in-depth interviews with county health management team showed that supervision is an important aspect in performance of CHWs.

*“The quality of care that HSAs can provide will also depend on supervision or support that you are providing to them. These are not medically oriented personnel. We are making them to be medically oriented hence we need to provide them with the necessary support that they might require”* (KII participant)



#### 4.7 Environment factors and Performance of CHWs

The third objective of the research was to determine environmental factors that influence performance of CHWs. These factors included office building space, geographical region, availability of equipments, office layout and households covered and the table below shows the findings.

**Table 4.5 Environmental factors and performance of CHWs**

| Performance                | Unstandardized coefficients |           | Standardized Coefficients |       | P-Value |
|----------------------------|-----------------------------|-----------|---------------------------|-------|---------|
|                            | B                           | Std error | Beta                      | t     |         |
| Constants                  | 1.785                       | 0.386     | 4.622                     |       | 0.000   |
| Office building space      | 0.244                       | 0.150     | 0.345                     | 2.540 | 0.015   |
| Geographical region        | 0.379                       | 0.169     | 0.363                     | 2.456 | 0.018   |
| Availability of equipments | 0.364                       | 0.154     | 0.359                     | 2.454 | 0.013   |
| Office layout              | -0.253                      | 0.140     | 0.243                     | 1.657 | 0.109   |
| Households covered         | -.50                        | 0.122     | -.058                     | -.410 | 0.683   |

Regression analysis was done in order to estimate the relationship between performance and environmental factors. These factors included office building space, geographical region, availability of equipments, presence of privacy (office layout) and households covered. The table shows that some of environmental factors were statistically significant. These factors are office building space with the standardized coefficient of 0.345(p=0.015) meaning that office building space significantly affects health worker performance, geographical region which has the standardized coefficient of 0.363(p=0.018) meaning that the religion in which the CHW is suppose to work significant affect health worker performance, and availability of equipment which has the standardized coefficient of 0.154(p=0.013) meaning that availability of equipment significant affect health worker composite performance.

In this study the health care providers seem to be influenced by office building to stay in the office and work comfortably. The study done by Chandrasekar (Latham, G. P. and Yukl, G. A. (1999) demonstrates that employee's performance at the workplace is influenced by physical aspect of environment which includes office space (building) and furniture's. Also by Srivastava found related results whereby perceived adequacy or inadequacy of work environment (physical component like office building and electricity) extends noticeable effect on employees' job satisfaction and performance (Srivastava A.K., 2008).

These results imply that there is a significant relationship between office building space, geographical region, availability of equipments and performance. Therefore, health workers do not only require being motivated financially but also non monetary motivation like presence of a good office with quality furniture can help to motivate workers to perform well.

#### 4.8 Economic factors and performance of CHWs

The other objective of the study was to investigate the influence of economic factors on the performance of CHWs in Nandi-Hills sub-county. The economic factors were determined by payment, kind of incentives and stock supplies.

**Table 4.6 Economic factors and performance of CHWs**

|                        | Unstandardized Coefficients |            | Standardized Coefficients |        |         |
|------------------------|-----------------------------|------------|---------------------------|--------|---------|
|                        | B                           | Std. Error | Beta                      | t      | P-value |
| (Constant)             | .876                        | .054       | .845                      |        | .000    |
| Payment                | .0801                       | .035       | .526                      | 2.528  | .008    |
| Kind of incentives     | .087                        | .037       | .188                      | 2.355  | .021    |
| Adequacy of incentives | -.021                       | .014       | -.105                     | -1.541 | .128    |
| Stock of supplies      | .087                        | .037       | .188                      | 2.355  | .021    |

a. Dependent Variable: Performance of Community Health Workers

Then regression analysis was also done in order to establish the relationship between economic factors and performance of CHWs. Payment, kind of incentives that CHWs receive, custodian of remuneration were looked into in order to compare with performance of CHWs. The table above shows payment that is given to CHWs with a standardized coefficients of 0.526( $p=0.008$ ) shows that it significantly affects the performance of the CHWs. The findings also show that the kind of incentives that is given to CHWs with a standardized coefficient of 0.188( $p=0.021$ ) significantly affects the performance of community health workers. But on the other hand, it shows that the custodian of remuneration of CHWs with a standardized coefficient of -0.105 ( $p=0.128$ ) does not significantly affects the performance of community health workers.

Although the opinions of CHWs regarding the adequacy of incentives were not statistically associated with performance, monetary facilitation was one of the highly ranked incentives that would enable CHWs perform better. Although CHWs are expected to perform on a voluntary basis, Ministry of Health guidelines on their operations provide for allowances. In fact a minimum monthly stipend of (Kes 1500), about 15 USD paid quarterly has been suggested (MOH, 2010). These guidelines further stipulate that CHW activities should be planned and budgeted for at all levels and local councils should put in place innovative funding mechanisms to support them. Continued demand of monetary incentives by CHWs means that the spirit of voluntarism might not be sustainable in the long run. This finding is in agreement with other studies that found a positive relation between financial incentives and good performance. A case control study among female volunteers in Bangladesh revealed a strong correlation between financial incentives and performance (Alam K, Tasneem S, Oliveras E, 2012) while a qualitative study among CHWs on the tuberculosis control programme in the Northern Cape Province in

South Africa showed lack of monetary incentives as a major cause of attrition (Kironde S, Klaasen S, 2002).

Although cash incentives might lower attrition rates, increase productivity and accountability of CHWs, such reward systems can present unforeseen negative consequences depending on how they are handled. Such payments can undermine community support and since money is never enough, CHWs might inevitably demand for more money and benefits. For smooth implementation of community health interventions, monetary incentives should be reasonable, sustainable, regular and comparable across all CHWs.

#### **4.9 Relationship between independent variables and performance of community health workers**

Correlation was also done in order to establish the relationship between the composite factors- socio-cultural, health system, economic and environmental factors and performance of community health workers.

**Table 4.7 Pearson correlation between independents variable and performance**

|   | Performance of CHWs | Socio-cultural factors | Health system factors | Economic factors | Environmental factors |
|---|---------------------|------------------------|-----------------------|------------------|-----------------------|
| Performance of Community Health Workers | 1                   |                        |                       |                  |                       |
|   | .000                |                        |                       |                  |                       |
|   | 81                  |                        |                       |                  |                       |
| Socio-cultural factors                  | .884**              | 1                      |                       |                  |                       |
|   | .000                | .000                   |                       |                  |                       |
|   | 81                  | 81                     |                       |                  |                       |
| Health system factors                   | .799**              | .838**                 | 1                     |                  |                       |
|   | .000                | .000                   | .000                  |                  |                       |
|   | 81                  | 81                     | 81                    |                  |                       |
| Economic factors                        | .777**              | .781**                 | .770**                | 1                |                       |
|   | .000                | .000                   | .000                  | .000             |                       |
|   | 81                  | 81                     | 81                    | 81               |                       |
| Environmental factors                   | .775**              | .903**                 | .772**                | .868**           | 1                     |
|   | .000                | .000                   | .000                  | .000             | .000                  |
|   | 81                  | 81                     | 81                    | 81               | 81                    |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The above table shows that there is a strong correlation between socio-cultural factors (0.884\*\*) and performance of community health workers. This finding is in agreement with a study conducted in Ethiopia which found out that woman preference for giving birth at home is a deeply embedded cultural belief in Ethiopia (Medhanyie A, Blanco R, et al.2012). Also another study in Bangladesh found out that seclusion of mother and baby after delivery hampers CHWs performance.

The findings also show that there is a strong correlation (0.799\*\*) between health system factors and performance of CHWs. This finding collaborate a report of world vision (Wagner, 2012) which found out that community care coalitions are critical platforms for the coordination of services within communities. Another study in Mali showed that new community oversight

committees supported the work of CHWs as well as planned and conducted health activities in the village. When health committees have minimal engagement with CHWs, CHWs status, morale and performance can be adversely affected (Gilson et al, 1989).

Further, the findings show that there is strong correlation ( $0.777^{**}$ ) between economic factors and performance of community health workers. These findings are in agreement with other studies conducted that found out that lack of financial or material compensation for services rendered could lead to inability of CHWs to provide for their family and is particularly exacerbated in areas of pervasive poverty (Maes K, Kalofonos I; 2013).

Finally, the findings show that there is a strong correlation ( $0.775^{**}$ ) between environmental factors and performance of community health workers. Several studies have shown that topographical challenges and need to cover large distances hamper CHW performance. Mukanga et al., in a study on CHWs working in child health in Uganda, found that households residing 1 to 3 km from a health facility were 72% more likely to utilize CHWs services compared to households residing within 1 km of a health facility (Mukanga D, Tibenderana JK, Peterson S, Pariyo GW, Kiguli J, Waiswa P, et al; 2012).

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary, conclusions and recommendations of the study on factors influencing the performance of community health workers (CHWs) in Nandi Hills sub-county

#### **5.2 Summary of the findings**

From the study findings the demographic characteristics of CHWs show that most female 45 (55.6%) are willing to volunteer to become community health workers as compared to male 36 (44.4%) and most of the CHWs are of age bracket 30-49yrs (38%). Also the findings show that majority of the CHWs are married 60(74.1%) and are not employed or engaged in other businesses.

This study found out that sex, level of education and religion was associated with performance. Age of the respondents and marital status was found not to influence performance of CHWs. The sex and religion of the CHW has been shown to influence uptake of services in different contexts. In Afghanistan, Viswanathan et al. reported a preference for female CHWs for the delivery of reproductive health services compared to male CHWs, because the norm was that women should not interact with men outside the family (Viswanathan K, Hansen PM, Hafizur Rahman M, Edward A, Arwal SH, et al, 2012). In India, female CHWs working in promotion and distribution of contraceptives were limited in their interaction with men, which hampered their performance. This was a result of the norms of Purdah, which strictly regulates interaction between men and women (Abbott L, Luke N, 2011). Being female could influence mobility of CHWs: two studies from Bangladesh reported that Shasthya Shebikas (CHWs) were seen as being “not decent” if they went out in the night, particularly in rural areas (Alam K, Tasneem S,

Oliveras E, 2012). The study also reports that the use of alternative medicine is common and wide spread in rural 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).

On the performance of community health workers, the findings show that the communities attach more value to the services that they receive from CHWs and they rate according to the services that they receive. The findings also show that the health system factors-appointment letter, workload and monthly submission of reports influence the performance of community health workers. Provision of feedback is an important component of the CHWs strategy, yet nearly a half of the CHWs did not receive timely feedback from their supervisors. A similar study in Mali also found out that regular supervision was a key predictor of good performance of CHWs (Perez F, and Altmann M, 2009). However, contradicting findings in a Zambian study showed that support supervisions did not influence the performance of CHWs (Stekelenburg J, Kyanamina SS, Wolffers I, 2003) although in Zambia, support supervisions were irregular and there was no standard method or checklist was used during supervisory visits. Under the CHWs programme, the main purpose of such feedback is to provide ongoing support, identify best practices, challenges and coping mechanisms for CHWs.

The result reveals that there is a positive significant relationship between performance of the community health workers and the working environment elements; such as presence of office building, availability of drugs and availability of equipment. These results indicates that the physical component of the work environment have the strongest effect on the performance level of employees.



Element such as level of distraction (noise), work interaction and privacy are not considered important by CHW.

The findings further show that there is a positive relationship between economic factors-incentives, supplies and payments. To carry out their tasks effectively, CHWs need a regular replenishment of supplies, medicines, and equipment. Unfortunately, this is another weak link (Lehmann U, Sanders D, 2007). When the supply of needed materials is disrupted not only will productivity decrease but there may be other equally detrimental consequences, such as losing the respect of the community without which a CHW can rarely be productive. In Pakistan, “poor supply caused embarrassment and made "Lady Health Workers" suspect in the eyes of the community because they were accused of selling drugs and contraceptives in the market” ( Afsar HA, Younus M, 2012). CHWs need the trust of the community; when this is compromised CHWs become ineffective. The cost of travel is an important determinant of CHW effectiveness (Sauerborn R, Nougara A, Diesfeld HJ, 1989) and should be factored in when considering how the supplies, materials, and equipment that CHWs need will be replenished.

### **5.3 Conclusion**

Socio-cultural factors can influence access to and uptake of (CHW) health services. As CHWs are part of the context in which clients are living, it is often assumed that they are better able to understand constraints as a result of socio-cultural factors, compared with other health workers. Social and cultural norms should be taken into consideration when selecting CHWs to address community preferences regarding sex and social status. Some communities prefer female CHWs yet they may be less able to perform because of societal and gendered restrictions in mobility or communication with male clients. Gender roles and relations shape processes and experiences

within the community and within the health system and CHWs have a critical interface role between both sides.

The functionality of the health system as a whole has an influence on CHW performance. From our literature review, it is clear that necessary arrangements regarding incentives, supervision, referral, supplies, and training are often inadequate and that CHWs' expectations regarding these issues do not correspond with reality. Performance- or output-based incentives could lead to competition or neglect of unpaid tasks, hampering CHW performance. Hierarchical structures and vertical programmes within the health system hamper communication among CHWs, other health staff and management, negatively affecting CHW performance. In order to bring positive change to health systems, health policy and systems research that fully accounts for context is required. To be successful, CHW programmes require regular and reliable support and supervision. Offering CHWs supportive supervision within the structures and functions of the health team demonstrate better outcomes. Yet supervision is often one of the weakest links in a CHW programme. Quality of supervision matters a great deal: ineffective supervision contributes to low CHW morale and poor productivity.

CHW productivity is influenced by a complex interplay of elements that comprise an enabling work environment- supplies and equipment, office building space, geographical region and households covered. Appropriate incorporation of these elements in a CHW programme provides CHWs with the working conditions conducive to doing their job more effectively.

Although cash incentives might lower attrition rates, increase productivity and accountability of CHWs, such reward systems can present unforeseen negative consequences depending on how they are handled. Such payments can undermine community support and since money is never enough, CHWs might inevitably demand for more money and benefits. For smooth

implementation of community health interventions, monetary incentives should be reasonable, sustainable, regular and comparable across all CHWs.

## **5.4 Recommendations**

### **5.4.1 Policy**

- There is a need for government and partners to explore sustainable financial incentives for CHWs: allowances, reimbursements among others. This has been the case in other countries such as Ethiopia where community health workers strategy has successfully been implemented. Suggestions from FGDs with CHWs averaged to a monthly allowance of about Kshs.3000.
- There is a need to explore non financial incentives for CHWs that are performance based e.g. exchange tours, badges, recommendations letters, and certificates of attendance. This model has been effective in countries like India.

### **5.4.2 Service delivery**

- There is a need for production and dissemination of key health information regarding the Community health strategy of targeting high impact interventions. These should include effective communication mechanisms through radios, television.
- There should be improved staffing of the facilities where community units are linked in order to strengthen referrals and linkage systems especially taking into consideration the spatial distribution and population density. This will improve support supervision from CHEWs to CHWs during their community work

## 5.5 Contributions of the Study

| Objectives   | Contribution  |
|--|---|
| To assess the influence of socio-cultural factors on performance of CHWs in Nandi Hills sub-County             | The study found out that socio-cultural factors play a critical role in determining performance of community health workers. So, socio-cultural factors of the community should be considered when recruiting CHWs.   |
| To examine the influence of health system practice and policy on performance of CHWs in Nandi Hills sub-County | The findings revealed that health system factors such as policy and practice play a critical role in determining the performance of community health workers. For clear coordination structure, there should be policy to guide it.   |
| To determine the influence of environmental factors on the performance of CHWs in Nandi Hills sub-County       | The findings show that environmental factors determines performance of CHWs which implies that attention should be paid to the elements that affect CHW productivity in the design phase as well as throughout implementation of a programme. An enabling work environment is crucial to maximize the productivity of CHWs. |
| To investigate the influence of economic factors on the performance of CHWs in Nandi-Hills sub-county          | The key findings in the study are that affects the performance of CHWs. This implies that the government makes an effort of to give incentives to the CHWs to motivate them in delivering of the services.  |

## 5.6 Suggestions for further Study

- A study should be done assessment of information system on performance of Community Health workers.
- Study should be done on how workload affects performance of community Health workers.

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## **APPENDIX 1: QUESTIONNAIRE**

I am a student of University of Nairobi pursuing Masters of Arts in Project Planning and Management. The purpose of this research is to identify factors influencing performance of community health workers' in Nandi hills sub-county. The study will assist the Government, communities and other partners in policy formulation, implementation, monitoring and evaluation in community strategy. The information given by all those involved in the study will be confidential and privacy will be safe guarded. As a participant you have a right to participate, decline or terminate your participation.

### **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**

- a) Primary { }
- b) Secondary { }
- c) Tertiary { }
- d) University { }

**5. Occupation**

- a) None { }
- b) Business { }
- c) Formal employment { }
- d) Farmer (peasant) { }
- e) Others specify.....

**6. What is your Monthly income in Kshs**

- a) Below 1500 { }
- b) 1501 -2500 { }
- c) 2501 – 3500 { }
- d) 3501 - 4500 { }
- e) 4501 – 5500 { }
- f) 5501 – 6500 { }
- g) Above 6500

**7. 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

### Socio-cultural factors

1. What is your religion?

a) Christian { }

b) Muslim { }

c) Hindu { }

d) Others specify.....

2. Does the community appreciate your work?

a) Yes { }

b) No { }

3. 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.....

4. As a CHW do you get any support to facilitate you work

(a) Yes { }

(b) No { }

If Yes, from who

(a) Spouse { } (b) Family { } (c) Community { }

(d) Provincial administration { }

5. How is the support from immediate family members?

a) Low { }

b) Medium { }

c) High { }

6. Who selected you as a community Health Worker?

a) Community { }

b) CHC { }

c) MOH/Donors { }

e) Others specify .....

7. Does the community recognize the services you offer to them?

a) Yes { }

b) No { }

8. Do community members show you respect when you are attending to them?

a) Yes { }

b) No { }

If yes, how? -----

9. Are there some cultural beliefs in the community that are in conflict with organization's policies?

a) Yes { }

b) No { }

If yes state them.....

**Health Systems factors**

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

a) Yes { }

b) No { }

If yes, which one?

a) Community Strategy { }

b) Community dialogue { }

c) Home Case Management { }

d) Others specify.....

2. Did you get appointment letter when you this job started?

a) Yes { }

b) No { }

3. How many times are you supervised per month?

a) None { }

b) Once { }

c) 2 times { }

d) 3 times { }

e) More than 3 times { }

4. Who is mainly involved in supervising you?

a) CHC members { }

b) CHEW { }

c) MOH officials { }

5. Do you feel that the supervision you get is enough?

a) Yes { }                      b) No { }

6. Do you get feedback from your supervisor?

a) Yes { }                      b) No { }

7. In your opinion does your supervisor give you adequate support and attention?

a) Yes { }

b) No { }

8. Do you receive results on performance appraisal that is conducted on quarterly basis?

a) Yes { }

b) No { }

9. When changes are made in the way things are done, do management always first informs the people who will be affected.

a) Yes { }

b) No { }

c) Not sure { }

10. Do you get opportunities to make inputs into staffing policies and procedures?

a) Yes { }

b) No { }

11. Do you receive care and support in the form of counseling at the workplace?

a) Yes { }

b) No { }

12. How is your performance judged?

a) How much work you do { }

b) How long you work in a day { }

c) How well you do the work { }

d) No judgment is done on my performance

13. 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 { }

14. Where do you record your reports?

a) Paper { } b) Note book { } (c) Register { } d) Chalk board { }

(e) CHW Log book { } (f) none { }

15. How often do you submit your reports?

(a) Daily { } (b) Weekly { } (c) Monthly { } (d) Quarterly { }

(e) Annually { } (f) Never { }

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

(a) Yes { }

(b) No { }

17. How can you rate the workload that you handle at a given period?

a) Too much { }

b) Enough { }

c) Little { }

### **Economic factors**

1. Do you receive any cash payment on what you do for the community?

a) Yes { }

b) No { }

ii) If yes from who?

a) GOK { }

b) NGO/Donors { }

- c) Community { }
- d) Others specify .....

2. Do you receive any cash payment?

- a) Salary { }
- b) Stipend { }
- c) Allowance { }
- d) Others specify { }

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

- a) Community recognition { }
- b) Management of a commodity kit { }
- c) Career advancement opportunities { }
- d) Chickens { }
- e) Provision of a bicycle { }
- h) Others specify.....

4. 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 { }

5. Who would you recommend to deal with the remuneration of a CHW?

- a) CHC { }
- b) GOK/MOH { }

c) Community { }

d) Donors { }

e) Others Specify .....

6. Do you ask the community to buy some of the things like razors, cotton wool for you to be able to serve them?

a) Yes

b) No

7. What are other economic factors that hinder your performance?

**Environmental factors**

Please indicate with an X in the appropriate answer box, according to the following code definitions

- 1. Strongly disagree-SD
- 2. Disagree-D
- 3. Uncertain-U
- 4. Agree-A
- 5. Strongly agree-SA

| <b>Statement</b>  | <b>SD</b> | <b>D</b> | <b>U</b> | <b>A</b> | <b>SA</b> |
|---|-----------|----------|----------|----------|-----------|
| My work environment is safe and free from hazards                           |           |          |          |          |           |
| Good workplace layout   |           |          |          |          |           |
| Necessary instruments are available   |           |          |          |          |           |
| Instruments in working conditions   |           |          |          |          |           |
| Materials and supplies are sufficient                                       |           |          |          |          |           |
| Antiseptic hand solution for protection of staff and patients are available |           |          |          |          |           |
| Infection control strategy guidelines available                             |           |          |          |          |           |

- 2 How many households do you cover in a day?
  - a) Less than 3
  - b) 3-5
  - c) 6-10
  - d) More than 10
- 3 How do you move from household to household during your visits?
  - a) By foot
  - b) Using a bicycle
  - c) Using motorbike
  - d) Boarding vehicles (PSV)
- 4 What is your daily coverage in kms during your visits?
  - a) Less 3km
  - b) 3-5 km
  - c) 5-7 km
  - d) Above 7 km
- 5 What mostly hinders your movement during your visits?
  - a) Rugged terrain {}
  - b) Wild animals
  - c) Rivers/streams crossing
  - d) None of the above



## **APPENDIX II: KEY INFORMANT GUIDE**

I am a student from University of Nairobi doing a research on the factors influencing performance of community health workers in Nandi hills sub-county. 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.

What do you think are the factors influencing the Performance of CHWs in health services delivery in Nandi Hills sub-county?

i. Any personal characteristics associated with Performance CHWs in Nandi hills sub-county?

ii. Any health systems factors that influence Performance of CHWs in Nandi hills sub-county?

ii. What are the socio-cultural factors associated with Performance of CHWs in Nandi hills sub-county?

### **APPENDIX III: FOCUSED GROUP DISCUSSION GUIDE**

**Number..... Ward.....Location..... Interviewer  
code..... Date of FGD.....**

I am conducting a study on the factors influencing Performance of CHWs Nandi hills sub-county. I will be asking you different issues about your overall experience, challenges and possible recommendations, in the services you receive from CHWs.

#### **In general what factors influence performance of CHWs?**

1. How has your life changed since introduction of CHWs in your communities?
2. How effective is governance of Health service delivery at level one?
3. What do you should be done for services you receive to be improved?
4. Kindly comment on the supplies and services you receive from CHWs
5. Any others issues?

**I thank you most sincerely for sharing your opinion**

# APPENDIX IV: RESEARCH CLEARANCE PERMIT

**THIS IS TO CERTIFY THAT:**  
**MR. FRANCIS KIPKOECH NGENY**  
**of UNIVERSITY OF NAIROBI , 311-30301**  
**Nandi hills,has been permitted to**  
**conduct research in *Nandi County***  
**on the topic: *FACTORS INFLUENCING***  
***THE PERFORMANCE OF COMMUNITY***  
***HEALTH WORKERS (CHWS) IN NANDI***  
***HILLS SUB-COUNTY***  
**for the period ending:**  
***4th December,2015***

**Permit No : NACOSTI/P/15/3396/6768**  
**Date Of Issue : 20th July,2015**  
**Fee Recieved :Ksh 1,000**



**Applicant's  
Signature**

**Director General  
National Commission for Science,  
Technology & Innovation**