

**Determinants of uptake of Health care insurance among households in
Kibera Informal settlement, Nairobi County.**

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Science in Public health in Jomo Kenyatta University of
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DECLARATION

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

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DEDICATION

To my beloved parents; Mr. Mourice Wasike and Mary Wasike who taught me perseverance and hard work, as virtues to uphold. Special dedication also goes to my beloved brothers and sisters for their encouragement and support during this journey.

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ABBREVIATIONS AND ACRONYMS

AAR	Africa Air Rescue
ACA	Affordable Care Act
AIDS	Acquired Immuno deficiency Syndrome
CBHF	Community Based Health Fund
CBHI	Community Based Health Insurance
CBHIS	Community Based Health Insurance Scheme
CHE	Catastrophic Health Expenditure
CHF	Community Health Fund
ERC	Ethical Review Committee
GOG	Government of Ghana
GOKHS	Government of Kenya Health Systems
HIV	Human Immuno deficiency Virus
IFC	International Finance Corporation
IFRA	Institute of French Research in Africa
KCBHFA	Kenya Community Based Health Financing Association
KDHS	Kenya Demographic and Health Survey
KES/Ksh.	Kenya Shillings
KNBS	Kenya National Bureau of Statistics
LMIC	Low and Middle Income Countries
MOH	Ministry Of Health
NCD	Non Communicable Diseases
NHIA	National Health Insurance Authority
NHIF	National Health Insurance Fund
NHIS	National Health Insurance System
NHIS	National Health Insurance Scheme
NSHIF	National Social Health Insurance Fund
OOP	Out Of Pocket
SACCO	Savings and Credit Cooperative Society
SDGs	Sustainable Development Goals
SHI	Social Health Insurance

SHIB	Social Health Insurance Benefit
SPSS	Statistical Package for the Social Sciences
SSA	Sub Saharan Africa
SSPSF	Social Security and Pensions Scheme Fund
TIKA	Tiba kwa Kadi
UHC	Universal Health Coverage
UN	United Nation
UNDP	United Nations Development Programme
UNEG	United Nations Expert Group
UN-HABITAT	United Nations Human Settlement Programme
UNHSP	United Nations Human Settlement Programme
US	United States
USD	United States Dollar
WHO	World Health Organization

DEFINITION OF TERMS

Health insurance cover it is an institutional and finance mechanism that helps households, individuals and institutions store privately financial resources to cater for medical expenses in case of illness.

Out of pocket payments (OOP) unbudgeted expenses paid by a person at the health care when they receive the services

Universal health coverage (UHC) it ensures that all people to be protected from financial risk, obtain full spectrum of quality essential health services and safe, effective quality and affordable medicines and vaccines.

Premium when agreed upon fees paid for coverage of medical benefits for a defined benefit period. It can be paid by employers, unions, employees, or shared by both the insured individual and the plan sponsor.

Medical expenses are the costs of diagnosis, cure, mitigation, treatment, or prevention of disease. These expenses include payments for legal medical services rendered by physicians, surgeons, dentists, and other medical practitioner, premiums you pay for insurance that covers the expenses of medical care, and the amounts you pay for transportation to get medical care.

Household one or more people living together in the same house and sharing meals or accommodation

Uptake accepting an intervention that is offered where in this study is the health insurance schemes.

ABSTRACT

Low and Middle-Income Countries have extended Health Insurance to people outside the formal sector to enhance access to healthcare. However, in spite of the relatively low costs of signing up and the benefits offered by the cover, up-take rates are very low among the informal settlements population. The study aimed at establishing determinants of health care insurance uptake among households in Kibera informal settlement, Nairobi County. A cross-sectional study was implemented in 166 systematically sampled households from approximately 2,400 residents' from one randomly selected village (Makina) out of the 12 villages within Kibera slum. A semi- structured questionnaire was administered to each household head, data was analyzed by descriptive statistics while figure and tables were utilized to present the results. Standard univariable logistic regression model was utilized to test the association between proportion of health insurance uptake and independent variables. The proportion of respondents who had taken up health insurance in the informal settlement were 27.1% (n=45). Significant relationships ($p < 0.005$) between health insurance enrollment and measured factors (measured as odds ratios (ORs)) were obtained as follows: compared to married respondents (OR=1), single, combined separated & divorced and widowed respondents were 68%, 86%, 62% respectively less likely to own medical insurance. Respondents who had attained post-secondary, secondary and primary education were 11.3 (95% CI, 2.25, 56.59; $P=0.014$), 2.3 (95% CI, 0.72, 7.3) and 1.6 (95% CI, 0.57, 4.26) times more likely to take up insurance compared to those with no formal education. Respondents working in the informal employment sector were 96% (95% CI, 0.00, 0.32; $P=0.0001$) were negative significantly associated with health insurance program. About a quarter (n=39, 23.5%) were indebted from health care expenses. In this study there was high distribution of slum residents (73%) with no uptake of health insurance as compared to the health financing strategy scheme 2007 whose coverage was 60-80%. Modifiable socio-economic factors dominated possible reasons for uptake/ non-uptake of health insurance. Thus, measures to improve households socio-economic status are needed in settings such as Kibera informal settlements. Further, there is need for policy makers to design health financing reforms targeting socio-economically vulnerable people within the context of universal health co

CHAPTER ONE

INTRODUCTION

1.1 Background information

Low and Middle Income Countries (LMICs) are increasingly prioritizing the attainment of Universal Health Coverage (UHC) (Sachs, 2012). The goal of UHC is to ensure that everyone has access to healthcare services that they need, of good quality, without the risk of financial ruin or impoverishment (WHO, 2010). This commitment has culminated in the inclusion of UHC in the Sustainable Development Goals (SDGs), which were adopted by world leaders in 2015 to articulate global development priorities until 2030 (United Nations, 2015). To achieve UHC, countries must expand the range of services they provide to their citizens, expand population coverage with a pre-payment mechanism, and reduce the proportion of direct costs that citizens pay to access healthcare services (Chan, 2016).

Countries across the globe have, therefore, adopted different health financing mechanisms, including social health insurance, to ensure universal access to quality and basic health care for their populace (Alhassan *et al.*, 2016). Developed countries such as Australia, Canada, Japan and Germany have been successful in adequately financing the health needs of their populace through a combination of public and private health insurance systems (Dalinjong and Laar, 2013), health care accessibility through health insurance in developing countries remains limited due to socio-economic challenges (Amu and Dickson, 2016). These challenges are especially experienced in Africa, a continent known to have a strong tendency for risk distribution across populations and time (Wagstaff, 2010). Thus, several African countries, including Ghana, Kenya, Nigeria, and Tanzania, are currently implementing various health insurance options at the general population level, most of which are public schemes (Lekashingo, 2012; Mulupi *et al.*, 2013; Aryeetey *et al.* 2016). In Sub Saharan Africa, majority of the population have not obtained more than 30% coverage of health insurance ((Evans and Etienne, 2010; National Health Insurance Authority (NHIA, 2011). Most schemes have successfully realized less than

10% coverage (De Allegri *et al.*, 2009). In Kenya, insurance coverage is 20% (MOH, 2015). It is also quite evident that in Kenya, a small proportion of informal settlement are enrolled in the health insurance program. Only 11% participated in health insurance coverage, those without any type of health insurance was high (89%) which underscores the essential program for fair access to health care among the impoverished population (Kimani *et al.*, 2012).

Paying for health care is a major problem in African countries, Kenya being one of them where by majority of people still use out of pocket (OOP) to pay their health care needs (Munge *et al.*, 2015; Onoka *et al.*, 2013; World Bank, 2013). Payment for health-care service by individuals in Kenya could be through several means including out-of-pocket expenses or prepayment through health insurance. This method of payment (OOP) is usually associated with non-utilization of health-care services, late presentation in health facilities, non-compliance of the drug regime and results in an overall poor health outcome. OOP payment affects individuals and households to deplete personal savings, borrow, dispose properties and livestock, and sometimes pay by instalments when agreed upon (Carapinha *et al.*, 2011). Access to health is worsened when the head of the household is affected where by basic needs of other members are negatively affected for example food consumption and child education (Sachs, 2012).

In Kenya, where 60 to 80% of the urban residents live in informal settlements (Slums) (Amendah *et al.*, 2014), out-of-pocket payments account for more than a third of national health expenditures (World Bank, 2014). When expenses incurred impacts overall welfare and increases risks of not recovering from existing resources hence slip deeper into poverty. (Kimani *et al.*, 2012). Paying for healthcare out of pocket, may push households into poverty with 6-10% of households reporting catastrophic spending on health (MOH, 2013).

Previous studies on uptake of health insurance reported that Age, married people, persons with higher income and people with higher education were significantly associated with the uptake of health insurance (Nyagero, 2012; Nyagero *et al.*, 2012). As one advances in age there is increase in uptake this may be due to an increase in purchasing power (Kimani *et al.*, 2012). Subsequently, majority of women of child bearing age (18- 45 years) are excluded from insurance (MOH, 2013). Secure employment, those in formal employment are more likely to have some form of medical insurance unlike those in the informal sector and those who are unemployed (Kiman *et al.*, 2012). Education increases uptake of health insurance where by educated people have both the ability to acquire skills & knowledge and also to make informed choices on health related matters pertaining to purchasing of health insurance (Bourne and Kerr-Campbell, 2010). Marriage usually increases the desire for health insurance to protect children, avoid catastrophic health expenditure, and likely to have higher combined income as compared to non-married persons ((Maina *et al.*, 2016; Ibok, 2012).

In areas (Rural & Informal settlements) where little information about the insurance companies is available, some people may be opposed to giving money to insurance companies in fear that the money will be misappropriated and they may not get the services paid for (Maina *et al.*, 2016). The registration in non- compulsory health insurance schemes is subject to the problem of selection bias through adverse selection (the practice of more unhealthy people joining health insurance) and cream skinning (a practice by insurers enrolling only the health people) and conveniently excluding the high risk population group consisting of aged, poor and women from the insurance program (Jehu-Appiah, 2011).This raises a big danger threat on the transformation towards universal health coverage in these countries (Evans and Etienne 2010; Savedoff *et al.*, 2012).

This study therefore sought to explore determinants of health care insurance in Kibera informal settlement, Nairobi County. Specifically the study sought to establish distribution of people without health insurance cover, proportion of households that had incurred debts and factors that influence uptake of health insurance. This outcome from the study will provide vital evidence to transform

health insurance to accord all population groups the access to quality and affordable health care services which will enhance access to quality healthcare as a fundamental rights in Bill of Rights and vision 2030 goals. In addition to that, it is also expected to contribute in advancement of knowledge about the informal settlements to the government of Kenya as it is in the strategy of caring out a universal social health insurance scheme.

1.2 Statement of the problem

Health is acknowledged as essential for human welfare and sustained economic and social development (WHO, 2010). When people have poor health, with lack of health service being one of the contributing factors, they often are vulnerable to poverty. At the same time, people seeking health services may incur impoverishing health costs (WHO, 2010). Ill health affects productivity and diverts households' income to seeking health services, thus negatively impacting on economic and social development (Sachs, 2012; Frenk and Ferranti, 2012).

The informal settlements and particularly in developing countries is characterized by low and non- regular, non- taxed incomes, insecure employment and self-employment without social security (Mukhwana, 2015). It is therefore, hard to evaluate the income of this group on the basis which social security contributions can be subtracted (Kimani *et al.*, 2014). In Kibera, there is low (11%) uptake of health insurance cover (Kimani *et al.*, 2012) hence many poor and vulnerable households easily resort to risky lifestyles such self-medication or irrational use of over-the-counter antibiotics. Settling of hospital bills indeed has become a problem for people who do not have health insurance cover. This calls for family members to organize for fundraising or sell home property to clear the hospital bill. For those who may be unfortunate enough they overstay in the hospital to wait for hospital waiver system to waive them thus there was need to establish determinants of health care insurance uptake among households in Kibera informal settlement, Nairobi County.

1.3 Justification of the study

To begin with, the findings will be significant to the government of Kenya's Ministry of Health Services whose main task is to generate policy and programs at the national level on Health in Kenya. Besides, the findings of the study will be instrumental in informing the County Governments' about the informal settlements policies, legislations and programs in matters related to universal access to healthcare at the county level. Moreover, the findings of the study especially to the target group, that is the poor and vulnerable households Kibera informal settlement in Nairobi County will be instrumental in eliciting the need to acquire and regularly use of health insurance cover in meeting health care cost they are persistently facing. The research will also add significant body of knowledge to other scholars conducting research in the field of Health Financing for informal settlements.

1.4 Research questions

1. What is the distribution of residents who have undertaken health insurance cover in Kibera informal settlements in Nairobi County?
2. What is the distribution of households that have incurred debts due to medical care in Kibera informal settlements in Nairobi County?
3. What are factors associated with uptake of health care insurance in households Kibera informal settlements in Nairobi County?

1.5 Objectives

1.5.1 Broad Objective

To determine the uptake of health care insurance and associated factors among Kibera slum dwellers in Nairobi County.

1.5.2 Specific Objectives

1. To determine the distribution of residents who have undertaken health insurance cover in Kibera informal settlements in Nairobi County.

2. To determine the distribution of households that had incurred debts due to medical care in Kibera informal settlements in Nairobi County.

3. To determine factors associated with uptake of health care insurance in households in Kibera informal settlements in Nairobi County.

CHAPTER TWO

LITERATURE REVIEW

2.1 Health insurance cover

Social health protection systems are structures that countries utilize to confront the challenges related to providing entrance to health care services to citizen, especially the poorest segment of the population (Abebe, 2013). Yet many poor households in developing countries lack access to mechanisms for pooling risks and suffer health related poverty in the wake of adverse health shocks (Kusi *et al.*, 2015). In absence of insurance, a high fraction of medical expenses are borne by households in the form of out of pocket payments, and financial constraints are significant barriers to access to healthcare in many Low Income Countries (Kimani *et al.* , 2012).

There is attention in whole world towards universal health coverage where by health insurance is contributory endeavors. Health insurance being one of the prepaid financing system, make sure that collective pooling of risks and redistribution of financial resources are well protected against the cost of illness (Ataguba and Akazili, 2010; Evans and Etienne, 2010). It also strive for equal opportunities to access to health care for all people (De Allegri *et al.*, 2009; Meng *et al.*, 2011).

Health insurance is gaining increasing attention as a health financing mechanism in LMIC countries reforming their health systems for UHC (Lagomarsino *et al.*, 2012). Proper health care financing system: protect the population by accessing to the healthcare, use the health services when needed and determines the existence of the health care services. It was due to this reason that World Health Organization 2005 developed their health financing system making sure that all people could access to services and not to suffer from financial hardship (WHO, 2010).

2.2 Health in informal settlements

It's estimated that up to one-third (1 billion) of the world's urban population live in slums. This therefore means that approximately one in every three urban dwellers live in slums (WHO, 2010). According to the United Nations Human Settlements Programme (UN-HABITAT, 2003) Slum populations have been projected to increase to about 2 billion in 2030. This demographic shift from rural to urban settings has major implications for health, and health equity. One of the most social exclusion in African cities is the rapid increase of slums and informal settlements. Therefore, slum dwellers who are needy is due to the various forms of exclusion they face.

The global assessment of slums undertaken by the (UN-HABITAT, 2010; UN –HABITAT, 2009) shows that 1 million or 37% of the city population of under developed nations resides in informal settlements. In Asia it ranges from 25% in Western Asia to 35% in Southern Asia. In Sub-Saharan Africa, has the highest proportion of 62% of city population resides in such settlements (UN-HABITAT, 2012). In Ghana, it has been estimated that about 43% of urban dwellers live in slums with 1.3 million in Accra (United Nations Development Programme (UNDP) & Government of Ghana, (GOG), 2012).

The United Nations Expert Group in 2002 operationally defined, Slum has five characteristics that is: insecure residential, poor quality of housing, overcrowding and inadequate access to safe water, sanitation and other infrastructure (UN-HABITAT, 2003). Also the UN legal and physical defined slum life characteristics as areas of great poverty, extensively substandard living conditions and areas of broader social disadvantage to children and their families with limited access to basic healthcare, schools and important municipal services; public transport, policing, playgrounds or recreational facilities, social problems for example fragmented families, low education, sexual exploitation, alcohol and drug trafficking. Furthermore also families usually experience high unemployment or informal employment, dangerous working conditions, violence, eviction also the families are prevented from enjoying their protection benefits from culture, extended family and community help (Unger and Riley, 2007).

A significant share of ill health in slums stems from poor access to sanitation and clean drinking water. In 2000, 30–50% of African urban dwellers lacked a safe water supply. Even where it is available, access to safe water is often unaffordable for the urban poor. Slum dwellers in cities in East Africa pay 5–7 times more for a liter of water than the average North America (WHO, 2008). Across Africa, 45% of the urban population lacked access to improved sanitation in 2000 (United Nation Human Settlements Programme, 2006). In Eastern Africa in 2006, open defecation was the only sanitation practice available to 33% of the population (UNHSP, 2008). This contributes to the contamination of water and land within cities as well as to many of the waterborne diseases prevalent in slums (UNHSP, 2006).

The general education level in slums is low, with only 48% of the population finishing high school and 34% not going beyond primary school, 10% Tertiary college and 3% University (Namuhisa *et al.*, 2014). Schools in the informal settlements are insufficient for huge population of children and some even has an average of 1500 children with class size of 50-60 pupils averagely. Unfortunately, majority of schools in slums begun as a business venture and do not truly meet their function as learning institutions—in most cases teachers are not trained (Zulu *et al.*, 2011).

Barriers to accessing quality health services and emergency services, especially for slum dwellers, often make it difficult for poor urban residents to prevent and treat these diseases. User fees, which are frequently charged by public and private health facilities are a daunting challenge, though not in surmountable (UN-HABITAT, 2009). The relatively fast growth in the urban areas of developing countries suggests that the challenges related to living in slums will deteriorate in those areas that are already most susceptible. With increasing slum populations, it is vital to address the growing disparities in health care access between different groups in cities (WHO Commission on Social Determinants of Health, 2008).

2.2.1 Health in informal settlement Nairobi, Kenya

Nairobi being the capital city of Kenya has been increasing rapidly in regard to population growth expansion in both socio economic structure and political outlook. The major problem is lack of job opportunities in the rural areas resulting in urban migration which worsens the situation. Therefore as a results of that you find that majority of people in town are unable to get the well-paying jobs hence resort to seeking employment in neighborhood manufacturing industries and other casual jobs where by they are low paid. Due to low income, the city residents opt to reside in slums (Sheuya, 2008). Some of informal settlements in Nairobi are Korokocho, Mathare, Mukuru, Kawangware, Soweto, and Kibera, which is the largest.

The prompt concentration of people in informal settlements has created social and medical problems. Life in the informal settlements has the following characteristics: Many people are driven to the city by poverty and start their city life in the worst areas. Overcrowding, lack of drainage and sanitary systems cause conditions hazardous to health (Zulu *et al.*, 2011). The demand for water and sanitary disposal services is acute. Majority of slum households fetch water from a standpipe and deposit their waste in open drains. Also the rate of infection is high leading to epidemic (UNHSP, 2006).

City slums may geographically be close to healthcare facilities, yet residents are deprived of access to needed health care resulting in negative economic and health consequences. The overcrowding and poor housing coupled with the dirt and squalor and lack of financial resources contribute to the presence and spread of varied infectious diseases in slums, affecting women and children mainly (Unger and Riley, 2007; Sheuya, 2008; Sverdlik, 2011; Zulu *et al.*, 2011) Maternal mortality, high vulnerability to HIV infection, high unmet need for family planning and developmental challenges in children and adolescents are some of the negative results of poor access to health in city slums.(Zulu *et al.*,2011;

Skordis- Worrall *et al.*, 2011; Mathews *et al.*, 2010; Halder *et al.*, 2009). Slum dwellers face higher developmental challenges such as high morbidity and infant mortality rates than either non slum dwellers or the rural population. Example in Nairobi, children less than five years living in slums are three times more likely to die compared with their colleagues living in other parts of the city (WHO Commission on Social Determinants of Health, 2008).

Majority of Slum dwellers restricted on cash for their food. As incomes are very low, children are malnourished, the percentages of underweight, stunting, and wasting in children who are below five years in Kenya was 11%, 26 % and 4% respectively (KDHS, 2014). Children are fed in the care of their older peers or themselves because most mothers are not at home.

According to Unger, (2007), reported that poverty is prevalent in the slum areas as there are poorly designed houses with weak building materials, poor spacing and insufficient ventilation. Houses are crowded and every space of land utilized. Just a few years ago, flats have come out in the slums; there are no roads, proper garbage collection equipment and solid waste disposal facilities, also there is no drainage of storm water, thus in rainy seasons some loosely structured houses are carried away by floods (UNHSP, 2008). The informal settlements have no access to urban sanitation services and thus why even the Nairobi city council cleaning services do not cover the slums and as a result the residents throw solid waste in open drains, the liquid waste emitted from houses into the lanes, leading to pools of dirty waste (Zulu *et al.*, 201).

Furthermore, electricity is not appropriately connected, and due to its illegality, most are dug underground and sometimes exposed (Patel and Burke, 2009). Majority of the people use kerosene, charcoal or firewood for cooking, in the corner of the houses or outside. Most eat food without remains, in case of remains, food is stored poorly due to lack of storage facilities, exposing it to dust and flies. (Zulu *et al.*, 2011).

There are no public health facilities in the informal settlements. Around the slums you can get the following medical institutions: one national hospital, one

governmental district hospital, one health center and several private clinic. Due to its scarcity, it serves most of the dwellers because it is affordable, provides laboratory services and medicaments at a cheaper price as compared to the private. The place and nature of the people's work make it difficult to balance between their health needs and their economic needs. This is especially a problem for breadwinners who are paid only for what they contribute; a day off means missing the day's salary, hence the cheap private clinic is not sufficiently utilized (Saito *et al.*, 2014).

2.3 Types of health insurances

2.3.1 Community based health insurance

It is a type of health insurance schemes that is commonly supported by informal workers and those in rural communities especially in African countries. Community Based Health Insurance (CBHI) schemes are known for the principal role of a community's involvement in raising, pooling, allocating, purchasing and supervision of the health financing arrangement. The funds are used to meet medical expenses in the event sickness strikes one of its members or dependents. In Kenya, it's the smallest and newest in the country, established in 1999 and covers only 1.2% of those enrolled in health insurance schemes. These schemes are registered under the Ministry of Gender and Youth Affairs (Kenya Healthcare Report, 2016). An example of such community-based insurance scheme in the country is the Jamii Bora Health Insurance scheme (Mwaura & Pongpanich 2012). CBHIS is common in countries like Rwanda, Tanzania, Burkina Faso and Ghana perhaps unveiling the reason as to why the uptake of health insurance in these countries is high. Studies undertaken in these countries reveal that CBHIS is popular among the poor, marginalized, women and children (Mathauer *et al.*, 2008).

2.3.2 Private health insurance

Private insurance companies are the second largest health insurance providers in Kenya. They are for-profit and non-profit firms offered on individual or group basis. Although private health insurance companies have been in existence from time in memorial, they become popular in Kenya around 1980s. By the year 2016, private

insurance companies covered only 9.4% of the individuals enrolled in health insurance schemes. The country had 51 registered private insurance companies with only 29 offering health insurance by the year 2013 (Ndungu, 2013). Despite a large number of these companies, only a small percentage of the population is enrolled. This might be connected to the high premiums charged by the insurers and lack of awareness of its existence which blocks out the poor and those in rural areas from taking up health insurance from the private insurance companies (Mwaura & Pongpanich 2012).

The top most medical insurance providers in Kenya include Jubilee, Madison, Resolution and AAR insurance companies. Private insurance companies have also undergone several transformations in an effort to capture a large market base. Some of the transformations include partnering with financial institutions especially the banks so as to increase the availability of its services to the public. Private insurance companies have also improved in consumer awareness of their existence through vigorous advertisement as most people are unaware of the products they offer. They are also educating people on the key issues of health insurance as the insurance industry is still viewed with a negative perception among individuals (Mwaura, 2015).

2.3.3 Social health insurance

It's among the options of social health protection systems where monies are pooled into a common fund and used for paying for healthcare costs of members. The contributions are collected from: workers, self-employed individuals, businesses, and in some case the government, specifically where a universal coverage model is approved (Kirigia *et al.*, 2006). It is usually distinguished from general revenue funded system by the presence of independent or quasi-independent insurance funds, a reliance on compulsory earmarked payroll contribution and a clear link between these contributions and a set of defined rights for the insured population.

2.4 Health insurance coverage

2.4.1 Health insurance coverage in developed countries

High income countries have a rich history of financing reforms as their systems have evolved from community based voluntary insurance arrangements to public insurance funds to social or national health insurance-based financing systems (Breyer, *et al.*, 2012). With the exception of the US, all developed countries have universal coverage for their own citizen through their primary insurance coverage approaches 100% of the population in Canada, Germany, Japan and Singapore, while only 83% of the US population has coverage (Bussel, *et al.*, 2007). The 2010 Affordable Care Act (ACA) in the US increased the percentage coverage (Davis *et al.*, 2010).

2.4.2 Health insurance coverage in developing Countries

Currently there are strong international calls for the reform of health systems towards universal coverage and health financing schemes to ensure equity in access to care. In its 2010 World Health Report, the World Health Organization listed three fundamental barriers that hamper countries from reaching universal coverage: the limited availability of resources; an over-reliance on direct payments at the time people need care; and the inefficient and inequitable use of resources (WHO, 2010). The majority of the burden of disease and disability in developing countries could be considerably less if quality health care services are accessible and could be used without any form of hindrance.

In low- and middle-income countries (LMICs), the majority of health insurance schemes are unable to extend coverage to every segment of the population (Hsiao *et al.*, 2007). In Sub Saharan Africa, majority of the population have not obtained more than 30% coverage of health insurance (National Health Insurance Authority (NHIA) 2011). Health insurance coverage in Kenya remains low at 19.59 (Kazungu & Barasa, 2017); 88.4% of those with health insurance are covered by the NHIF, while

11.6% are covered by private insurers (Ministry of Health, 2014). The low health insurance coverage is perhaps not surprising given that Kenya, like most LMIC countries has a disproportionately high informal sector population.

One major global response to address this problem has been the implementation of prepayment schemes especially in low-and-middle income countries (LMICs) where majority of the population without health insurance lives (WHO, 2010). Since the mid-1990s, several LMICs have been implementing various types of health insurance programmes as a response to the global effort to move away from the reliance on out-of-pocket payment for health towards risk-pooling and risk-sharing arrangements (Escobar *et al.*, 2010; Acharya *et al.*, 2013). Example, countries such as Ghana have their health financing systems adjusted towards attaining health protection for the poorest and other disadvantaged populations (Durairaj *et al.*, 2010). Its financial contributions are developed in a way that they are classified on the basis of people's ability to pay, the rich and the healthy support the poor and the sick, and the economically active adults paid for the children and the aged (WHO, 2010). Thus it assure that the poor are protected from the burden of paying for health care services. Funds meant for health are allocated in the budget with a 5-year program of work; over 30% of this is conveyed to the NHIS. Other sources of funding include individual contributions to the Social Security and Pensions Scheme Fund (SSPSF) and payments by the Ministry of Finance for exempted persons (GOG, 2009).

Health care is also financed through health insurance schemes and tax funding systems (Mills *et al.*, 2012). For instance, Tanzania has a mandatory scheme, the National Health Insurance Fund (NHIF) which covers all public servants and up to 5 dependents. The fund is financed by a 6% of salary contribution equally shared between the employee and employer. Another scheme, Social Health Insurance Benefit (SHIB) covers private sector employees. Both the SHIB and the NHIF offers outpatient and inpatient care, but the NHIF covers access to over 5500 facilities nationally, while the SHIB covers only 264 (World Bank, 2011). Informal sector workers in Tanzania have a separate health insurance scheme from the formal sector.

The Community Health Fund (CHF), a government voluntary scheme targets the informal rural population while the urban informal sector has the Tiba kwa Kadi (TIKA) scheme (Borghi *et al*, 2012). Contributions to the CHF are determined at the council level, and each household render the same amount regardless of ability to pay, giving them access to free health care at primary public health facilities (Mills *et al*, 2012).

Health care finance in developing countries is defined by out of pocket payments and lack of health insurance and this leads to borrowing as per (WHO, 2012). In the lack of health insurance, the expenditure obtained on illness can both impact the overall welfare and increases the risk of not regaining from existing resources thus infiltrate deeper into poverty. According to UN, (2015) stated that borrowing money is usually source funds to pay healthcare costs, when the impacts are severe can lead to indebtedness. It is now recognized that health care expenditures can impoverish individuals and households.

The Kenya National Bureau of Statistics, in the year 2009, recorded total population was 38.6 million (Kenya National Bureau of Statistics, 2010). It was stated by World Bank, (2010) that in Kenya, more than four out of 10 (46.6%) people are impoverished. Also data from the national health accounts displayed that more than a third of the poor who were ill did not seek care in contrast to only 15% of the rich (World Bank, 2010).The majority of Kenyans hence pay for health care by out of pocket for outpatient services or through harambees for in-patient expenses especially when the bills are high. Among low income earners, this is an uphill task considering that they have limited resources (Mungai, 2014).

As reported by the 2005/06 national health accounts, the out-of-pocket expenditure constituted more than 29% (Government of Kenya Health Systems 2010 Project). As a result of this high reliance of OOP, 4.52% of the Kenyan population incurs catastrophic health expenditures, while 453,470 individuals are pushed into poverty annually because of healthcare payments (Barasa *et al.*, 2017). Based on the previous studies, it revealed that the poor are anticipated to get sick, rarely to use preventive and curative health care, and therefore, have higher mortality rates. As stated by

these studies, one of the factors liable for these challenges is out-of-pocket payments for health care (Ziraba *et al.*, 2009)

2.4.3 Health insurance in Kenya

The NHIF is a government corporation that was established in 1966 to provide mandatory health insurance to formal sector employees (IFC, 2011), and its mandate later expanded to cover informal sector workers in 1998 (IFC, 2011). From the year 1966, NHIF has undergone tremendous transformations in ensuring that it is accessible to all the citizens. Some of the remarkable transformations include the use of Information Technology to ensure efficient communication and faster enrollment of the members. It has also partnered with various organizations in order to subsidize its services and opened its branches countrywide so as to ease accessibility by the citizens (Kenyan Healthcare Report, 2016). For the civil servants and formal sector employees, contribution and membership is compulsory, their contributions are made based on their income, but usually range between Kes.150 to Kes 2, 000 per month (approx. USD 2.00 to USD 24.00). Those in the informal sector and retirees it's voluntary, they pay a flat rate of Kes 500 per month (approx. USD 4.90). The NHIF pays both for inpatient and outpatient costs at selected hospitals (mostly government).

There is increased knowledge about NHIF amongst the Kenyan population survey indicated by (WHO, 2010) but the challenge is the cost incurred by individuals in travelling to NHIF offices for enrollment are prohibitively high. There are 31 fully automated NHIF branches in Kenya and an additional 82 service points which exist in hospital and community centers to which beneficiaries can pay premiums, update membership and receive other forms of customer care services (Joint learning Network on universal Health, 2010).

NHIF was established with an aim of using risk pooling (insurance) to finance health care which initially targeted the formal sector which was mandatory by law and later progressed to target the informal sector (GOKHS, 2010). Their function is to collect revenue, pool the funds and purchase health care on behalf of its members, and are also

responsible for determining the premium rates and benefits packages. Many Kenyans have had to directly pay for health services whenever they need them; this has led to catastrophic spending to a level of impoverishing the family unit through sale of assets and diversion of their meager income into health care services (Archaya & Vellakal, 2013).

The Kenyan government has made a decision to use the NHIF as one of the key strategies for scaling up population coverage with a prepayment health financing mechanism (Ministry of Medical Services, 2012; Munge *et al.*, 2017). This means that the government of Kenya, and the NHIF have to confront the informality problem and develop strategies to expand coverage among the informal sector. Thus why it is the most generally accessible medical cover in the country, with more than 1400 approved hospitals with both government, faith-based and private ones.

Payment levels differs across hospitals, but fall under three categories (Joint Learning Network on Universal Health Coverage, 2010). The first category applies to primarily government health facilities and beneficiaries accessing services in these settings are comprehensively covered. The second categories includes faith based hospitals and some private hospitals (mostly in rural areas), where NHIF members also have comprehensive coverage but surgery costs are not covered. The surgery costs are covered on a copayment basis and payments are usually based on a capped amount. Finally, the third option focuses on medical services offered by high-cost private hospitals, where the NHIF provides a daily debate for hospitalization which ranges from Kes. 400 to 2,000 per day (1 USD = 85 Kes May, 2011) for a maximum of 180 days per beneficiary per each member. Any costs above this amount have to be done directly by the beneficiary.

Besides covering the principal member, the NHIF program also covers the principal's dependents, including the spouse and children (under and over 18 years). Nationally, in 2010, an estimated 2 million primary contributors and about 8 million dependents were enrolled in the NHIF program, with a majority (about 74%) residing in the

urban areas. Besides the NHIF, in Kenya, individuals can access health insurance through private insurance firms and some extent `community-based health insurance (CBHI) organizations. Due to cost considerations, private health insurance is predominantly accessible to the middle and higher income groups (Kimani *et al.*, 2014). Community-based health insurance is relatively new in Kenya having been established in 1999, and as a result it has limited coverage (Mathauer *et al.*, 2008).

According to the Kenya Community-Based Health Financing Association (KCBHFA), currently there are nine institutions offering community health financing schemes with 410,997 beneficiaries or about 1% of the total Kenyan population covered. Regardless of this small coverage, KCBHFA has been seen to play a big role in the transformation of National Hospital Insurance Fund towards the National Social Health Insurance Fund.

Marketing micro-insurance requires that products are developed to suit organised groups like farmers or casual workers to knock out the high cost of administration for low-priced products and win higher numbers with a single sale. The benefit of marketing through organized groups is the advantage of pooling resources hence making it easier for the members to access health insurance. Under Linda Jamii, for Kes 1, 000 (\$11.7) per month, or Kes12, 000 (\$141) annually, users and their families are entitled to out-patient benefits worth Kes 50,000 (\$588) per year and inpatient benefits worth Kes 200,000 (\$2,352) per year (Mungai, 2014). This leaves out individuals from informal settlements who are not in any form of organized groups and makes it a challenge for them to access and afford health insurance.

2.4.4 Health insurance in Kenya's informal sector

It is essential to generate devices which will include more workers from the informal sector in health insurance schemes. Some developed nations have attained this levels of success in universal health through health insurance. However, international evidence has shown that it is problematic to achieve high coverage among the informal sector using a voluntary, contributory mechanism for several reason

(McIntyre *et al.*, 2013). One, a significant proportion of informal workers are less well-off, compared to formal sector workers and therefore have a lower ability-to-pay for health insurance (Alkenbrack *et al.*, 2013; Oxfam, 2013). Two, given that the informal sector is not organized in sizeable groups, it is administratively difficult to recruit, register and collect regular contributions in a cost effective way. Membership and premium payment is therefore often voluntary leading to low uptake, poor retention and adverse selection (Jowett, 2015; Lagomarsino *et al.*, 2012). Three, informal sector worker incomes are often unpredictable, (Lagomarsino *et al.*, 2012), which makes it difficult to collect premiums regularly and increases attrition rates among this population. Voluntary insurance contributions therefore present a fairly small percentage of overall health revenues, even in countries that continue to attempt to collect them (Jowett, 2015; McIntyre *et al.*, 2017). Despite these challenges, an increasing number of Sub-Saharan African countries have either established, or are in the process of establishing a contributory public health insurance scheme. For example, Ghana, Kenya, Nigeria, Rwanda and Tanzania have contributory public health insurance schemes, while South Africa, Swaziland, Lesotho, Sierra Leone, Liberia, Zambia, Uganda, Bukina Faso and Zimbabwe are considering establishing one (Lagomarsino *et al.*, 2012; Tetteh, 2012).

For the government to obtain universal coverage, it recommended the National Social Health Insurance Fund to give people access to high quality hospital care and pool risks among the rich and the poor. According to Hsiao *et al.*, (2007), stated that compulsory contribution to the scheme would have been reduced on one's income, regardless of whether in informal or formal employment and every person would receive hospital care without paying user fees. So far Kenya has not attained universal coverage in health care through NHIF: Due to low membership, because it has not been able to reach out to majority of Kenyans, especially the poor and those in the informal sector (Mathauer *et al.*, 2008); Also as a result of some rules and regulations of the informal sector especially those in the building construction industry. For example, where by you find the NHIF imposes a penalty that is five times the contribution amount for those who make their payments late hence it disseminate negatively especially on the poor, the unemployed and casual workers in the informal sector. (Chuma & Okungu, 2011).

As the government of Kenya endeavors to achieve universal health coverage by 2030 (Ministry of Medical Services, 2012), the informal sector workers should be considered since most are not covered by health insurance programs where by in real they are feasible contributors within the national health insurance programme. In some other countries, like Taiwan it has succeeded to enroll them through collection of premiums from part time jobs, also in Kenya workers in the transport industry have successfully pooled resources though they have non-regular incomes (Mathauer *et al.*, 2008).

Kibera is one of informal settlements in Kenya, the environmental situation is such that the terrain is hilly and sometimes steep which complicates the building process. Residential structures encroach on the riparian areas of the river. There is poor and almost non-existent liquid and solid waste management for both residential and commercial purposes. Unorganized dumping of human and medical waste as well as waste water causes perpetual degradation of the environment and water quality. Where they exist, pit latrines are located inappropriately close to water sources affecting the general environment and community health (Unger and Riley, 2007).

Economically, about three quarters of Kibera's households earn less than Kes. 10,000 per month; with an average of five people per household, this translates to approximately one dollar per person per day (Sverdlik, 2011). With high rates of unemployment in the country, the proportion of Kibera residents engaged in employment mainly depends on the informal sector or engage in casual labor in the surrounding industrial estates and middle class households (Sheuya, 2008). This poses a challenge for most households in affording basic needs where three square meals is rare occurrence. Health seeking behaviors are also affected with individuals seeking alternatives to modern medicine which is sometimes not affordable or seeking help when it is almost too late (Mathauer *et al.*, 2008). There are high rates of unemployment, low income levels, poor infrastructure and poor living conditions in Kibera and this leads to high levels of stress, frustration and destitution. This worsens the already prevailing social challenges in that the Kibera residents live under. Crime and insecurity is also significantly high with sexual gender based violence prevalent. HIV/AIDS prevalence is also high at 14% (Pelterson, 2011).

2.5 Factors associated with uptake of public and private insurance

Health insurance systems in many Low- and Middle-Income Countries (LMICs), including in Sub-Saharan Africa, are nascent and face challenges in achieving broad population coverage. These challenges include extending coverage to the large sector of informal workers present in many LMICs (Dror and Firth, 2014), low re-enrollment rates among clients (Agyepong *et al.*, 2016), mistrust of the public health system (Mulupi *et al.*, 2013) and government transparency in managing Social health insurance (SHI) systems (Abuya *et al.*, 2015), and difficulties securing sustainable government funding (Lagomarsino *et al.*, 2012). Further, there is potential for the push towards UHC to increase the health coverage gap between rich and poor if poor populations do not have adequate access to health insurance schemes (Kruk, 2013) or cannot afford them when they do (Kusi *et al.*, 2015).

Studies conducted in a number of Sub-Saharan African countries show that employment in the formal sector was significantly associated with access to health insurance relative to being employed in the informal sector (Mathauer *et al.*, 2008). This was connected to factors such as low and non-regular income, insecure employment and factors associated with the insurance scheme that are not adapted to people's needs and preference (Kimani *et al.*, 2012). There are different mechanisms used to raise and collect funds by people in the informal and formal sector which include participation in moneylending institutes such as SACCOs for those in the formal sector and community based savings groups called merry go rounds which according to several studies are important predictors of participation in health insurance (Dekker & Wilms, 2010 ; Leatherman & Dunford, 2010). These institutions enable the people to boost and compile funds for various purposes including payment for insurance premiums, emergencies such as hospital care and funeral costs (Mungai, 2014).

According to Deloitte (2011) in the National Social Health Insurance Strategy Report, the mechanisms to increase accessibility to collection points for those in the informal sector to include collection by various organizations that are close to the population which include; cooperative societies, welfare organizations, trade

associations and churches as they may collect the contributions more effectively than NHIF branch offices. These organizations will be contracted and enumerated to offer these services and others will be licensed to issue or stamp the social health insurance cards. Adequate mechanisms will be established to confirm that the contributions collected by these organizations are transferred regularly to the NSHIF.

Several studies have been undertaken to investigate factors that influence uptake of health insurance in Kenya. Kimani *et al.*, (2014) study on the ownership of health insurance scheme among women revealed that socio-demographic factors, wealth level and the form of employment have an influence on the uptake of health insurance. Women employed in the formal sector were positively associated with uptake of health insurance. The aged, married, those with high levels of education and the households headed by females had a higher level of health insurance ownership. Another study by Ndung'u (2015) argued that uptake of NHIF in the informal sector was influenced by age, gender, education level, income and awareness level. Also the study by Mutinda (2015) argued that the uptake of NHIF among individuals depended on their level of awareness, the amount of premium charged and the consistency of their income.

Adebayo *et al.*, (2015) opinion were that the uptake of community-based health insurance (CBHI) in low and middle-income countries was determined by demographic and systematic factors of CBHIS. Those with low income, low levels of education, the aged, females and those with a small household size were less likely to undertake CBHIS. Low uptake was also associated with mistrust of the CBHIS and poor health care quality. The study by Kinyua (2013) aimed at determining the influence of demographic factors on the uptake of community based health financing schemes in the Country. The study reviewed relevant literature by various researchers and institutions on biological factors, level of education, socio cultural, level of income and their influence of the uptake of the CBHF. The findings showed significant barriers which included cost of the premiums, chaotic administration of the district schemes and lack of direct involvement of informal workers in either the design or the ongoing management of the scheme. Another study by Fenny *et al.*, (2016) on factors influencing the low uptake and renewal of health insurance in

Ghana found out that sociocultural and systematic factors were the main determinants of uptake. From the results, low uptake was likely high among the aged, disabled, and other factors: Religion, cultural norms, weak National Health Insurance System and inadequate health facilities within the vicinity of the individuals.

Scientifically tested literature shows a consistency in factors such as socio-economic and demographic characteristics of the household which include income level, education of household members, employment, health status, presence of children and aged, marital status, and sex of household head as significant determinants of demand for health insurance (Osei-Akoto & Adamba, 2011; Jehu-Appiah *et al.*, 2011; Sarpong *et al.*, 2010; Richardson *et al.*, 2011). The explanation is that people with lower socioeconomic status find it difficult to purchase the insurance premium (Chankova *et al.*, 2008). The NHIS of Ghana has been shown to be pro-rich (Odeyemi & Nixon, 2013). Similar results were also reported by; Gobah and Zhang, (2011) in Ghana and by Kiplagat, *et al.*, (2013), in Kenya which all showed that low socioeconomic status was associated with non-insurance.

Most of the literature on health insurance tells us that households whose heads have higher education tend to enroll in health insurance than households whose heads have low literacy (Gobah & Liang, 2011; Jehu-Appiah *et al.*, 2011; Kimach *et al.*, 2014). The understanding is that with higher education, people get to know more about their health including the advantages of health insurance and as such will most increase the likelihood of enrolment. Marital status of the household head has been shown to affect enrolment of its members. The assumption is that married persons combine resources and are able to enroll themselves and other members of the household (Owusu-Sekyere & Chiaraah 2014).

Age: The influence of age in health insurance is progressive across all forms of health insurance schemes demonstrating that purchase of health insurance increases with

age. Older people tend to increase their savings in health insurance just to reduce the rate of health decline. Furthermore variables such as education and income are expected to increase with age (Richardson *et al.*, 2011).

Gender: The literature is varied regarding sex and health insurance uptake. While some suggest that females are more likely to purchase health insurance (Jehu-Appiah *et al.*, 2011; Kusi *et al.*, 2015), others found that males are more associated with uptake of health insurance (Govender *et al.*, 2013). Males form the mainstream of participants without cover, signifying that males are risk takers. It is theorized that females mainly at the reproductive age claim more medical services and procure more of the insurance cover than men (Kimani *et al.*, 2014). Also study by Bourne and Kerr-Campbell (2010) in Jamaica reported that health insurance coverage is relatively based on the males in the household while the choice of insurance schemes determined by the gender where by males were selecting private alternatives whereas females having mutual schemes which are built on trust.

Wealth index: Household wealth status is an important determinant for health insurance ownership. The likelihood being insured increased as one moved up the household wealth index. Other studies have also showed that wealthier households had a higher likelihood of being insured (Kumi-Kyereme and Amo-Adjei, 2013; Sarpong *et al.*, 2010). Wealthier people usually prefers private schemes rather than any other option, this was stated by (Bourne and Kerr-Campbell, 2010) in a study at Jamaica.

Residence: Was found to play an important role by influencing the choice of health insurance in the study of (Kimani *et al.*, 2014). From various studies basing on residence have had different aspect, throughout Kenya, health insurance ownership among individuals residing in or near urban centers is twice likely to have a health insurance covers (MOH, 2014). Individuals located far from town additionally might not be aware of where to get health insurance due to low access to information in rural areas as well as lower purchasing power among rural dwellers (Masengeli *et al.*, 2017). Also through Kenya Health Report, 2016 stated that most of rural residents

are associated in mutual and statutory schemes due to their habit of coming together in social self-help groups while city dwellers are most associated with private health insurance cover, may be because they can afford it.

Income level and uptake of health insurance

Income is essential in social and economic determination of health. The level of income defines overall living conditions, psychological functioning and influences health related behavior which leads to effects to one's health and minimizes the ability to live a fulfilling life (Auger & Alix, 2009). In the study of Osei-Akoto & Adamba, 2011 reported that both in developed and developing countries household income is associated with the uptake of health insurance where by income highly determines the amount of health insurance purchased. In marginalized society especially in majority of the countries, the main barrier of access to health is financial constrain.

Global estimates indicate that every year, nearly 150 million people experience catastrophic health expenditure where household out-of-pocket remittance for health care consume such a proportion of their income that it forces them to forego other goods and services (WHO, 2010; XuK, 2008) while 100 million are pushed into poverty (WHO, 2010).

When laying out policy devices for health insurance uptake in Kenya, it's important to consider the following factors: Size of household, wealth index, education, awareness and employment. Furthermore, when you want to increase enrollment of health insurance schemes you will need policies that promote schooling and uplift in the living standards of Kenyans. As reported by Jehu- Appiah *et al.*, (2012) it's meaningful for policy makers to understand household perceptions related to providers, schemes and community qualities as they act as helpers or obstacles in their resolution to voluntarily enrollment. There is a lot of literature on Community Health Insurance and Private insurance around the world in comparison to Social Health Insurance which many countries especially in the developing world are in the process of implementing. Universal coverage involves among other things ensuring that health care benefits are distributed on the basis of need for care not ability to

pay. Understanding the extent to which health care benefits are distributed on the basis of need for care is thus an important policy question, which health systems should aim to address (Chuma & Okungu, 2011).

The poor are less likely to own health insurance as their expected pay off are less in the event they are sick since they can comfortably use self-treatment which can be cheaper than premiums they ought to pay (Atinga *et al.*, 2015; Jehu-Appiah *et al.*, 2011). Consequently, those with good health status and low income are also less likely to insure as the cost of the premiums is higher than the expected out of pocket payments and also that their affordability level is low (Boateng & Awunyor-Victor, 2013). Also a study by Kusi *et al.*, (2015) showed that people who perceive their health status as well are less likely to enroll in health insurance. Customarily, these persons may not see the need to insure themselves as they may not visit the hospital often.

Since the uptake of any type of insurance is low in developing countries, one of the important indicators is the rate of enrolment (Gine, 2007). According to Archaya & Vellakal (2013) the enrollment in voluntary health insurance which targets those in the informal sector is subject to problems of selection bias through adverse selection where more unhealthy people take up the insurance scheme due to its perceived benefits. This situation arises when there is asymmetric information which exists between insurers and consumers about individual's high risk and people who insure themselves are those who are more certain that they will make use of the insurance package (Wagstaff, 2010). This affects enrollment and utilization of the scheme (Saved off *et al.*, 2012).

Scheme level factors

Are those that arise from the organization and management of insurance schemes which can transform into either incentives or disincentives in the enrollment of health insurance. (Atinga *et al.*, 2015). In study on supply-side barriers related to schemes' design and management (for example, lack of clarity among scheme staff regarding the scheme's rules and processes, and requirements that claimants submit documents to prove the validity of their claims) to accessing benefits in a

community-based insurance scheme which affect take-up decision in the scheme (Macharia, 2017). A study by Jehu-Appiah (2012) indicated that those who are uninsured and were previously insured were less positive on the schemes benefits and concluded that this may be associated with their decision not to enroll and renew membership.

Provider involvement in care improvement

Technical arrangements made by scheme management have been proved to influences members perception about the benefit of the scheme. Most health insurance schemes operates in legal and political systems, based on mutual, non-written agreements that are monitored and enforced by members, hence you may find insured member who lacks technical capacities to manage a health insurance scheme and even unable to negotiate with providers for better care (Panda *et al.*, 2013). This usually affects the uptake of health insurance cover.

Source of information

According to Mathauer *et al.*, (2008) reported that the most crucial obstacle in the uptake of health insurance is the lack of knowledge among the informal sector workers, specifically when dealing with options and procedures. Likewise another study by Mathauer *et al.*, (2008) on demand for Social Health Insurance of informal sector workers in Kenya found that lack of information was the main obstacle to enrolment. Another study by Macharia, (2017) in Kenya found that for the health insurance to gain and retain their members who are in the informal sector, fast they have to rebrand and target indicators such as socio economic status which was found to be highly associated with the level of awareness and attitude of respondents.

Access to media

Access to information plays an important role of increasing uptake of health insurance cover. Exposure to the media through reading newspapers, listening to radio or watching television was associated with having health insurance (Kimani *et al.*, 2014). A study done by Nketiah-Amponsah (2009) in Ghana discovered that

awareness and knowledge about health insurance were associated with determinants of health insurance coverage.

Perceived quality of care

Obtainability of quality health care facilities and services among health care providers affects the enrollment of health insurance cover among the people of any particular country. As stated by Gobah and Liang (2011) in their study, found that majority of those who were insured were receiving good quality of service but unavailability of essential drugs and long waiting time were the barriers stated for the low quality of service received. Household heads who receive quality health care services will like to enroll in order to continue enjoying such services. The findings of Dong *et al.*, (2009) showed that persons who perceived the quality of health care they received as poor had a high probability of dropping out of a community health insurance scheme in Burkina Faso. Similar results on poor quality being the reason for dropping out of health insurance were also reported by Atinga *et al.*, (2015) in a study among urban slum dwellers in Ghana. Other studies have also implicated health care quality as a predictor of enrolment and sustaining membership in health insurance (Gobah & Zhang, 2011; Boateng & Awunyor-Victor, 2013; Mebratie *et al.*, 2015).

2.6 Conceptual framework

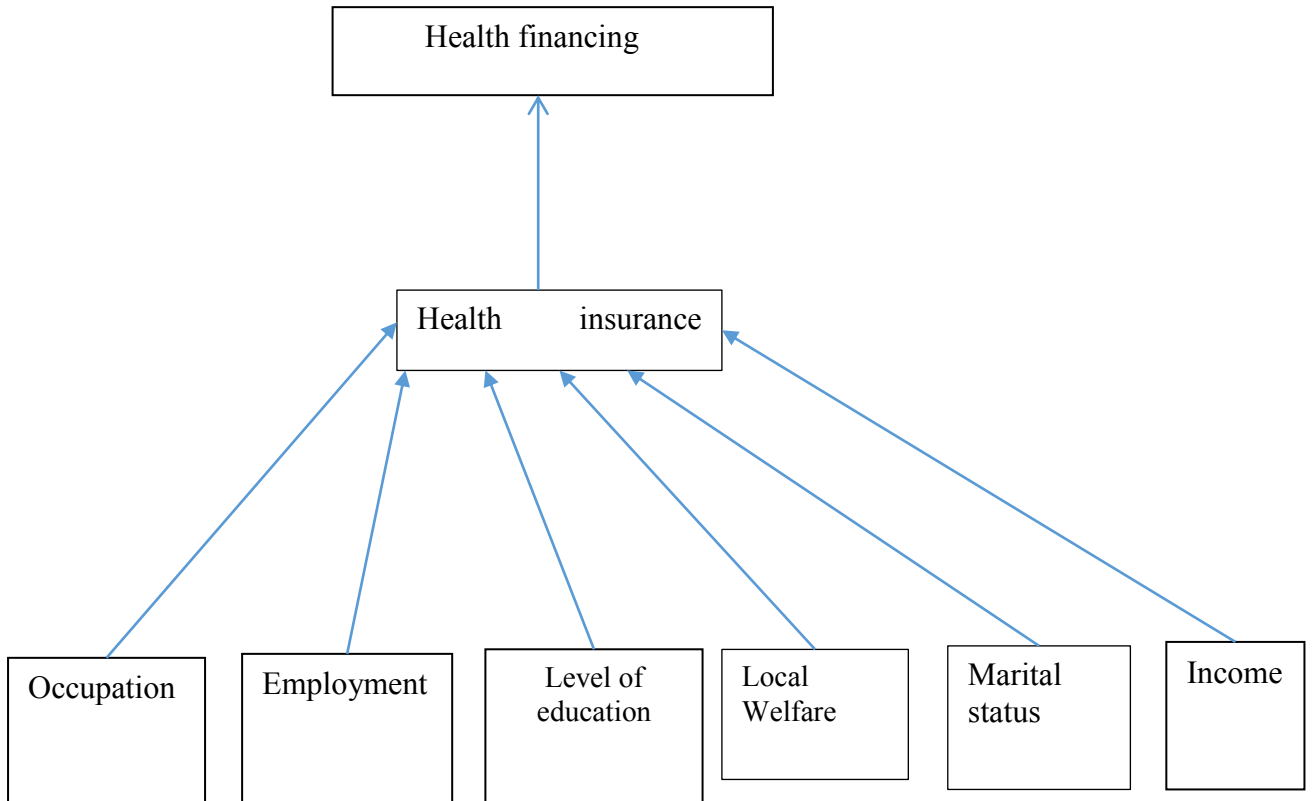


Figure 2.1 Conceptual framework

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study site

This study was carried in Kibera slum which is located 5 Kilometers southwest of Nairobi city center. It records less than 1% of Nairobi's total area but holds an astounding 1/4 of the population, is the largest slum both in Nairobi and Africa. From the administrative records, Kibera Slum is subdivided into 12 villages, namely, Kianda, Soweto West, Raila, Gatwekera, Makina, Kisumu Ndogo, Kambimuru, Mashimoni, Lindi, Lainisaba, Silanga, and Soweto East.

The study was done in Makina village within Kibera Slum (Appendix 1). The 2009 Kenya Populations and housing census puts Kibera's population at 170,070 people (KNBS, 2009). In a study by the Institute of French Research in Africa, (on whether Kibera is the largest slum in Africa) Kibera's estimated population was about 200,000 people.

3.2 Study design

This was cross sectional study which employed quantitative techniques for data collection.

3.3 Study population

All households in Makina village within Kibera slum. The total number of households was 2400.

3.3.1. Inclusion criteria

- i. Households heads
- ii. Age of 18 years and above
- iii. Willing to participate
- iv. Those who lived in Kibera for 1 year prior to the study

3.3.2. Exclusion criteria

Those willing to participate in the study but had mental illnesses, seriously sick were not included.

3.4. Sample size

All the selected households in Kibera slum had a chance of taking part in the study if selected through a systematic random sampling method. The sample size was calculated using Fisher *et al.*, formula, (1998) for cross sectional studies.

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

Where **n** = Sample size

Z = is the value corresponding to the 95% confidence level (usually taken as 1.96)

P = Prevalence of health insurance cover in Nairobi urban slums (11%)

d = Margin error at 5% (standard value of 0.05)

The Nairobi health insurance slum prevalence was 11% (Kimani *et al.*, 2012), used to determine the uptake and associated factors for healthcare insurance.

$$N = \frac{(1.96)^2(0.11)(1-0.11)}{(0.05)^2} = \frac{3.8416 * 0.11 * 0.89}{(0.05)^2} = \frac{150.437056}{0.0025} = 151$$

This sample size was adjusted for refusal at the rate of 10%.

Thus the final sample size was: **166** households

3.5 Sampling design

In this study, two methods were employed in sampling. These included simple random sampling and systematic random sampling methods.

3.5.1 Simple random sampling method

A sampling frame was obtained through the assistance of the Assistant County Commissioner 1 of Kibera sub county. Simple random sampling technique was implemented for the 12 villages to pick one village (Makina).

3.5.2 Systematic sampling method

Systematic random sampling was carried out on households to obtain a sample of 166 respondents. The village was divided into four quadrants labelled (N, E, W and S denoting the directional North, East, West and South cardinal points. Each quadrant was to share the sample size of 166 into 42 households per quadrant). Makina village had approximately 2,400 residents (from Ministry of Health Nairobi County not

published). This number was used in the sampling strategy as follows: Each quadrant was assumed to have 600 households and since we desired to include all quadrants in the study, this number was used to compute the skipping interval. The skipping interval was calculated thus by dividing 600 by 42 which yielded 14.

3.6. Methods of data collection and tools

3.6.1 Questionnaire

Using a semi-structured questionnaire (Appendix 4), data was collected from 166 household heads in Makina where the researcher was asking questions. The researcher administered the questionnaires and filled in the responses from the respondents on questions asked. Unique observations noted which was not found in the questionnaires, was recorded in a note book.

3.6.2 Proportion piling activity

Proportional piling is a participator technique that allows respondents to give relative scores to a number of different items or categories according to one criterion. The scoring was done by asking the respondent to divide 100 counters (beans, stones or similar items that are familiar to the community and locally available) into different piles that represent the categories. In this study, the proportion piling activity targeted relative income out of the total household income spent on medical expenditure. The researcher had the proportional piling question clear in the mind, Assume these 100 beans is the total household income for the last three months, please divide for me the relative income (without counting) that was spent on medical care. This was on the ground or on a flip chart. The researcher confirmed that this was the actual “relative” income used for medical care and the rest was for other expenses. The researcher then counted the beans representing the relative income that was spent on medical care and noted down. This was approximately the proportion of income spent on medical care. This was repeated in all households.

3.7. Data management and analysis

Households were given code for identification. Data was double entered into an Excel spreadsheet in a password protected computer. Back-up copies were stored in an external hard drive and compact disc which was in sole custody of principal investigator. The quantitative data was coded and analyzed using SPSS version 21 where the coded data was entered and analyzed based on the objectives of the study.

The data was analyzed by descriptive statistics while tables and figure were utilized to present the results. Logistic regression was used to determine associations between the dependent variables (distribution of participants with insurance) and independent variables.

3.8. Ethical considerations

This proposal for this study was submitted to the Ethical review Committee (ERC) of the Kenyatta National Hospital/University of Nairobi and it received approval in (Appendix 6). Permission to visit Kibera was obtained from Nairobi County. Permission was sought from the assistant county commissioner office which was to create awareness to the community about our household visitation. The main objective of the study was explained to the chief of the selected village and then the permission was sought out to recruit the households. The information on the study to households was presented in two languages {Kiswahili/English according to an individual's understanding. Informed consent/assent was obtained from selected households in Makina village within Kibera. The consenting process was explained to the participants in Kiswahili/English. A question and answer session was encouraged to ensure the participants had an understanding of what the study entail. It was expected that the information used in this study would do no harm to participants.

The participants were expected to willingly participate in the research. The subjects were told the truth and given all information in order to make an informed decision about participating or not. Identification of the researchers including address was included and identification of the number of subjects involved. The study subjects were households above 18 years. The findings will also be submitted to the Ministry of Health under County government to implement the policy.

CHAPTER FOUR

RESULTS

4.1 Social demographic characteristics of the respondents

A total of 166 subjects were selected for the study. This comprised of (n=57, 34.34%) males and (n=109, 65.7%) females. The subjects were aged between 19 and 85 years. The mean age of the 166 was 41.8 years, the largest proportion being within the age of category of > 49 years. A total of (n=131, 78.9%) had various levels of education while (n=35, 21.1%) of the respondents had no formal education. Eighty (48.2%) were living with their partners while (n=48, 28.9%) were singles, (n=26, 15.7%) were widowed and (n=12, 7.2 %) were divorced. The informal sector (n=156, 94.6%) was the largest proportion for the form of employment by most of the respondents-, this constituted activities and positions such as dressmaking, carpentry, running a kiosk or small grocery shop, house-help, drivers, public service vehicle conductors, construction workers, hair dressing, shoemaking among others. The largest proportion of family size (number of children per family) (n=71, 42.8 %) had three to four and above members. Thirty eight respondents (22.9%) were members of a local social welfare. The study revealed that, the income level of most of the respondents was up to Kes. 10,000 a month (n=145, 87.4%), so hence it's a challenge for them to enroll in health insurance cover (Table 4.1).

Table 4.1: Social demographic characteristics of the respondents (n=166)

Description of variable	Frequency	Percentage
Gender		
Male	57	34.34
Female	109	65.66
Age		
19—28	35	21.1
29—38	48	28.9
39—48	34	20.5
>49	49	29.5
Education level		
None	35	21.1
Primary	90	54.2
Secondary	31	18.7
Post-Secondary	10	6
Marital statuses		
Married	80	48.2
Single	48	28.9
Separated & Divorced	12	7.2
Widow & Widower	26	15.7
Family size		
One to two	34	20.5
Three to four	71	42.5
Four to five	37	22.3
Five and above	24	14.5
Occupation		
House wife	48	28.9
Civil servant	11	6.62
Small scale business	87	52.4
Casual workers	20	12.04
Employment		
Formal	9	5.5
Informal	156	94.6
Income		
Ksh.0—5,000	105	63.3
Ksh.5001-10,000	40	24.1
>10,000	21	12.7
Local welfare		
Yes	38	22.9
No	128	77.1

4.2 The distribution of slum dwellers owning health insurance cover

Participation in social protection entails costs, including opportunity, financial and other, non-monetary, costs. Financial costs include monthly contributions for social insurance or out-of-pocket expenses to be paid at the time of using the benefit, for example for health services. Since slum dwellers are often employed in low-pay, insecure jobs, this can threaten their ability to participate in social protection.

4.2.1 Registration with National Health Insurance Scheme

The majority of respondents (n=121, 72.9%) had not registered with the health insurance cover, while only (n=45, 27.1%) had enrolled in the health insurance program. The results shown in (Table 4.2). Among all the respondents interviewed, only (n=4, 8.9 %) were members to other health insurance schemes besides NHIF as illustrated in (Table 4.2). The schemes mentioned included, Linda jamii by Britam (M-tiba). The mentioned alternative scheme was from big insurance firm that have targeted the low income segment. However, uptake of these alternative schemes is much lower than in comparison to NHIF's (n=41, 91.1%). I also noted that the respondents who had acquired the cover had knowledge of registration procedures, how they could pay regularly and the various premium payment mechanism used.

4.2.2 Benefits of health insurance cover

With respect to benefits of the health insurance cover, the larger number of respondents who had taken up the cover, (n=24, 53.3%) were aware of its benefits stating that it helped alleviate cost of medical bills-; covered common health problems and; offered good services when they were admitted. Twenty one respondents (46.7%) stated not to have experienced any benefits due to the fact that claim process is usually too long and thus prefer paying cash being indebted due to defaulting and also some hospitals which they preferred are not included in the insurance cover. The results shown in the (Table 4.2).

4.2.3 Defaulters of health insurance

The findings showed that the distribution of dropouts in the sample was (n=22, 48.9 %) (Table 4.2). Among the many reasons they gave due to drop outs were:

unaffordability of the premium because of their low income, perceived limited benefits of the scheme and poor quality of service.

4.2.4 Health expenditure

The findings showed that majority of the slum dwellers met their health expenditure through (self) out of pocket at (n=87, 60.8 %), some paid through spouse who were formal employed (n=20, 14 %), a combination of self and spouse (n=2,1.4%), Relatives at (n=26, 18.2%) , a combination of spouse and Relative was (n=1, 0.7%), others involved pastor (n=4, 2.8%), Well-wishers (n=1, 0.7%) and lastly a combination of Neighbour and Friends was (n=2, 1.4%) The results shown in (Table4.2).

Table 4.2: Distribution of slum dwellers owning health insurance cover

	Variables	Frequency	%
Health insurance cover	Yes	45	27.1
	NO	121	72.9
Types of insurance cover	M-tiba (Linda jamii)	4	8.9
	NHIF	41	91.1
Defaulted	Yes	22	48.9
	No	23	51.1
Benefit of the scheme/cover Table	Yes	24	53.3
	No	21	46.7
Health expenditure	Self	87	60.8
	Self &Relative	2	1.4
	Spouse	20	14
	Spouse &Relative	1	0.7
	Relative	26	18.2
	Pastor	4	2.8
	Well-wishers	1	0.7
	Neighbour &Friends	2	1.4

4.3 Distribution of slum households that incurred debts due to medical care

4.3.1 Debts due to medical care

The field survey established that (n=39, 23.5%) of respondents had borrowed money and others had debts in the health care to meet medical expenses for their families (medical bill) in last one month, while (n=127,76.5%) had no debts. It is a common notion that sickness involves expenditure that needs financing. Expenditures can range from insignificant amounts to very expensive ranges depending on the disease and kind of treatment sought (Table 4.3) below.

4.3.2 Presence of chronic diseases in the household

Information was obtained on chronic ailments such as: diabetes, hypertension, ulcers, asthma, arthritis, cancer, HIV and others. Once diagnosed, the treatment of such illnesses has to be fairly regular and sustain. From 166 households, (n=85, 51.2% individuals stated that they had been diagnosed with chronic ailments and in some circumstances you could find one person having multiple chronic diseases. Hypertension (BP) (n=48, 56.5%) was reported to be the major illness prevalent. Ulcers (n=17, 20%) and Diabetes (n=15, 17.6%) came next then followed by HIV (n=14, 16.5%), Asthma (n=10, 11.8%), Arthritis (n=7, 8.2%), Cancer (n=3, 3.5%), Epileptic (n=3, 3.5%), Renal failure (n=2, 2.4%), Accident (n=2, 2.4%), Sickle cell anaemia (n=1, 1.2%), Spinal injury (n=1, 1.2%), Osteoporosis (n=1, 1.2%) and Eye infection (n=1, 1.2%). However, not all took regular treatment for these illnesses, the reason being due to lack of money (resources) or awareness as illustrated in (Table 4.3).

4.3.3 Household members used medicine in the past one month

The field survey revealed that (n=39, 23.5%) of the respondents did not use medicine for that month, (n=69, 41.6%) used once while (n= 58, 34.9 %) used more than twice. These responses clearly indicate that most of the slum dwellers prefer to treat minor sickness in conventional way by consuming medicines, as Illustrated in Figure (4.1) below.

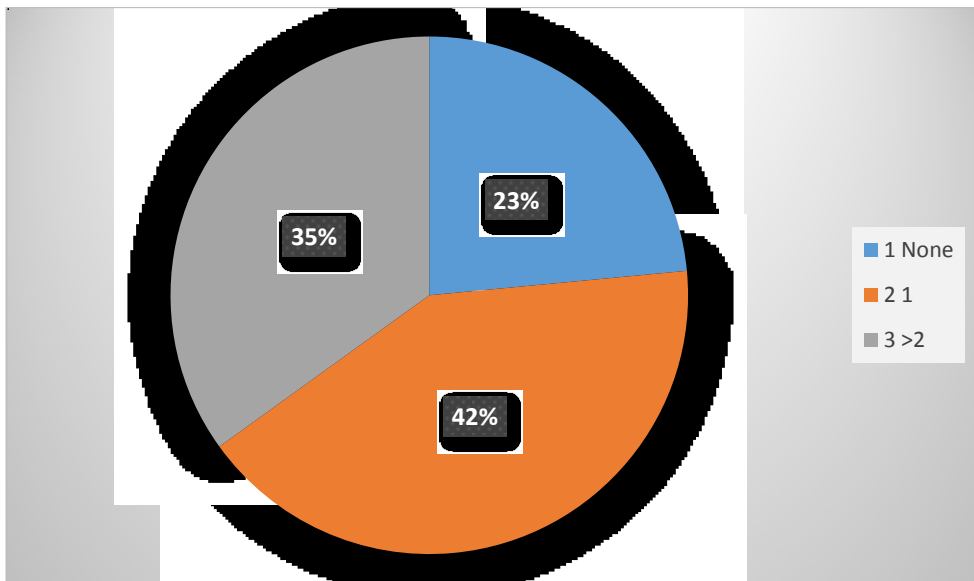


Figure 4.1: Respondents who used medicine in the household.

4.3.4 Household members above 18 years without income

The study found out that (n=87, 52.4%) of household members their dependents were above 18 years and without income this means that in case of illness the household head will be forced to use out of pocket to offset the medical bill which was a challenge to them. Shown in (Table 4.3).

4.3.5 Respondents seeking medical services.

The residents of Kibera face a variety of health challenges and this is evidence by the number of times they seek medical attention at health facilities nearest to them. The results were as follows Once (n =48, 28.9%), Twice (n=60, 36.1%), Thrice (n =14, 8.4%), More than three times (n=13, 7.8%) and those who were not sick (n= 31, 18.7%). This is illustrated in Table (4. 3 below). It is clear that majority of the respondents' experienced frequent need for medical services.

4.3.6 Payment strategies

Table 4.3 shows the different payment-coping mechanisms that the respondents used to pay for medical expenses: From wages at (n=70, 42.2%), salary at (n=8, 4.8%), borrowing (n=20, 12.05%), loaned from a friend (n=16, 9.6%), sale of asset (n=9, 5.4%), donations from well-wishers (n=17, 10.2%), Relatives, children (n=18, 10.84%).

4.3.7 Utilization of health care services

According to findings, government facilities is one of the areas where (n=59, 35.54%) of respondents attended while private health facilities were the most preferred by (n=61, 36.74%) of respondents, (n=32, 19.3%) chose self-medication, while the least (n=4, 2.40%) went to spiritual healer due to their religious belief and those who never sought medical services were (n=32, 19.3%). This is illustrated in (Table 4.3) below.

Table 4.3: Distribution of slum households that incurred debts due to medical care (n=166)

Variables	NO		YES	
	n	%	n	%
Debts due to medical care	127	76.5	39	23.5
Presence of chronic diseases in the household:	81	48.8	85	51.2
Hypertension (BP)	37	43.5	48	56.5
Ulcers	68	80	17	20
Diabetes	70	82.4	15	17.6
HIV	71	83.5	14	16.5
Asthma	75	88.2	10	11.8
Arthritis	78	91.8	7	8.2
Cancer	82	96.5	3	3.5
Epileptic	82	96.5	3	3.5
Renal failure	83	97.6	2	2.4
Accident	83	97.6	2	2.4
Sickle cell anaemia	84	98.8	1	1.2
Spinal injury	84	98.8	1	1.2
Osteoporosis	84	98.8	1	1.2
Eye infection	84	98.8	1	1.2
Household members above 18 years without income	79	47.6	87	52.4
Respondents seeking medical services: Once	118	71.1	48	28.9
Twice	106	63.9	60	36.1
Thrice	152	91.6	14	8.4
More than three times	153	92.2	13	7.8
None	135	81.3	31	18.7
Payment strategies: Wages	96	57.8	70	42.2
Salary	158	95.2	8	4.8
Sold property	157	94.6	9	5.42
Borrowed	146	88	20	12
Loaned from a friend	150	90.4	16	9.6
Sale of assets	157	94.6	9	5.4
Donation from well-wishers	149	89.8	17	10.2
Relatives , children	148	89.2	18	10.8
Utilization of medical care services: None	134	80.7	32	19.3
GOK facility	107	64.5	59	35.5
Private facility	105	63.3	61	36.7
Spiritual healer	162	97.6	4	2.4
Self- medication	134	80.7	32	19.3
Inpatient hospitalization	129	77.7	37	22.3

4.3.9 Expenditures on healthcare

For those who had sought medical attention, it was established that about (n=21, 12.7%) of the respondents had spent less than Ksh. 100, (n=21, 12.7%) had spent between Ksh. 100-500, (n=17, 10.2 %) had spent between Ksh. 501-1000, (n=17, 10.2 %) had spent between Ksh. 1,000- 1,500 while (n=56, 33.7%) had spent a sum of over Ksh. 1, 500 while (n=34, 20.5%) never sought medical attention shown in (Figure 4.2)

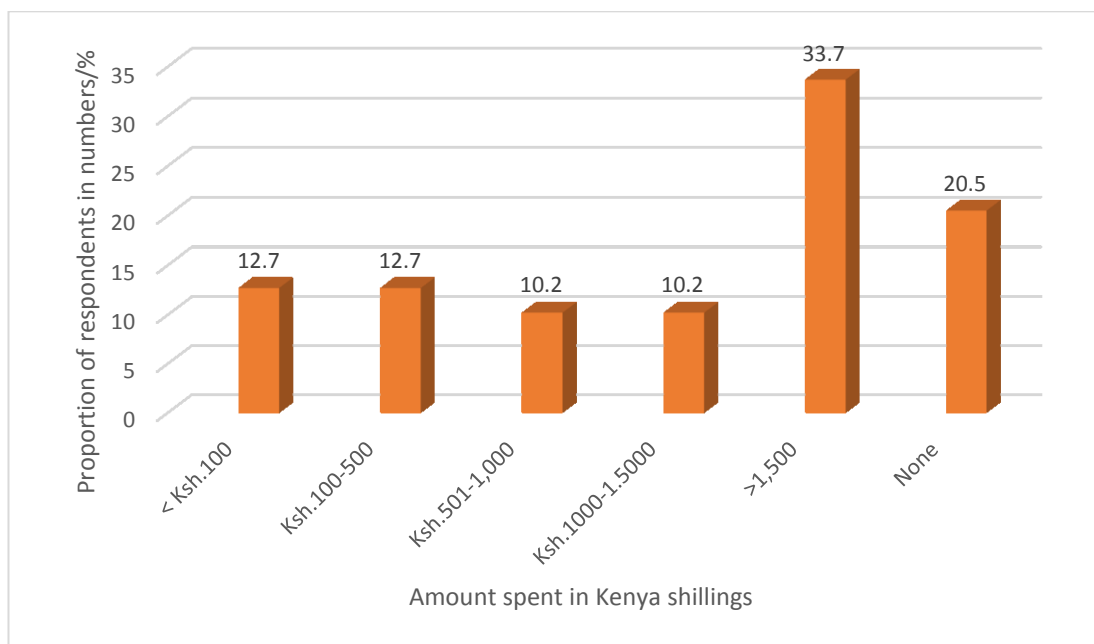


Figure 4. 2: The amount of money spent by respondents on medical care in Kibera.

4.3.8 Inpatient Hospitalization

I was also interested in finding out how many were hospitalized among members of the household one month prior to the study. From the study findings, (n=37, 22.3%) were hospitalized while the majority of the respondents, (n=129, 77.7%) were not hospitalized, as illustrated in the (Table 4.3) above.

4.3.10 High health expenditure perhaps pushing poor into debt trap: (Hospitalization without health insurance cover).

From the results (n=35, 94.6%) respondents had financial risk at 10th percentile expenditure on health cost across the household was Ksh.3,500, at 50th percentile expenditure on health cost across the household was Ksh.5,500 and at 90th percentile expenditure on health cost across the household was Ksh.70,000

4.3.11 Proportion of household income spent on Medicare (Proportional piling)

The results show how household income spent on medical expenditure out of the total income.

At 10th percentile of households used 37% of the household income on health, 50th percentile of households used 50% of household income on health and at 90th percentile of households used 68% of the household income on health.

4.4 Factors associated with uptake of health care insurance in Kibera informal settlements

4.4.1 Inferential analysis

The factors that were significantly related to insurance uptake were -; employment, education level, marital status, occupation, those who were in local social welfare groups and monthly income. There was a positive significantly association between enrolment in health insurance and employment, participants who did not have formal employment were 96% less likely to enroll for health insurance compared to those formally employed (Table 4.4). Those with primary, secondary and post-secondary education were 1.5, 2.3 and 11.3 times more likely to take up insurance compared to those without formal education. Marital status was identified to be significantly associated with uptake of health insurance-, respondents who were unmarried (single, separated/divorced, widow /widower) were 68%, 86%, 62% respectively less likely to have enrolled for health insurance compared to those who were married (Table 4.4). There was a significant association between health insurance uptake and those who were members of a local social welfare group/ merry go round (locally

called *chama*) participants who were not in local social welfare were 78% less likely to enroll for health insurance compared to those who were in local social welfare (Table 4.4).

Income was more interdem to each other; specifically, respondents who were earning Kes.5001-10,000 and above Kes.10,000 were 2.89 and 25.5 times respectively more likely to enroll with health insurance than those who were earning below Kes.5,000 (Table 4.4). There was also a significant association between occupation and enrolment of health insurance, study participants who were civil servants and casual workers (retired, rentals) were respectively 17.1, and 4.6 times more likely to have enrolled with health insurance while those with small scale business were 21% less likely to enroll as compared to those who remained in homes as house wives (Table 4.4).

Table 4.4: Factors associated with the uptake of health insurance in Kibera informal settlement.

Variable	Level	Odd Ratio	95% CI	P-Value
Employment	Formal	1		0.0001
	Informal	0.04	[0.00 , 0.32]	
Education	None	1		0.0140
	Primary	1.56	[0.57 , 4.26]	
	Secondary	2.30	[0.72 , 7.3]	
	Post- secondary	11.28	[2.25 , 56.59]	
Marital status	Married	1		0.0089
	Single	0.32	[0.13 , 0.76]	
	Separated/Divorced	0.14	[0.02 , 1.17]	
	Widow/Widower	0.38	[0.13 , 1.10]	
Occupation	House wife	1		0.0000
	Civil servant	17.1	[3.18 , 92.03]	
	Small scale business	0.79	[0.32 , 1.93]	
	Casual workers	4.6	[1.51 , 14.28]	
Local welfare	Yes	1		0.0001
	No	0.22	[0.10 , 0.47]	
Income	Ksh.0—5,000	1		0.0000
	Ksh.5,001-10,000	2.89	[1.22 , 6.81]	
	Ksh. > 10,000	25.5	[7.54 , 86.26]	

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Socio demographic characteristics of respondents

These findings came from slum dwellers whose majority were young adults (>30), those who had no formal education were (n=35, 21.1%), Primary (n=90, 54.2%), Secondary (n=31, 18.7%) and Post-Secondary (n=10, 6%). These results corroborates with other finding by Ebenezer and Patricia, (2015) in Ghana who reported that education level in slums is low, No formal education (n= 168, 45.3%), Primary (n=111, 29.9%), Secondary (n=77, 20.8%), and Post- Secondary (n=15, 4%). Those who were married were (n=80, 48.2%) which had same finding reported by Kimani *et al.*, 2012 revealed that 55.7% were married.

5.1.2 Distribution of informal settlement dwellers owning health insurance cover

The ownership of health insurance found in this study was much higher (n=45, 27.1%) than the national average estimate 20% (Kazungu & Barasa, 2017) as well as the Nairobi County average estimate at 20% (KDHS, 2014). The difference in prevalence observed in this study could be associated based on those who had ever had the insurance cover before the study began. The findings showed that almost three quarters of the informal settlements (n=121, 72.9%) had no access to health insurance cover. This impacts negatively on access to health care since majority have to rely on out of pocket remittance for health services. The low involvement of people in the scheme might be due to some factors, like low and non-regular income, insecure employment, and insurance scheme design features including inflexible payment schedules and lack of awareness about benefits of the schemes that are not adapted to people's needs and preferences which was similar with the study in Kenya of (Kimani *et al.*, 2012). It may also be related to their inability to pay the insurance premium. This is a major reason cited for non-enrolment in this study. Previous study

in Ghana also that the poor such as slum dwellers were not able to enroll in the NHIS (Jehu-Appiah et al., 2011).

Further data analysis revealed that among those who had been enrolled, prevalence of NHIF was (n= 41, 91.1%) while private schemes was (n=4, 8.9%), this was similar with the study conducted by MOH (2014) in Kenya which showed that 88.4% of those with health insurance are covered by the NHIF, while 11.6% are covered by private insurers. However, in this study uptake of these alternative schemes is much lower than in comparison NHIF, this could perhaps due to high premium charged by the insurers and lack of awareness of its existence thus blocking the poor from enrolling. This therefore means that health insurance options available to low income earners are mostly limited to the NHIF as it is the most readily available given the price and affordability factor. Low income earners therefore do not have a wide variety of health insurance options to choose from.

The drop-out of health insurance cover was higher (n=22, 48.9%) as compared to the study in Central & Western Kenya and in Ghana which found a drop out of 15%, 6% and 34.8% (Mulupi *et al.*, 2013; Masengeli *et al.*, 2017; Atinga *et al.*, 2015). The reasons for drop-out were similar from a study in Ghana which documented high premium charged, perceived definite benefits of the scheme and poor quality of health services offered by covered facilities (Jehu-Appiah *et al.*, 2011; Atinga *et al.*, 2015). It come out from this study that most of participants (n=24, 53.3%) who had been enrolled were aware of its benefits of the cover stating that it helped alleviate cost of medical bills-; covered common health problems and ; offered good services when they were admitted. This observation was also made in Ghana by Boateng & Awunyor-Victor, (2013) and Mebratie *et al.*, (2015) in Ethiopia, who stated that definite benefits as well as negligence to provide promised benefits can affect enrollment to health insurance.

Over half of the respondents (n=87, 60.8%) of the slum dwellers relied on individual out-of-pocket payment to pay for health care services when seeking medical treatment. This proportion was higher than the out of pocket spent in 2013 by the Kenyan government which was 29% (Ministry of Health, 2015). Lack of health

insurance is associated with non-utilization of health care services, late presentation in health facilities and non-compliance of the treatment regime leading to an overall poor outcome. This finding was similar with the study in Nigeria and India by Ezeoke *et al.*, (2012) and Gopalan and Durairaj, (2012) reiterates that a health system where people pay out of pocket for health services permits only those who can afford.

5.1.3 Distribution of informal settlements households that have incurred debts due to medical care

About a quarter (n=39, 23.5%) had medical debts, borrowing money from friends, family and non-banking sources such as private money lenders is common source of funds to pay health costs which might be severe leading to indebtedness. This was consistent with other studies in developing nations (Nguyen *et al.*, 2012; Steinhardt *et al.*, 2009; Barasa *et al.*, 2017), stated that high out of pocket expenses on illness can impoverish the family and cause debts in the household especially to slum dwellers.

The findings had (n=85, 51.2%) respondents who had chronic diseases, the highest expenditure incurred was on cancer, diabetes and hypertension followed by arthritis, asthma and ulcers. This correlates with (Mahal *et al.*, 2013) who found that households containing a member with cancer experienced significantly higher OOP health expenditures per capital. It also concurs with the study in Nepal, found that presence of a household member with a chronic illness increase the odds of a household incurring catastrophic health expenditures (Saito *et al.*, 2014), Kenya (Buigut *et al.*, 2015). The rationale for having this high occurrence of non-communicable diseases could be due to late diagnoses, lack of awareness or resources. Recent studies in four South Asian countries (Bangladesh, India, Nepal and Sri Lanka) and Eastern Europe (Ukraine and Russia) showed that households containing a member with Non-Communicable diseases or chronic diseases experienced significantly higher OOP health spending than those without (Murphy *et al.*, 2013).

Seeking remedy by purchasing drugs over the counter from a pharmacy, increased the likelihood of medical debts. Majority stated that in case acute ailment like cold, flu, cough, fever, headache; it's therapy was by taking antibiotics or by taking any home remedy and wait for self-recovery. The findings corroborate with existing literature in the Sub-Saharan Africa region (Zambia and Ghana) that outpatient care and costs of medicines are the greatest cost drivers of direct OOP costs paid to healthcare facilities and in the local chemists (Kusi et al., 2015; Masiye *et al.*, 2016). This finding is important given that health financing schemes, and specifically social health insurance schemes in LMICs do not adequately cover the cost of medicines and outpatient care (Bredenkamp and Buisman, 2016).

This study found that (n=87, 54.4%) of household members their dependents were above 18 years and without income this means that in case of illness the household head was to pay. As a result of this high reliance of out of pocket sourced directly from households which disproportionately affects the poor of whom an estimated 453, 470 are annually pushed into poverty because of health care payment while 4.52% of the Kenyan population incur catastrophic health expenditures (Barasa *et al.*, 2017).

The effect of healthcare services utilization probably reflects the severity of the disease/condition, the higher cost of getting a service in a hospital and the nature of service needed. The study accumulatively showed that (n=135, 81.2%) respondents visited health facility to sought medical attention, this is not surprising as the community has no good sanitary facilities. Sanitation is generally poor, there are no well-constructed drainage systems to allow easy flow of water. The few open gutters are choked with debris, resulting in dirty stagnant ponds and flooding during the rainy season. Houses are overcrowded and all-purpose. This is typical of slums as was observed in other study conducted in slums (Sverdlik, 2011). Living in slums under deprived conditions is a major cause of ill-health and slum dwellers suffer disproportionately from ill-health throughout their life course (Owusu-Ansah *et al.*, 2016).

A household confronted with an illness is obliged to meet varied expenses—the cost of treatment and transport, opportunity costs for the sufferer & caregivers and the cost of caring, besides other routine household expenses. To cover the expenses associated with an event of sudden illness. The slum households in Kibera, often employ coping strategies such as drawing down savings from wages and salaries, borrowing, donation, loaned from friends, selling of productive assets such as Mobile phones, television, radios, bicycles, chairs, utensils, and land. This was similar with a study reported ways households cope with financial shortfalls in Nairobi slums (Amendah *et al.*, 2014), not eating enough meals, working longer hours, receiving help from family and friends and withdrawing children from school. These coping mechanisms are frequently inadequate to cover the healthcare costs and the consequential debt resulting in impoverishment of the effected households. The results also gives a clear indication that medical insurance has not been fully embraced by the low income population to pay for their medical expenses.

It was proved in study that almost equal distribution of Kibera residents had desire for private clinic same way as government health facilities; Private facility (n=61, 36.8%), Government facility had (n=59, 35.5%). Some of the respondents also relied on self- medication by consuming some antibiotics in case of minor illness or following any home remedy and wait for self- recovery due to lack of money to go to the hospital. This agrees with the findings of Sarpong *et al.*, (2010) in Sub-Saharan African region(Zambia and Ghana) that outpatient care and costs of medicines are the greatest cost drivers of direct OOP costs paid to healthcare facilities and in the local chemists. Due to religious beliefs they were (n=4, 2.4%) respondents who never believed in going to the hospital or taking drugs, they trusted God to heal there illness. These findings are relatively consistent with a recent study in Kenya by Chuma *et al.*, (2013), stated that religious beliefs is among barriers to the uptake of health insurance.

Households in the study are poor as illustrated by the fact that health care expenses consume half of the income. Indeed, for about (n=132, 79.5%) household respondents incurred financial constrain due to healthcare costs. Poor households spent high on healthcare, facing disproportionately higher financing burden. The

findings correlates with Munge *et al.*, (2015) Kenya, Onoka *et al.*, (2013) Nigeria and World Bank, (2013) reported that paying for health care is the main problem in most African countries, Kenya being included. Another observation made by (World Bank, 2014) stated that, the number of patients that pay their health services through OOP in Kenya is very high (one third of the total health expenditure). The OOP health spend is a big barrier for Kenyans accessing healthcare services as it drives the poorer households easily into poverty. The costs of treatment continue to limit the access of care especially by the poor (WHO, 2010). As food, shelter, and other necessities exhaust the bulk of the household's income, little is left for other items of expenditures such as health care. It is possible that informal settlements residents are not able to afford the care they may need, thus they forgo healthcare. These results illustrate inequity in the access to care when payment for the care is out of pocket.

It was found that (n=37, 22.3%) respondents were admitted for major illness. This could be a typical response pattern among the poor, where they tend to ignore minor ailments in the beginning, but then have to be later admitted to hospital due to prolonged ill-health and increasing severity of the illness. When one member in the household is sick, they incur costs, financial burden affects all members of the family. A large burden due to health care costs from one member could have consequences for other family members, acting as a deterrent to seeking needed health care, making it difficult for the family to afford other necessities, and causing increased family stress (Malik and Syed, 2012). This is similar with the study in Colombia by (Amaya Lara and Ruiz, 2011) states that a severe ailment or injury that requires inpatient care has been found to increase the likelihood of catastrophic spending, as well as the use of inpatient services. This reflects the loss of income caused by work days due to sickness in slum population largely engaged in casual employment that pays per day worked.

The literature suggests that a wide range of household characteristics affect the probability of incurring financial risk in health expenditure. Availability of health insurance reduces the likelihood of occurrence of catastrophic health expenditure a study in Colombia by (Amaya Lara and Ruiz, 2011). A study on how households cope with OOP health expenditures in 15 African countries found that in most of

these countries, health financing is too weak to provide protection for households from health shocks (Leive and XuK, 2008). Thus, borrowing and depletion of assets to finance health care was prevalent among the 50th and 90th percentile. This means that many of the households could not afford to pay medical bill for themselves or their family members who were admitted. This finding corroborates previous studies (Peters *et al.*, 2008; WHO, 2010) which reported that unsustainability of healthcare is acknowledged as one of the decisive barriers to access healthcare.

From the results, it shows a rise in out of pocket payments as a direct cause of usage in medical expenses. This outcome is in line with the vision of WHO, which states that medical fees is a major obstacle to healthcare coverage and utilization (WHO, 2010). The proportion of household income spent on medical expenditure was at 50th and 90th percentile. This findings is similar with previous study in Kenya which states that as a result of high reliance of OOP, 4.52% of the Kenyan population incur catastrophic health expenditures, while 453,470 individuals are pushed into poverty annually because of healthcare payments (Barasa *et al.*, 2017). The expenditures on chronic illnesses included expenditures on drugs, tests and doctor's consultations. Of the three, i took the expenditures on drugs to be the sustained and recurring element in the cost. Of the chronic illnesses, the highest expenditure incurred was on cancer, hypertension and diabetes, followed by arthritis, asthma and ulcers.

5.1.4 Factors associated with uptake of health care insurance in the households

In logistic regression, the following factors were significantly associated with determinants of health insurance ownership program: Employment, the local welfare, being married, having secondary and post-secondary education, occupation and having high income, were associated with an increase in enrollment, this study was similar with the findings in Nigeria by (Onwujekwe *et al.*, 2013).

Health insurance cover was associated with having regular income, people with high earnings are in a good position to afford being insured. The study participants who had a source of income were more likely to enroll as compared to those who were earning less. This is consistent with several studies in Africa reporting that

households with higher income were more likely to take up insurance (Kumi-Kyereme and Amo-Adjei, 2013; Sarpong *et al.*, 2010). Some studies on poverty has reported that the poor have liquidity constraints that cause them to remain uninsured (Panda, *et al.*, 2013).

Education was also an important determinant of having insurance coverage. Those who were highly educated were more likely to enroll with health insurance compared to those without formal education. The positive relation between education and ownership of health insurance cover is linked to purchasing power increase and higher access to health insurance information. This agrees with the study done by (Cheng *et al.*, 2014; Yao and Kim, 2015) in China who stated that having higher education levels increases participation in social insurance. In this regard it was also noticed that those who had higher levels of education had higher chances with regards of being ready for any unforeseen health challenges and as a result they could increase the uptake health insurance, as compared to those who had lower level or no formal education who could not realize the level of threat that will be posed to their health and life when they are unprepared financially (Mhere, 2013). Similar findings have been made in other local studies (MOH, 2013; Kimani *et al.*, 2014; Kiplagat *et al.*, 2013).

The study showed that being employed in the formal sector is an important factor in the uptake of health insurance program, this results are comparable with other studies which stated that being employed in the formal sector is associated with ownership of health insurance (Mukhwana *et al.*, 2015; Mathauer *et al.*, 2008). This can be attributed to the fact that people in the informal settlement, employment is mainly portrayed by unsubstantial productivity and little wages, poor working conditions and long working hours and irregular income and therefore making contributions to health insurance schemes a challenge. Given that illness and injuries are often unpredictable, people in the informal settlements are usually ill prepared to meet the costs associated with health care. The difference in insurance coverage between the formal and informal sectors have important implications on the proposed plans to establish a comprehensive social health insurance program in Kenya where by it will ensure all population has equal opportunities to access health care. The result

suggests that more endeavors are needed to increase health insurance coverage in the informal settlement.

The findings showed that being married was associated with having health insurance coverage compared to being singles, separated and widowed. This suggests that having joined in matrimonial is beneficial due to the fact that financial support is derived from both of them, which translates into more opportunities for accessing health insurance coverage. Another reason is that a spouse/partner can be insured through the other's insurance coverage from the employer. Also a possible explanation is that when individuals are single, or unmarried they are high chances for them to become financially vulnerable thus influencing their ability to make payments to the health insurance program. Other studies have also found a positive relation between being married and ownership of health insurance (Kimani *et al*, 2012; Ibok, 2012; Maina *et al.*, 2016; Amu and Dickson, 2016).

Study results provide proof on the participation in the local welfare (merry go round or *chama*) as mechanism through which funds can be combined to uplift the health care for the poor section of the population this is because those participants who were not in the local welfare were 78% less likely to enroll for health insurance. These findings corroborate those of other studies, which found that membership in investments groups like trade savings and community based savings aided individuals in the contribution for health insurance cover (Mathauer *et al*, 2008; Dekker and Wilms, 2010).

Although family size, age and gender were not significant factors that affect uptake, family size in previous studies has been attributed as a major factor that affects uptake of insurance (Omodi, 2009). Once a household has many children, the resources are strained and thus find it hard to put money aside to pay for medical insurance. This was similar with a Kenyan study (Kimani *et al.*, 2014) and a Nigerian (Ibok, 2012) study that linked smaller households with higher uptake of health insurance covers.

5.2 Conclusion

1. The proportion of residence that had health insurance cover was (n=45, 27%)
2. Factors associated with uptake of health care insurance in Kibera informal settlement were: Education level, marital status, occupation, employment, local welfare and income
3. The level of debts was 23.5% and this study can act as a baseline for other studies

5.3 Recommendations

1. Government to set up programs that increase enrollment of health insurance in informal settlement as outlined in Vision 2030 and Sustainable Development Goals.
2. Financial contribution graded according people's ability to pay and also to reduce premium contribution for affordability.
3. Positive measures to improve households' socio-economic status are necessary
4. Policy makers to introduce financing reforms that ensure the needs of the poor & vulnerable are protected and are implemented within the context of universal coverage
5. There is need for public awareness, education and sensitization of the key concepts and their application pertaining to health insurance.

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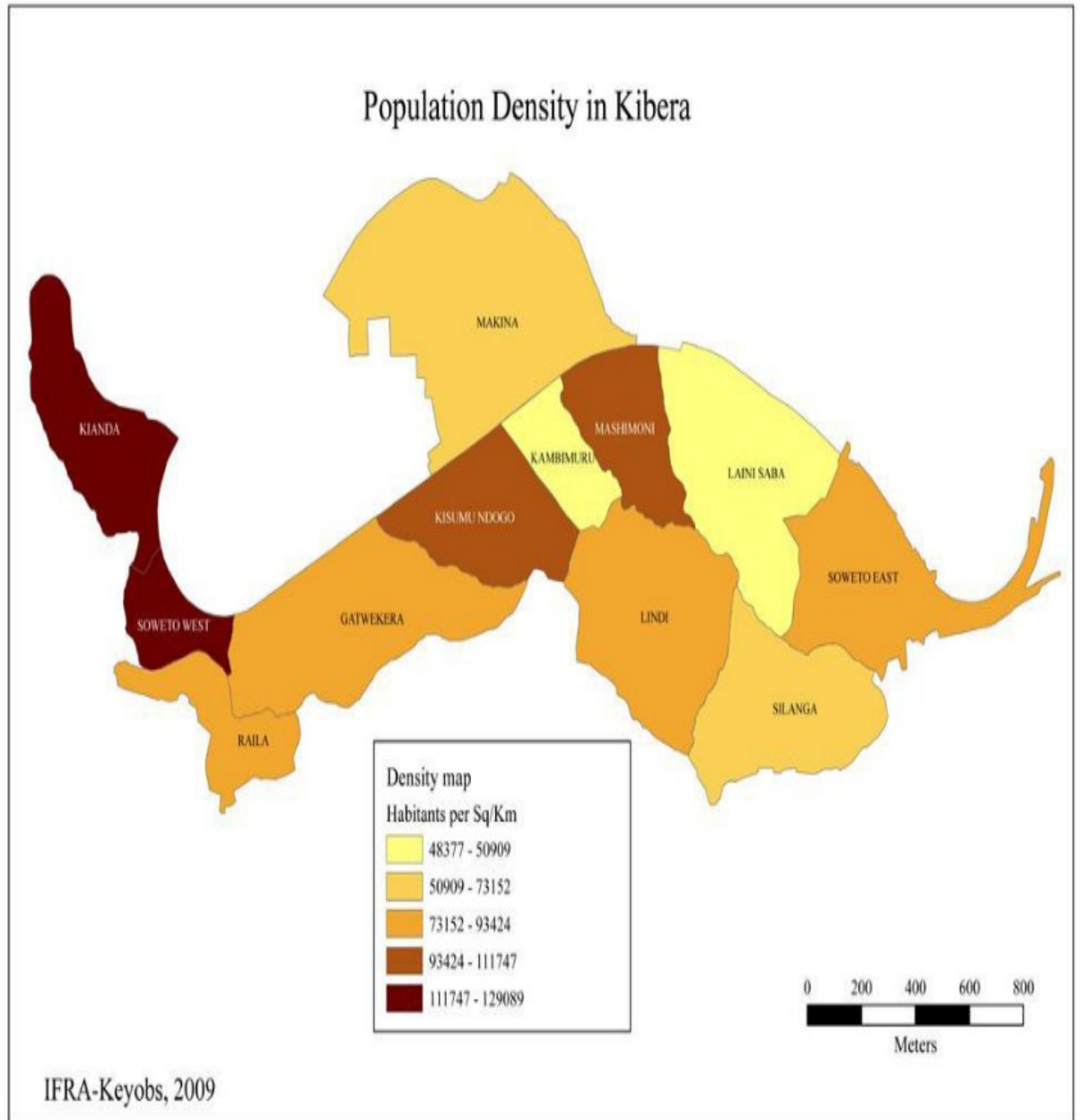
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APPENDICES

Appendix 1: Kibra Sub County Map



Appendix 2: Informed Consent form in English

Study title: Determinants of health care insurance uptake among households in Kibera informal settlement, Nairobi County.

Introduction

Good morning/Afternoon My name is Metrine Wasike. I am a Master of Science Public health student at the Jomo Kenyatta University of Technology. Today I am here to carry out a study on determinants of uptake of health care insurance in Kibera urban slum households in Nairobi County. This form will give you information you need, so that you can make a decision on whether to participate or not in the study. There are no wrong or right answers. You will be given time to consider if you will like to be in this study. Please read the form well and ask where you don't understand please be honest and truthful in answering the questions. I assure you that the information you will give will be totally confidential and will not be required to identify yourself by name. Your participation is voluntary and you may therefore refuse to answer any question or stop the interview at any time without suffering any consequences.

Purpose

The purpose of this research will be to determine the uptake and associated factors for health care insurance among Kibera slum dwellers in Nairobi County. This information will be used to improve health care insurance among the informal settlement in Kibera Sub- County.

Procedures

If you agree to be a participant in this study, we will ask you to fill in the questionnaire regarding health care insurance as we interview you. To ensure complete confidentiality your name will not be used but an identification number will be assigned to label the questionnaire. The information you give will recommend and design appropriate interventions to promote their rational uptake.

Risk/Benefits

During this procedure there will be no physical harm. You will not be given any monetary benefits; neither will you incur any costs however it will help you to understand the importance of being enrolled in health care insurance as we shall be

answering any questions you have. This study will also benefit the public as we will recommend and design appropriate interventions to promote their rational uptake.

Confidentiality

We will make every effort to protect your identity. You will not be identified in any report or publication of this study or its results.

Voluntaries

Your participation is voluntary, and you may therefore refuse to answer any question or stop the interview at any time without suffering any consequences.

Instructions

When you sign below it shows that you have agreed to participate in the study. If you do not understand any part of the information that has been read to you/you have read, be sure to ask questions. Do not sign until you have understood all that is expected or required. I wish to take part in the study entitled: Determinants of uptake of health care insurance in Kibera urban slum households, Nairobi County, during the study withdraw my consent without any consequences. I have understood the information given in this sheet and I give my consent to be interviewed (households).

Participation

is voluntary. You are free to withdraw or refuse to answer any questions at any time without facing any penalties or loss of benefits to which you are otherwise entitled. If you agree to participate in the study, please sign your name below, indicating that you have read and understood the nature of this study and your responsibilities as a study participant and that all your questions and concerns regarding the study have been answered satisfactorily. You will receive a copy of this consent form to take with you. We thank you for your co-operation and time. Please feel free to approach or contact us should you have any queries in the future.

Respondent

number.....Signature.....Date.....

CONTACTS

For any questions or concerns about the study or in the event of a study related injury, contact:

NAME: Mitrine Wasike

MOBILE NUMBER-0721819738.

For any questions concerning your rights as a research participant, contact: The Secretary, KNH/UON Ethics Review Committee,

Telephone number 2726300 Ext 44102

Email address: erc-secretariat@uonbi.ac.ke

Website: www.uonbi.ac.ke

Link: www.uonbi.ac.ke/activities/KNHUoN

Appendix 3: Informed Consent in Kiswahili

Fomu ya Makubaliano ya idhini kushiriki katika Utafiti

Hoja kuu:

Vigezo vya kuchukua vya afya vinavyojali bima katika kaya mijini kitongoji duni Kibira ,Jimbo la Nairobi.

Utangulizi

Nawasalimu hamjambo, kwa jina ni Metrine Wasike. Mwanafunzi wa kitengo cha “Master of science Public Health” katika chuo kikuu cha Jomo Kenyatta cha kilimo na tecknologia. Leo hii niko hapa niwapelekeni katika somo la afya bima na vigezo vinavyo huzishwa na matumizi ya bima mwiongoni mwa wakazi wa kitongoji duni Kibera, jimbo la Nairobi. Hii fomu itatoa maelezo mwafaka yatayokuwezesha kufanya maamuzi kama ungependa kushiriki katika somo hili na kama utapenda kulifanya. Waombwa kuisoma fomu vizuri kwa makini ili uweze kuuliza swali au maswali ili yaweze kujibiwa kwa ufasaa. Wewe kama mhusika unahakikisha ya kuwa yale utakayo yaeleza yatachukuliwa kwa uzito wake pamoja na siri inayoandamana nayo. Kuchangia kwako ni kwa hiari hakuna wakukulazimisha kujibu maswali yako.

Kusudi

Kusudi la somo hili au utafiti huu ni kuangalia vigezo vya kuchukua vya afya vinavyojali bima na mambo mengine yanayoshirikiana baina ya kitongoji duni cha Kibera.

Kukubaliana

Kama utakubali uchumuike kwa utafiti huu tutakuuliza maswali kuhusu vigezo vya afya vinavyojali bima na vipengele mbalimbali kuhusu bima. Nawe utaakikishiwa kutuzwa kwa mchango wako kwa siri ipasavyo na hata kulibana jina lako. Mchango wako utakaotoa, utapelekea mapendekezo ili hatua mwafaka kuchukuliwa kuifanikisha nchi yetu.

Maagizo

Kipindi hiki chote cha utafiti hakutakuwa na madara yoyote. Usaidizi wa kifedha hautakuwa na hakuna hela wewe kama mhusika utatoa ila utafaidika kwa kuelewa vigezo vya afya vinavyojali bima na vipengele mbalimbali. Tutajibu swali lolote utakalo uliza. Utafiti pia uta saidia jamii kwa jumla kwa kutoa mwelekeo mwafaka wa matumizi ya bima.

Siri

Tutahakikisha siri imetunnzwa kwa kulibana jina lako na hata kutolijuumisha katika uandishi wa ripoti hili.

Anwani za mtafiti mkuu

Ikiwa ungependa ufafanuzi Zaidi kuhusiana na kushiriki kwako tafadhali wasiliana na mtafiti mkuu Metrine Wasike kwenye nambari ya simu 0721 819 738.

Anwani za kamati ya maandalizi ya shirika la Utafiti

Ikiwa ungetaka kujua mengi kuhusu haki zako za kushiriki katika utafiti huu, tafadhali wasiliana na kamati ya maandalizi ya shirika la Utafiti Wa Kimatibabu La Kenyatta (KNH/UON) Kwenye anwani ya barua pepe : erc-secretariat@uonbi.ac.ke na nambari ya simu 2726300-44102.

Jina la mhusika.....Sahihi.....Tarehe.....

Appendix 4: Questionnaire in English

Title: Determinants of health care insurance uptake among households in Kibera informal settlement, Nairobi County.

Household Head Questionnaire

Section A: Respondents Bio-data/Socio –demographic characteristics

A1. Name of household head.....

A2. Gender of household head:

- 1. Male
- 2. Female

A3. Age group of household head (in years).....

- 19 - 28
- 29 - 38
- 39 - 48
- >49

A4. Formal education level of household head

- 1. None
- 2. Primary
- 3. Secondary
- 4. Post-secondary

A5. Marital status of household head:

- 1. Married
- 2. Single
- 3. Separated & Divorced
- 4. Widow & Widower

A6. Size of family (including spouse and children)

- 1. 1-2
- 2. 3-4
- 3. 4-5

4. 5 and above

A7. Occupation of household head

- 1. House wife
- 2. Civil servant
- 3. Small scale trading
- 4. Casual (specify)

A8. Employment status of household head

- 1. Formal
- 2. Informal

A9. Income levels per month *in the household*

- 1. Ksh. 0-5000
- 2. Ksh. 5001-10000
- 3. Ksh. > 10001

A10. Is the household and or spouse head affiliated to a local social welfare group/merry go round/or women group (*chama*)?

- 1. Yes
- 2. No

Section B: Health care insurance ownership.

B1. Do you own any health insurance cover?

- 1. Yes
- 2. No

If NO go to question B6.

B2. If yes, state which one

- 1 .NHIF
- 2. Britam
- 3. Mtiba
- 4. Others (specify).....

B3. Do you know the benefits of joining health insurance?

- 1. Yes
- 2. No

B4.Explain.....
.....
.....
.....

B5. Have you ever defaulted on your payments in the last 6 months?

- 1. Yes
- 2. No

B6. How do you meet for your health expenditure?

- 1. Self
- 2. Spouse
- 3. Relative
- 4. Pastor
- 5. Wellwishers
- 6. Neighbour
- 7. Relative
- 8. None

Section C: Medical expenditure

(I am of the opinion that these other questions below are relevant to the household respondents since this will be good to capture information especially for respondents who are not members or do not know NHIF or any other medical insurance scheme so that they can also be active in the survey).

C1. Is the household currently indebted for health care?

- i. No
- ii. Yes

C2. a) Does any family member suffer from chronic diseases?

- i. No

ii. Yes

b). If yes, state them (examples –

Diabetes

Asthma,

Hypertension

Mental disorders

HIV

etc).....

.....

.....

C3. How many individuals in the household used medicine in the past one month?

1. None

2. 1

3. >2

C4. How many household members above 18 years are without income?

i. None

ii. 2

iii 3

iv >3

C5. How many times in the last one (1) month have you sought medical attention?

1. Once

2. Twice

3. Thrice

4. More than 3 times

5. None

C6. Where did you get money to pay your medical expenses?

1. Wages
2. Salary
3. Sold a property to get money
4. Borrowed
5. Loaned from a friend
6. Donation
7. Relative, Children
8. None

C7. Where did you seek your medical services?

1. GoK facility
2. Private facility
3. Spiritual healer
4. Self- medication
5. None

C8. How much did you spend in the last one (1) month on health?

1. Below Ksh.100
2. Ksh.100-500
3. Ksh.501-1,000
4. Ksh.1,000-1,500
5. Above Ksh.1,500
6. None

- C9. (a). Any hospitalization in the last one month among members of the household?
- i. No
 - ii. Yes

(b). If yes, **without** health insurance, how much did it cost the household in Kes?

.....

Section D: Proportion piling activity

Proportional piling is a participator technique that allows respondents to give relative scores to a number of different items or categories according to one criterion. The scoring is done by asking the respondent to divide 100 counters (beans, stones or similar items that are familiar to the community and locally available) into different piles that represent the categories. In this study, the proportion piling activity will target relative income out of the total household income spent on medical expenditure. The researcher will have the proportional piling question clear in the mind “*Assume these 100 beans is the total household income for the last three months, please divide for me the relative income (without counting) that was spent on medical care*”. This may be on the ground or on a flip chart. The researcher will confirm that this is the actual “relative” income used for medical care and the rest was for other expenses. The researcher will then count the beans representing the relative income that was spent on medical care and note down. This will be approximately the proportion of income spent on medical care. Repeat this in all households.

Appendix 5: Questionnaire in Kiswahili

Dodoso la Kiongozi wa Familia

Sehemu A: Maelezo binafsi ya wahusika

A1. Jina la kiongozi wa familia.....

A2. Jinsia ya kiongozi wa familia:

1. Mume

2. Mke

A3. Umri wa kiongozi wa familia (Miaka kwa kiwango)

19- 28

29- 38

39-48

>49

A4. Kiwango cha elimu cha kiongozi wa familia

.....

1. Sina elimu

2. Shule ya msingi

3. Shule ya upili

4. Chuo

A5. Hali ya ndoa ya kiongozi wa familia

1. Ameoa/ameoleka

- 2. Sijaoa/Sijaoleka
- 3. Nimeachika
- 4. Mjane/Mgane

A6. Idadi ya familia yako (Mke wako/mme wako na watoto)

- 1. Moja hadi mbili (1-2)
- 2. Tatu hadi nne (3-4)
- 3. Nne hadi tano (4-5)
- 4. Zaidi ya tano

A7. Kazi ambayo kiongozi wa familia anafanya

- 1. Hajaandikwa
- 2. Mwajiriwa wa serikali
- 3. Machinga
- 4. Ameandikwa na mtu mwingine
- 5. Amestaafu
- 4. Nyingine (toa maelezo).....

A8. Mfumo wa ajira wa kiongozi wa familia.

- 1. Rasmi
- 2. Isirasmi

A9. Kipato (mshahara) cha kila mwenye katika hii familia/kaya

- Ksh.0-5000
- Ksh.5001-10000
- >.Ksh. 10001

A10. Je, mwenye boma amejiunga na kikundi chochote/kikundi cha akina mama.
(chama)?

1. Ndio

2. La

Sehemu B: Umiliki wa Bima ya afya.

B1. Je, humiliki bima ya afya?

1. Ndio

2. La

Kama ni LA, enda kwa swali namba B6.

B2. Kama NDIO taja kambuni ya bima

1. NHIF

2. Britam

3. M-tiba

4. Nyingine

Nyingine (toa maelezo).....

B3. Je, unajua umuhimu wa kujiunga na bima ya afya?

1. Ndio

2. La

B4. Toa maelezo kwa kila jibu

.....
.....
.....

B5. Umeshawahi acha ulipaji kwa miezi sita iliopita?

1. Ndio

2. La

B6. Je, unakidhi maitaji yako ya kiafya ki vipi?

1. Binafsi

2. Mke/Mume

3. Jamii

4. Wachungaji

5. Majirani

6. Marafiki

7. Wenye huruma

8. La

Sehemu C: Matumizi kwenye afya

(Nimaoni yangu kwamba maswali ambayo kwenye huu mwedelezo hapa chini yanalenga watu ambao bado hawajajiunga na mfuko wa bima ya afya(NHIF) na pia wale ambao hawajajiunga na bima yoyote ya afyaau pia wale ambao hawa ufahamu wowote kuhusuana na bima ya afya kwa ajili yakupata mwazao yao katika huu mchakato wa utafiti.)

C1. Je, familia yako inadaiwa chochote na huduma ya afya?

1. La

2. Ndio

C2. a). Je, kuna ugonjwa sugu katika familia yako?

- 1. La
- 2. Ndio

b). Kama NDIO, orodhesha (mfano

- Kisukari,
- Pumu,
- Shinikizo la damu
- Utaira wa akili,
- Virusi Vya Ukimwi

.....
.....
.....
.....
.....

C3. Je, ni watu wangapi kwenye familia yako ambao walitumia dawa mwezi uliopita?

- 1. Hakuna
- 2. 1
- 3. > 2

C4. Je, ni wanafamilia wagapi ambao wana umri wa zaidi ya miaka kumi na minane ambao hawana ajira?

- 1. Hakuna
- 2. 2
- 3. 3
- 4. >3

C5. Ni mara gapi umeenda kupata huduma ya matibabu mwezi mmoja uliopita?

- 1. Mara moja
- 2. Mara mbili
- 3. Mara tatu
- 4. Zaidi ya mara tatu
- 5. Hakuna

C6. Je, hela ambazo ulilipia huduma ya afya ulizitoa wapi?

- 1. Mshahara wa kibarua
- 2. Mshahara

- 3. Niliuza mali yangu
- 4. Niliomba
- 5. Nilikopa kwa rafiki
- 6. Msaada/Mchango
- 7. Jamii ,Watoto
- 8. Hakuna

C7. Ulipata huduma ya matibabu wapi?

- 1. Kituo cha afya cha serikali
- 2. Kituo cha afya binafsi
- 3. Maombezi
- 4. Nilijihudumia
- 5. Hakuna

C8. Ulitumia kiasi gani cha hela mwezi mmoja uliopita kupata huduma za afya?

- 1. Sio zaidi ya shilingi mia moja
- 2. Kati ya shilingi mia moja na mia tano
- 3. Kati ya shilingi mia tano hadi elfu moja
- 4. Kati ya shilingi elfu moja hadi elfu moja na mia tano
- 5. Zaidi ya shilingi elfu moja ma mia tano

C9. a). Je, kuna yeyote kwenye familia yako ambaye amelazwa hospitali mwezi mmoja uliopita?

- 1. La
- 2. Ndio

b). Kama NDIO, bila bima ya afya, ulilipi kiasi gani cha hela?.....

Sehemu D: Shughuli ya Uwiano katika makundi

Uwiano ni njia inayotumiwa na kumuwezesha anayeshiriki katika shughuli hii kutoa uwiano wa alama katika vitu tofauti au makundi kulingana na kigezo fulani. Alama inawekwa kwa njia ya kumuuliza muhusika avigawe vitu mia moja (kama vileaharagwe, mawe au baadhi ya vitu ambavyo wanakijiji wanavielewa navyo na vinapatikana kwa urahisi) katika makundi ya uwiano. Katika huu utafiti wa ugavi wa uwiano, shughuli hii italenga wale ambao wanakipato cha wastani katika familia zote

ambazo zilipata gharama za matibabu. Mtafiti atakuwa na maswali yote yanayo husiana na uwiano katika ugavi, *“kwa mfano ukichukulia ya kwamba haya maharagwe 100 ndio kipatao jumla cha familia muda wa miezi mitatu naomba ugawe kwa usawa bila kuzingatia matumizi yote au gharama zozote za matibabu”*. Hii inaweza ikafanyika kwenye ubao au ardhini tu mtafiti tu, mtafiti atahakikisha ya kwamba hiki ndicho kiwango ni cha usawa na kina uwiano na ndicho kiwango ambacho kilichotumika kwenye matibabu na kitakachobaki ndicho kilichotumika kwa gharama zingine. Hii zoezi itarudiwa katika familia zote na kunukuliwa.

Appendix 6: Ethical Review Committee Approval



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355

Ref: KNH-ERC/A/420

Wasike Metrine
Reg. No.TM310-3162/2015
College of Health Sciences
JKUAT

Dear Metrine

REVISED RESEARCH PROPOSAL: DETERMINANTS OF UPTAKE OF HEALTH CARE INSURANCE IN KIBERA URBAN SLUM HOUSEHOLDS, NAIROBI COUNTY, KENYA (P718/10/2016)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above revised proposal. The approval period is from 25th October 2016 – 24th October 2017.

This approval is subject to compliance with the following requirements:

- a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH-UoN ERC before implementation.
- c) Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
- d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
- e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
- f) Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
- g) Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

For more details consult the KNH- UoN ERC website <http://www.erc.uonbi.ac.ke>



KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: <http://www.erc.uonbi.ac.ke>
Facebook: <https://www.facebook.com/uonknh.erc>
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

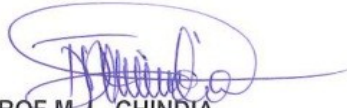


KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

25th October 2016

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Yours sincerely,



PROF. M. L. CHINDIA
SECRETARY, KNH-UoN ERC

c.c. The Principal, College of Health Sciences, UoN
The Deputy Director, CS, KNH
The Chairperson, KNH- UoN ERC
The Assistant Director, Health Information, KNH
Supervisors: Dr. John Gachohi, Dr. Joseph Mutai

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Appendix 7: Nairobi County Authorization

NAIROBI CITY COUNTY

Telegrams: "PRO-MINHEALTH", Nairobi
Telephone: Nairobi 217131/313481
Fax: 217148
E-mail: pmonairobi@yahoo.com



COUNTY HEALTH OFFICE
NAIROBI
NYAYO HOUSE
P.O. Box 34349-00100
NAIROBI

When replying please quote

Ref. No. CMO/NRB/OPR/VOL1-2/2016/78

COUNTY HEALTH SERVICES

13th December, 2016

Wasike Metrine
Reg. No. TM310-3162/2015
College of Health Sciences
JKUAT

RE: RESEARCH AUTHORIZATION

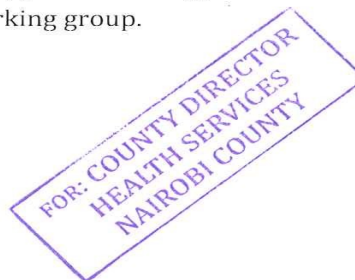
This is to inform you that the Nairobi City County Operational Technical Working group reviewed the documents on the study titled, "**Determinants of Uptake of Health Care Insurance in Kibera Urban Slum Households, Nairobi County**".

I am pleased to inform you that you have been authorized to undertake the study in Nairobi County.

On completion of the study, you will submit one hard copy and one copy in PDF of the research findings to our operational research technical working group.

A handwritten signature in blue ink, appearing to read 'R. Muli'.

R. MULI
FOR COUNTY DIRECTOR OF HEALTH SERVICES



CC: Sub county MOH
Langata

Appendix 8: Article

Background. For a country to achieve its development goals, it has to devise appropriate mechanisms that can ensure that her people are healthy enough to steer their own economic development. Kenya is a developing country and therefore, health insurance schemes are seen as a sustainable way to ensure health lives and promote well-being for all at all ages in order to attain high social economic development. This paper basically examines factors influencing the uptake of health insurance schemes among Kibera informal settlement dwellers in the capital city of Kenya.

Objective: To determine factors influencing the uptake of health insurance schemes among Kibera informal settlement dwellers, Nairobi County.

Design: Descriptive cross section study.

Setting: Kibera slum in Nairobi County.

Subjects: Households Heads.

Results: The proportion of respondents who had taken up health insurance in the informal settlement were 27.1% (n=45). Significant relationships ($p < 0.005$) between health insurance enrollment and measured factors (measured as odds ratios (ORs)) were obtained as follows: compared to married respondents (OR=1), single, separated/divorced and widowed respondents were 68%, 86%, 62% respectively less likely to own the insurance. Respondents who had attained post-secondary, secondary and primary education were 11.3, 2.3 and 1.6 times more likely to take up insurance compared to those with no formal education. Respondents working in the informal employment sector were 96% less likely to be enrolled in the health insurance program compared to those in the formal sector. Non –members in a local informal social welfare group were 78% less likely to take up insurance compared to members who were in the welfare. Respondents who earned greater than Kes 10,000 and between Kes 5,001 and Kes 10,000 were 25 and 3 times respectively more likely to take up insurance compared to those who earned an income of less than Kes 5,000 per month.

Conclusion: The proportion of slum residents without any type of insurance was high. Modifiable socioeconomic factors dominated possible reasons for uptake/ non-

uptake of health insurance. Policies geared towards elevated human development index in the informal settlements are needed to increase coverage of health insurance.