



Sanitation and Hygiene in Kibera Slums, Nairobi

Women concern´s and Nurses promotional tools

Degree Programme in Nursing
Bachelor of Health Care
Final Project
12.11.2008

Karanja Jane Mercy
Ng´ang´a Elizabeth

Degree Programme in Nursing		Degree Bachelor in Health Care	
Author/Authors Karanja Jane Mercy and Ng'ang'a Elizabeth			
Title Sanitation and Hygiene in Kibera Slums. Women's Concerns and Nurse's promotional tools			
Type of Work Final Project	Date Autumn 2008	Pages 31+ 3 Appendices	
<p>ABSTRACT</p> <p>The purpose of the study was to review the relevant literature of sanitation and hygiene regarding women in poor urban centres and explore ways on empowering women on sanitation and hygiene. The aim of the study was to describe the typical concerns for women regarding sanitation and hygiene in Kibera as well as providing women with practical suggestions to improve Hygiene and Sanitation in slums.</p> <p>The data collection method involved reviewing relevant literature which consisted research materials from poor urban centres and developing countries. In addition, United Nations publications and educational books for research were referred to.</p> <p>The findings suggest that there are seven sanitation and hygiene concerns that women experience: Toileting, water, poverty, problems caused by poor sanitation, communicable diseases, insecurity and gender inequality. Nurses need to promote hygiene and sanitation practices by advocating, educating, campaigning and participating in designing community projects that affect sanitation and hygiene. Furthermore, nurses need to work within communities, churches, and schools.</p> <p>As a conclusion, the findings of this study give idea on designing a poster for the community health care nurses who are working with women living in under privileged environments.</p>			
Keywords Women, sanitation, hygiene, developing countries, slums and poverty areas.			

Koulutusohjelma	Suuntautumisvaihtoehto	
Hoitotyön Koulutusohjelma	Sairaanhoitaja AMK	
Tekijä/Tekijät		
Karanja Jane Mercy, Ng'ang'a Elizabeth		
Työn nimi		
Sanitaatio ja Hygienia Kiberan Slummeissa Tarkastelu Naisten Näkökulmasta.		
Työn laji	Aika	Sivumäärä
Opinnäytetyö	Syky 2008	31+3 liitettä
TIIVISTELMÄ		
<p>Tämän kirjallisuuskatsauksen tarkoituksena oli käydä läpi asiaankuuluvaa kirjallisuutta koskien puhtaanapitoa ja hygieniaa naisten näkökulmasta köyhissä kaupunkilaiskeskustoissa. Lisäksi tarkoituksena oli tutkia naisten voimallistamisen keinoja puhtaanapidossa ja hygieniassa. Kirjallisuuskatsauksen pyrkimyksenä oli selvittää naisten tyyppisiä huolenaiheita puhtaanapitoon ja hygieniaan liittyen Kiberassa. Samalla kirjallisuuskatsauksen päämääränä oli tarjota käytännöllisiä neuvoja hygienian ja puhtaanapidon kehittämiseen slummialueilla.</p> <p>Aineisto kerättiin käymällä läpi asiaankuuluvaa kirjallisuutta, joka koostui sekä köyhissä kaupunkilaiskeskustoissa tehdyistä tutkimuksista että kehitysmaatutkimuksista. Lisäksi kirjallisuuskatsauksessa viitattiin Yhdistyneiden Kansakuntien julkaisuihin ja kasvatukselliseen kirjallisuuteen.</p> <p>Tutkimustulokset osoittavat, että naisten huolenaiheet näissä ympäristöissä puhtaanapitoa ja hygieniaa koskien voidaan jakaa seitsämään osaan: käymäläkulttuuriin, vesiongelmiin, köyhyyteen, vaillinaisen puhtaanapidon aiheuttamiin ongelmiin, tartuntatauteihin, turvattomuuteen ja sukupuolten väliseen epätasa-arvoon. Sairaanhoitajien tulisi edistää hygienia- ja puhtaanapitokäytäntöjä puoltamalla paikallisia yhteisöjä, opettamalla, järjestämällä kampanjoita ja osallistumalla yhteisöjen projektinsuunnitteluun näiden asioiden taholta. Olisi suotuisaa, että sairaanhoitajat toimisivat paikallisten yhteisöjen, kirkkojen ja koulujen sisällä.</p> <p>Tämä kirjallisuuskatsaus tarjoaa idean julistemallille, jonka tarkoituksena olisi yhteisön omien sairaanhoitajien kautta toimia tämän ongelman lieventämiseksi naisille epäsuosiollisissa ympäristöissä.</p>		
Avainsanat		
Naiset, puhtaanapito, hygienia, kehitysmaat, slummi ja köyhät seudut		

CONTENTS

1 INTRODUCTION	1
2 HEALTH CARE AND CONCERNS IN KIBERA SLUMS	2
2.1 Description and statistics	2
2.2 Health care delivery systems	2
3 HYGIENE AND SANITATION.....	3
3.1 Hygiene.....	3
3.2 Sanitation	3
3.2 Sanitation and Hygiene challenges in slums.	4
4 METHODOLOGY	7
4.1 Aims of the study	7
4.2 Data collection and analysis	7
5 WOMEN CONCERNS ON SANITATION AND HYGIENE IN KIBERA SLUMS..	9
5.1 Toileting.....	9
5.2 Water	11
5.3 Poverty.....	13
5.4 Problems caused by poor sanitation in Kibera.....	14
5.5 Problems related to sexual practices	15
5.6 Communicable diseases.....	16
5.6.1 Diarrhoea.....	17
5.6.2 Cholera.....	18
5.6.3 Malaria.....	19
5.7 Insecurity	20
5.8 Gender inequality	21
6 NURSES TOOLS FOR PROMOTING SANITATION AND HYGIENE	23
7 DISCUSSION.....	27
7.1 VALIDITY AND RELIABILITY OF THE STUDY	30
7.2 ETHICAL CONSIDERATIONS	30
8 CONCLUSION AND RECOMMENDATIONS	31
REFERENCES	32

APPENDICES

1. Empirical study articles used in the study
2. Literature review articles used in the study
3. Poster for the community health nurse

1 INTRODUCTION

The paper intends to find significant conclusions and make recommendations based on scientific information and ethically accepted data. The paper focuses on women, hygiene and sanitation in Kibera slums which is one of the largest slums in Africa with a population of almost 2 million people; and where 10-25% of the population are infected with HIV/AIDS. (UNDP, 2005.)

Kibera is not the only slum dealing with sanitation and hygiene problems, many developing cities are also facing the challenge. Widespread of sanitation and hygiene problems are a result of poor political leadership, mismanagement of resources and poverty. Many first world or underdeveloped countries face the same challenges, although with good political leadership it is possible to overcome the problems. Poor political leadership and corruption has led to poverty, widespread diseases and war. African leaders should be encouraged to meet the needs of citizens instead of being self-centred about wealth and power. By doing this, the poor population will be able to access basic needs such as food, education, water, shelter and medical care with less difficulties.

According to the Ministries of Health and Water, in 1983 national sanitation reached 49% of the population. Research carried out by the United Nations Children's Education fund (UNICEF) estimated that sanitation in Kenya covered 45% and 46% in 1996.

Dickens in 1883 quoted that Charity begins at home. This means good hygiene and sanitation must start at the grass roots level. Thus the study focuses on women because woman's health is reflects on the well being of the family. It is important for nurse's to bear in mind women's concerns in poor urban areas in order to be able to implement effective care given to women when they visit hospitals.

The purpose of this study is to review relevant literature on sanitation and hygiene of women in poor urban centres and to describe how nurses can help women by giving them suggestions on how to improve sanitation and hygiene. Finally, we will design a poster for community health care nurses working with women living in under privileged environments.

2 HEALTH CARE AND CONCERNS IN KIBERA SLUMS

2.1 Description and statistics

Kibera lies at an altitude of 1,670 meters above sea level, latitude 36 degrees, 50 degrees east and longitude 1 degree, 17 degrees south about 140 km south of equator. The emergence of Kibera as an informal settlement is connected with the phenomenal growth of the city of Nairobi. Kibera slums, the largest informal settlement in Africa, is situated 5 kilometres south of Nairobi City centre which is the capital city of Kenya. It houses more than a quarter of Nairobi's population. The name 'Kibera' originated from a Nubian word which means 'forest.' (Karanja et al., 2002)

Kibera is divided into nine official villages, with each village having its own elder. They are Kianda, Soweto, Kisumu Ndogo, Lindi, Laini saba, Silanga, Makini and Mashimoni. There are no residences greater or bigger than a single storey. The average home is nine square meters which has five inhabitants per dwelling. Urban services such as water and sanitation are scarce. There is one pit latrine for every fifty to five hundred people hence leading to 'flying toilets.' Kenya has a great water shortage residents rely on piped water, boreholes and the polluted Nairobi river. Drinking water is pumped through plastic pipes alongside sewage trenches. (Karanja et al., 2002)

2.2 Health care delivery systems

The Ministry of Health (MOH) in Kenya is responsible for providing health care to the Kibera population. Kenyatta National Hospital, the biggest referral hospital in East and Central Africa, is close to the Kibera slums. Other health care facilities in the slum include: health clinics, dispensaries, maternity homes, nursing homes, medical centres, laboratories and radiological services, dental clinics which are owned by non-governmental organisations and private individuals.

Attempts have been made to improve the healthcare system in Kibera by the Kenyan government, non-governmental institutions and the private sector. Health care facilities are licensed by the Ministry of Health if they meet the requirements of the National Hospital Insurance Fund (NHIF). However, most of the private facilities operate illegally, thus leading to malpractice and poor quality of health.

The demand for health care services is due to HIV/AIDS, malaria, tuberculosis, malnutrition, respiratory infections, cardiovascular diseases, perinatal diseases and accidents.

3 HYGIENE AND SANITATION

3.1 Hygiene

Hygiene is commonly known as cleanliness or conditions and practices that serve to promote or preserve health. A population that does not take into consideration hygiene is at risk of infection and illness. Improved housing, improved nutrition and improved hygiene are the essential components for the war against infectious diseases. (Greene, 2001.)

Many people living in poor urban areas experience that they practice personal hygiene such as brushing teeth, bathing the body although not as frequent as it is desired. Lack of resources, such as water, results in poor hygiene levels; toilets cannot be washed and there is not enough water to shower (Mahasneh and Sawsa 2001.)

3.2 Sanitation

There is various ways of maintaining cleanliness and hygiene conditions that prevent diseases and infections; for example, garbage collection. Poor surrounding conditions lead to low quality of health. (WHO, 1997).

Current definitions have commonly established that access to a latrine or a toilet does not automatically mean good hygiene. Access to a toilet is neither the same as its hygiene practices. Studies of health-related conditions have detected that the lack of latrines can be made less by adapting improved and hygiene behaviours. (WHO, 1993)

A successful sanitation programme improves health in a community, is sustainable at community and institutional levels, is cost effective and does not bring environmental risks.

3.2 Sanitation and Hygiene challenges in slums.

The United Nation Habitat (2006) have described sanitation and hygiene challenges in slums in terms of poor basic services results in lack of access to sanitation facilities or safe water sources. This is due to the lack of waste collection services, a poor rain water drainage system, poor infrastructure and absence the of an electricity supply.

Substandard and inadequate houses have been built in slums with temporary materials which are unsuitable for conditions such as straw roofs, mud, earthen floors and plaster. Overcrowding and congestion result to too little space per person, expensive housing rates. The cohabitation of different families and more single rooms. One room-unit in slums is often shared by five people whom they use for cooking, sleeping and living.

The lack of basic services, visible and open sewers, the lack of pathways, the uncontrolled dumping of waste and polluted environments, result to unhealthy living and hazardous living conditions. Houses may be built in dangerous locations which are unsuitable for a human settlement; for example, near waste disposal sites. Poverty or financial status is considered with some exceptions, as major features of slums. They cause slums conditions. Some socially excluded areas are thought to have increased risks of crime and other forms of social dislocation.

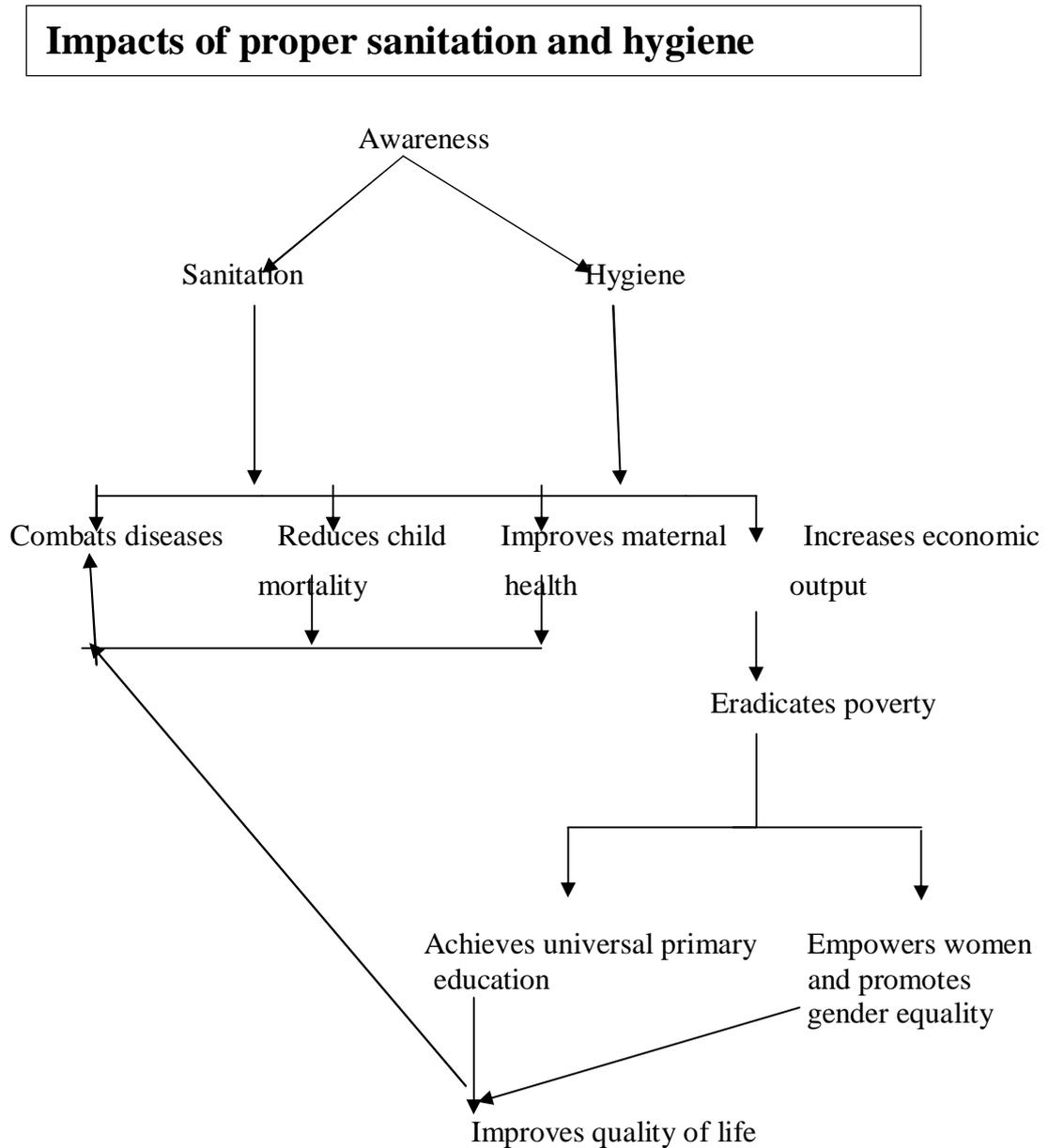


Figure 1. Impacts of proper sanitation and hygiene (Kagiri 2007 modified.)

The impact of proper sanitation and hygiene in Figure 1 above explains how improved quality of life is achieved through various ways. Awareness and access to sanitation and hygiene leads to the reduction of child mortality and combats diseases of maternal health as well as increases in the economic output and, hence, eradicates poverty. As a result of poverty eradication, women's empowerment as well as gender equality is achieved. In addition, universal primary education is attained and quality of life is improved which combats diseases.

The quality of environment is lowered mostly due to mismanagement of funds, insufficient waste disposal systems, overpopulation or overcrowding, inadequate planning as well as other human practices. People living in areas with poor sanitation and hygiene conditions are more prone to illnesses. Many diseases are associated with inadequate water resources, sanitation and hygiene (Messias 2001).

Poor sanitation is a severe threat to the environment and natural water supplies. This poor sanitation can lead to bacterial contamination in surface water resources. Untreated water and untreated sewage are likely to reach the water table, thus leading to contaminated water.

Table 1. Examples of diseases related to water, sanitation and hygiene.

Disease	Causes	Transmission	Symptoms	Effects on health	Prevention
Typhoid	Bacteria	Food, water, human waste	Fever, headache, constipation later accompanied by diarrhoea, nausea	Causes intestinal haemorrhage or perforation.	Boiled drinking water and good hygiene
Cholera	Bacteria	Water, food, person to person contact	Diarrhoea, vomiting, leg cramps	Can cause kidney failure, low blood pressure and death	Water treatment, good sanitation
Dysentery	Bacteria	Water, food	Fever, abdominal pain, nausea	Affects the large intestines	Avoid contaminated food and water and keep food away from flies
Malaria	Parasite	Bites from infected mosquitoes to human.	Headache, nausea, fever, vomiting, flu-like symptoms	Infects red blood cells	Use of mosquito nets and insecticides
Guinea worm	Parasite	Water,	Fever, severe pain in the skin, skin ulcers	Skin infections	Safe water drinking and hygiene
Scabies	Parasite	Contact from person to person	Severe itching and blisters	Impetigo	Washing regularly with soap and wearing clean clothes
Trachoma	Parasite	Contact from person to person	Eye redness, watering eyes, swollen eyelids, sensitivity to bright light.	Causes blindness.	Frequent hand and face washing, use one's towel.
Bilharzias	Parasite	Water	Bloody urine, fever, chills, cough, muscle aches	Damages lungs, kidneys, liver,, nervous system, bladder, large intestines	Using latrines instead of water sources, safe drinking water

Table 1 above describes the examples of diseases related to water, sanitation and hygiene in poor urban areas. In Kibera however, the most common diseases related to water, sanitation and hygiene are cholera, typhoid, malaria and diarrhoea. (Mulumba et al 2004).

4 METHODOLOGY

4.1 Aims of the study

Based on the information gathered from the research materials, our aims are to describe the typical concerns for women regarding sanitation and hygiene in Kibera as well as providing women with practical suggestions from the nurse's point of view to improve Hygiene and Sanitation in slums.

4.2 Data collection and analysis

The method selected to find information on women in Kibera slums sanitation and hygiene, and promotional tools was to review literature and point out the important issues. Literature consists of selected scientific articles concerning women, sanitation and hygiene in Kibera, Kenya and other developing countries in general. In addition; educational publications, journals, women, sanitation and hygiene related publications from World health organisation (WHO), UNHABITAT, UNICEF, AMREF and Red cross were used.

The articles that were used in this paper were chosen because they focused on women issues regarding sanitation and hygiene in poor urban area. The articles were found through search in database search of OVID databases (CINAHL, your journals @ Ovid and MEDLINE). Some articles were retrieved from the University of Helsinki with the help of University Hospital search pages.

Database Search	Keyword	Hits	Relevant hits
Ovid	Developing countries	1408	1
Ovid	Women and poverty areas	16	3
Ovid	Hygiene and slums	4	1
Ovid	Challenges and women	2331	6
Ovid	Poverty areas	28	2
Ovid	Sanitation and hygiene	26	3
Ovid	Sanitation and developing countries	478	2

The data collection method used in this study was the use of available data. We chose this particular method because it was the most appropriate method for a literature review research. It made it possible for the researchers to acquire the best available data for their aims and purpose.

The inclusion criteria were:

1. Articles were published in English
2. Articles used were retrieved with no cost
3. Articles had abstracts and were full text
4. The articles or publications focused on women concerns in developing countries and poor urban centres
5. Articles and publications which presented ideas of how women can improve the quality of life for the entire family were also used

Analysis of the data was the method that was used in this study. The articles chosen were carefully read and important contents that existed and repeated noted. Those

contents were then determined and derived the answers and fulfilled the aims of the study.

Data analysis took the following steps:

1. Systematic reading of the articles, publications
2. Pointing out the significant concerns, solutions and recommendations
3. Determining the core meaning of important content
4. Assembling the core meanings of the data from the articles
5. Finding measures of promoting sanitation and hygiene

(LoBiondo-Wood, Haberz, 2006)

5 WOMEN CONCERNS ON SANITATION AND HYGIENE IN KIBERA SLUMS

5.1 Toileting

According to Kibera community, a toilet is a place to relieve one, a basic need, a place to clean oneself, flush toilet, and thatched tinned house (Kagiri 2007). The distance of the toilet from the users is important due to positive and negative effects.

The figure 2 below shows that toilets located beyond 15 metres from the house make women feel insecure for themselves and for the safety of the entire family especially children. In addition, there is a tendency to waste time when a person visits the toilets, and there are long waiting periods due to many users, which leads to incontinence. Long distances to the toilet leads to people relieving themselves in buckets, plastic bags and bushes. In Kibera, very few people have toilets less than 15 metres from the house, women still feel insecure at night when they go to toilets. Toilets within 1-5 metres of reach, pose bad odour due to poor construction, in sufficient cleaning and ventilation. Bad odour attracts flies which spread diseases through food and water contamination. The figure 2 depicts that insecurity is a major concern for women regardless of the distance of the toilet from the house. This is due to poverty, unemployment, poor governance and overcrowding in Kibera (Unger, 2008).

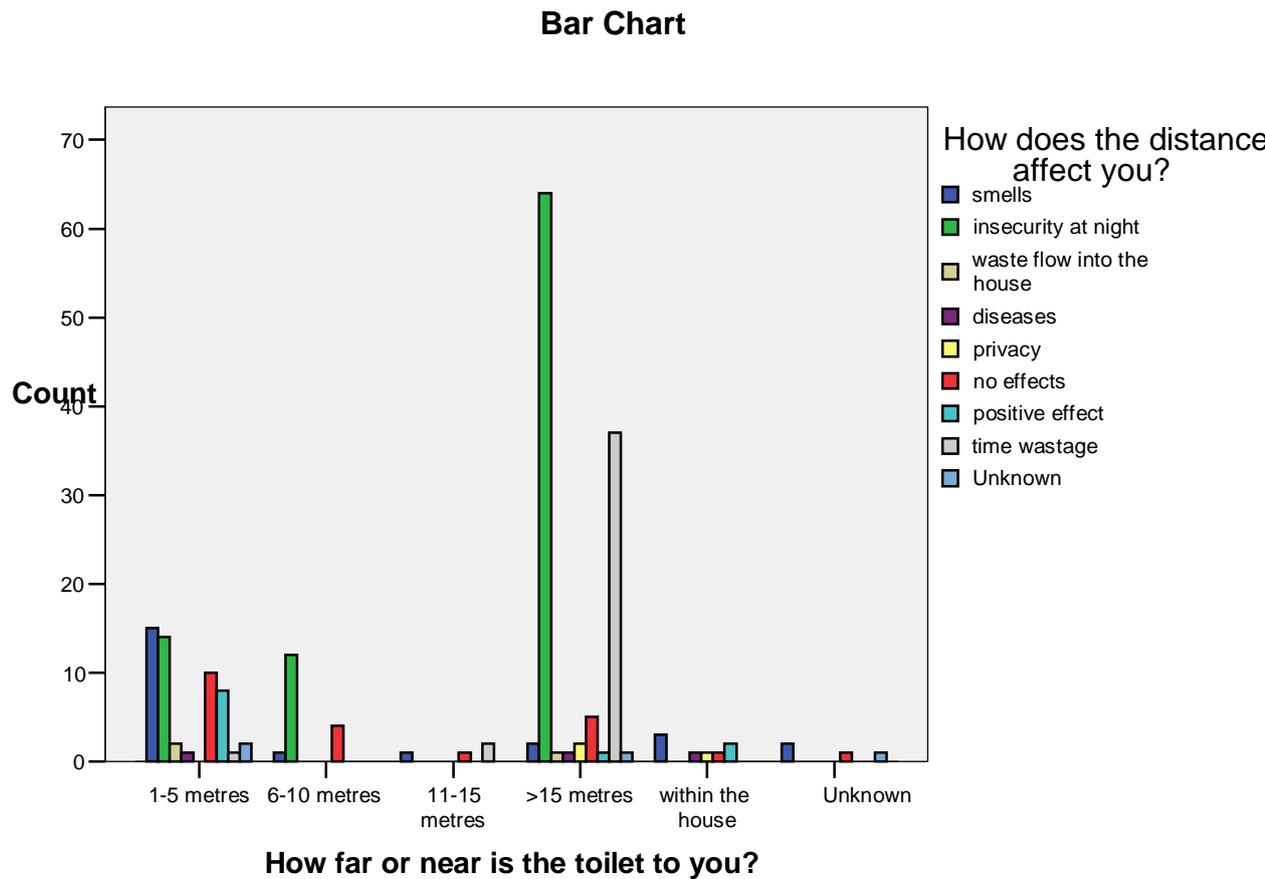


Figure 2. The figure above shows the impact of toilet distance from the community.

In Kibera, when the toileting facilities are located far from the residential areas, the residents defecate in plastic bags which they later throw in ditches, on the road side or as far away as possible. This form of toileting is commonly referred to as ‘the flying toilets’ in Kibera. In 2006, one in three people living in Kibera slums identified flying toilets to be a primary mode of excreta disposal available to them. The UNDP blames politicians and authorities for not discussing toilet facilities in this informal settlement. Piles of the polythene bags used for defecation land in roofs, and attract flies. Some of them block the drainage systems while others burst from pressure impact. Some times when they land in open water systems they get washed away and people get hit by the plastic bags when they are tossed to the air. During the rainy season, the excretion is often washed away to people’s houses. Children swim in the water which leads to diseases such as typhoid, skin disorders, diarrhoea and malaria. (UNDP, 2006). According to (Amref) 2007 report, women and children are the most vulnerable to infections related to hygiene during the rainy season when water systems become contaminated.

Toilets are built next to houses and they are hardly 15 metres deep and when you look closely you can see rats, worms and flies. These crawling creatures find their way in the houses and kitchens thus contaminating food and water. Most of the diseases that prevail in Kibera slums are a result of poor toileting. Poor toileting is the cause of all sanitation and hygiene related diseases and infections. This is a result of blocked drainage because when water gets stagnant, mosquitoes bred there leading to spread of malaria and typhoid (Dalrymple et al 2002).

It is prominent that the availability, accessibility and maintenance of toilets are the most commonly cited health related problem in Kibera slums followed by poor drainage and water supplies and the lack of health services.

5.2 Water

Water is one of the most vital natural resources for all life on Earth, and it is a basic need. Health and safety are associated with water in daily living. Secondly, the availability of clean water and sanitation prevent diseases. Each year, 4 billion cases of diarrhoea are reported, and 2.2 million people die from it (Camdessus, 2003). Clean water prevents infection from many diseases. Due to poverty and poor living conditions in the slums, water availability is a huge problem. Poor women bear the burden of unpaid chore of fetching water and are excluded from many opportunities to create wealth from water. Kibera slum dwellers face the problem of inadequate water supplies to clean the home, prepare the food, wash the utensils, do the laundry and bathe. (Bapat et.al, 2003).

According to UN-ECOSOC (1997), the deprivation of water and sanitary facilities resulting in severe water-borne diseases is one main concern for slum dwellers. It is time consuming and the labourer's efforts to provide domestic household with water is imposed on women. UN-ecosoc further notes that water has never been a free good for poor women; however it notes that improved access to safe drinking water and poverty alleviation is well established in developing countries. Comprehensive approach to water is needed to address the water concerns in slums because just having clean drinking water is not enough.

The Lack of clean and safe water supplies has lead to unhygienic food, poor sanitation, increase in diseases; thus, poor nutrition and well-being in general (Sholkamy 1996).

UN-ECOSOC found that only about 24% of all households in informal settlements have access to piped water, in the form of public water taps or water piped into the residence, versus 92% in non-slum areas of Nairobi as a whole. Since water is a very rare commodity for slum dwellers, they often tend to drink rain water which is usually trapped by gutters on the roof. Rain water is usually safe for drinking if it is boiled before consumption and stored in clean containers but because of the ignorance of the slum dwellers; they fail to do so thus the water becomes a hazard in their life.

Most sewages in Kibera slums are dug so shallow that when it rains they fill up and overflow Nairobi River, which is usually the residents' source of water thus polluting the water. Due to the lack of water, the slum dwellers are forced to use the polluted water for basic needs leading to diseases which can lead to death of thousands of innocent lives. (UNFPA, 2001). The water catastrophe in Kibera slums must be recognized for what it really is: a crisis of governance – of weak policies and poor management – rather than a crisis of scarcity, at least in the immediate term. An essential change is needed in approach to urban governance if significant change is to be seen. The rising problem of poor sanitation presents the most dehumanizing aspect of the daily battle for survival for the Slum dwellers. The poor pay an intense price for the lack of clean water and sanitation, in disease and filth. (UN-Habitat, 2006)

Inadequate water resources lead to the prevalence of diseases and ailments as expressed by women. Insufficient health facilities and the deficiency of quality care, drawn out by cost and corruption, slum dwellers are exceptionally susceptible to diseases and illness. There is usually no water in Kibera slums and you may find only one tap that ought to provide water to a thousand residents. Water from that one tap is not even enough for everyone. Women spend the whole day and night queuing to get some water and even sometimes they end-up going home with empty containers (Dalrymple et al 2002).

Women face problems with water accessibility, cost and quality. They also have inadequate access to water points, which are often located far from their houses. The landlords also ration water such that it is only available on specific days of the week and at specific times (Nyamongo et.al 2004).

5.3 Poverty

Poverty is a state of not having enough money to meet your basic needs such as water, food and shelter. Poverty is prevalent in Kenya. In 2003, 56 % of the population was below the poverty line, and it is expected to become 65.9% by 2015 (Government of Kenya, 2005).

Poverty in slums is more pronounced and has led to poor hygiene and sanitation, increase in diseases and infections, lack of proper nutrition, security and safety. The most significant general needs of every human being are housing, employment, food, toilet availability and water accessibility; unfortunately these are not available for Kibera slum dwellers due to poverty (Dalrymple et al 2002).

Poverty in Kibera slums is evident through the structures of the houses the residents live in which are often constructed of cardboard, corrugated tins, mud, thatch and plastics. They are mostly single rooms which are about six feet by nine feet and are partitioned by only a curtain. This single room is used as a living room, kitchen, bathroom as well as a bedroom where both parents and children share. People living in poverty are the most overcrowded because of the cost of housing and the large family sizes (UN-ECOSOC 1997). Lack of jobs is the main reason why poverty in Kibera slums is highly increasing. Men usually get part time jobs such as plumbing, building, cutting grass, carrying water, driving buses but women are the most disadvantaged when it comes to getting a source of income. In addition to poverty, the lack of employment also leads to the lack of education for the children, robbery, insecurity, diseases and other things. (Dalrymple et al 2002)

Poverty in slums has led to poor hygiene and sanitation, increase in diseases and infections, lack of proper nutrition, security and safety. Women are mostly affected by poverty in slums because being as housewives, they are responsible for the upkeep of the family, taking care of the children, determining the nutritional status of the family, managing and budgeting the household income, ensuring hygiene and sanitation is observed.

In order for women to fulfil their roles in the family such as child bearing, maintaining the family, bringing up the children, they should maintain their health status and practise good health behaviours as it affects themselves as well as their families and community at large (Mahasneh 2001). The income level of women aged between 18-45 years is beyond poverty line. This makes it next to impossible for a woman to be able to meet the needs of her household in Kibera slums as well as maintain good health.

Poverty has also lead spread of diseases because of lack of money to access treatment as well as to purchase medicine. Mulumba et al (2004) argues that the lack of employment opportunities in the slums, which has led to poverty, is the main reason why there is a lot of informal trading manifested in the form of randomly distributed kiosks some of which are licensed by the City Council but the majority of which operate without a valid license.

5.4 Problems caused by poor sanitation in Kibera

According to UNDP 2006, the lack of sanitation poses to security risks for women and girls. Where there are no latrines, girls and women have to wait until darkness arises, for them to look for a place to defecate. Sometimes they need to walk long distances and are raped or mugged. Rapid population growth in combination with accelerating rural-urban migration of the poor and the under employed rural dwellers is increasing the urban populations. Due to rural-urban migration, the number of slums in Kenya's capital Nairobi is increasing uncontrollably because of the population increase. Overpopulation in this area leads to few water supplies and due to the lack of water supplies, garbage collection, excreta disposal, drainage, and electricity supply. Thus the levels of sanitation in this area are reduced next to zero (Nordberg et.al 1994).

The lack of sanitation facilities is considered a big problem by the women in Kibera slums, but it is very difficult to improve the situation because of several related issues. First, there is hardly any space for latrines; the compounds are built up to capacity and available empty spaces are becoming encroached. Secondly, latrines are considered the responsibility of the landlord in this area, and because the landlord usually does not live in the area, s/he is not interested in improving the latrine situation. Observing sanitation is the duty of women in comparison to the man as the women are mostly at home doing the household chores. The lack of toilet facilities may trigger the tenants to construct a

latrine for them, but they fear to do so as the landlord might increase their rent. Public latrines are the only possible sanitation problem in Kibera because all infections, diseases and poor conditions of living are as a result of poor sanitation. (Nordberg et al 1994).

5.5 Problems related to sexual practices

The lack of privacy is one of the reasons that sexual problems arise in Kibera slums. This is because houses in Kibera are very small and congested thus the bedroom, the kitchen and the sitting room are separated only by curtains in most cases. The children grow up getting exposed to sexual practices and the parents do not have any privacy of their own. Through this, children get to know so much about sexuality even before they are of age.

Prostitution is very common in Kibera slums and women are mostly the ones involved in this trade. Most women are forced to be prostitutes because of lack of employment and because they do not have any other means of earning a living to support both themselves as well as their families. Children grow up experiencing this kind of behaviour and are exposed to sexual behaviours at a very tender age. Due to being naive and lack of sufficient knowledge, a number of children especially the girls take up this behaviour as soon as they turn teenagers (Elliot.el. al 2005).

Availability of pornographic materials eg.movies and magazines is also a huge contribution to sexual practices in Kibera slums. They are numerous cheap and affordable video rooms which cost 5 Kenyan shillings approximately 5cents euro. Young adults and even children whether employed or not can easily raise the amount to afford to watch a pornographic movie or buy a magazine. This kind of material corrupts their brains as well as their behaviours as they grow up.

Exposure to these kind of sexual practices in Kibera slums leads to increase of sexually transmitted diseases (STDs) such as HIV/AIDS, gonorrhoea, syphilis, herpes etc. Young girls also get impregnated forcing them to drop out of school so that they can raise their children. Young girls who are not ready to become parents opt for abortion which is illegal in Kenya. Majority of the girls who undergo abortion are at a high risk of infection, infertility of even death because the people carrying out the procedure lack

the skills and knowledge needed. Exposure to sexual practices has led to promiscuity, diseases, poverty and also death. (Mahasneh 2001)

5.6 Communicable diseases

Health hazards are directly related to poverty, a polluted and stressful environment, social instability and insecurity. People living in the slums of Kibera are more vulnerable to communicable diseases and malnutrition. Women of child bearing age and children are particularly at risk.

The risk factors for diseases in the slums are water, sanitation and hygiene. They act in competing and complementing transmission pathways for causing diseases. Faecal-oral diseases are a major burden. Human and animal excretion products can affect human health through various transmission pathways which include transmission through ingestion of water for example, through drinking, transmission caused by lack of water linked to inadequate personal hygiene, transmission caused by poor personal and domestic hygiene, transmission through contact with water containing organisms and transmission through contaminated aerosols from poorly managed water and drainage systems. (Pruss et al, 2002)

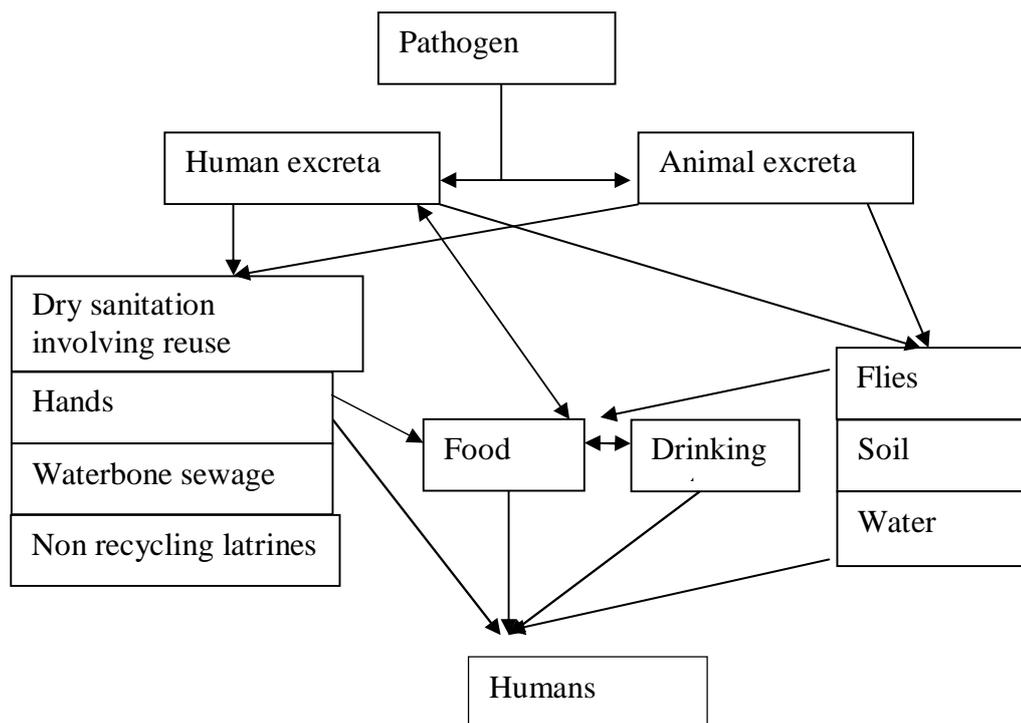


Figure 2. Transmission pathways of faecal- oral disease (Pruss et al 2002. modified)

Communicable diseases are spread through physical contact with infected individuals, liquids, food, body fluids, contaminated objects, airborne inhalation, or through vector borne spread. Most of the diseases in Kibera slums are a result of the lack of high personal hygiene standards and enough pit latrines to be used by everyone. The spread of infections from one person to another are frequent because of the overcrowding and congestion situation in slums. Women face the hustle of communicable diseases related to the unsanitary living environments, the lack of water and inadequate nutrition. The most common communicable diseases in Kibera slums are cholera, malaria, and diarrhoea.

5.6.1 Diarrhoea

Diarrhoea means the passage of three or more loose stools per day. It is usually a symptom of gastrointestinal infection, which can be caused by a variety of bacterial, viral and parasitic organisms. It can be spread through contaminated food or drinking-water, or from person to person as a result of poor hygiene .Acute diarrhoea leads to fluid loss, and may be life-threatening, particularly in young children and people who are malnourished or have an insufficient diet. Diarrhoeal diseases pose a major threat to the health of people living in Kibera slums, particularly because of the poor environment. (WHO 2008)

Diarrhoea poses a huge risk for Kibera slum dwellers because of the lack of proper sanitation and hygiene. Most Kibera slum dwellers are unemployed and poverty is a major problem. This is why the inhabitants of Kibera run indecent businesses to earn a living such as roasting maize, selling food stuffs such as chips, mandazis, samosas, prostitution. The methods used to prepare these foods are poor and unhygienic. People usually cook the food besides the roadside where dust, flies, sewages and all kinds of dirt surround them. Most people tend to buy these kinds of foods because they are affordable and forget the low hygienic measures carried out when preparing the food. This leads to the spread of diarrhoea time after time. The poor drainage also makes the slums muddy and impenetrable during the rainy seasons. This leads to several consequences including increase in breeding sites for mosquitoes, filth, foul smell and

diseases such as diarrhoea. The lack of washing hands with soap and water before handling food, eating leftover foods as well as a dirty food storage surrounding is major causes of diarrhoea among children (Sheth and Obrah 2004).

Lack of safe and treated drinking water is one of the main causes of diarrhoea. Most water in Kibera slums is contaminated because water systems are broken and they are built next to sewages. The combination of poor sanitation services and inadequate water resources has led to frequency of communicable diseases which pose a danger to the community at large. Children of less than 10 years of age are at high risk of contracting cholera as their hygienic levels are very low and often need a grown-up person like a mother or elder sibling to take care of them. The health and nutrition of these children is very low as most of them only take one meal per day. (UNICEF, 2007) has estimated that 50% of these children facing such conditions are at a high risk of low resistance level to infectious diseases which results to risks of high mortality.

Poor sanitation leads to spread of diseases in slum settlements thus increasing diarrhoea incidences. Population Activities (2001) estimate that, water-borne diseases such as diarrhoea infect about 250 million people yearly and almost ten million die. Diarrhoea is a serious health problem in the overcrowded Kibera slum. There is scarce source of health information for the slum dwellers. Poor environmental conditions, poor methods of faeces disposal and high poverty levels expose the community to diarrhoea diseases (Kungu et.al, 2002).

5.6.2 Cholera

Cholera is a severe intestinal infection caused by ingestion of food or water contaminated with the bacterium *Vibrio cholera*. Its incubation period is about one day to five days, and produces an enter toxin that causes a profuse, painless, watery diarrhoea that can quickly lead to severe dehydration and death if treatment is not promptly given. Vomiting also occurs in most patients. Cholera is often transmitted by consumption of contaminated food and drinks. The risk of infection can be reduced by taking hygienic precautions. Kibera slums dwellers face the risk of Cholera infections because of the poverty levels which lead to inadequate sanitation and lack of clean drinking-water. (WHO, 2008). In Kibera, people rarely wash hands thoroughly with

water and soap before handling food and after visiting the toilet. They are not keen if the food is well cooked or warm enough to be consumed.

Women face the challenge of Cholera because no matter how much they try to clean their houses or cook food in a hygienic environment, they still face the problem. This is because they live next to blocked drainage systems or overflowing toilets in which germs and toxins breed. Furthermore, their children pick anything edible thus fall ill and spread the disease to all the members of the family. Due to lack of water, women use rain water for basic needs though it is often unhealthy because when people excrete in paper bags and it rains, it mixes with this water therefore leading to unsafe collected rainwater as it is mixed with the stool that people throw anywhere. This continues to spread cholera infections in the community (Nyamongo et.al 2004).

With lack of essential hygienic disposal of human faeces, adequate supply of safe drinking water, and good food hygiene, cholera eradication is next to impossible in Kibera (WHO, 2000).

Due to the fact that those toilets were located next to water pipes, when the pipes burst the sewage contaminates the water during repair. The people end up drinking that water which is basically a mixture of faeces and urine thus ends up getting Cholera. Despite the women's high level of understanding the importance of providing appropriate diets for their families, poverty hinders them to accomplish this thus the immune system of especially their children is lowered leading to vulnerability of catching infections. The shortage and contamination of water supplies and the lack of sanitation and suitable sewerage disposal make cholera one of the most common health problems in Kibera slums (Dalrymple et.al 2002).

5.6.3 Malaria

Malaria is caused by a parasite called Plasmodium, which is transmitted via the bites of infected mosquitoes. In the human body, the parasites multiply in the liver, and then infect red blood cells (WHO, 2008). Nahlen et al. indicate that the World Health Organization (WHO) estimates the worldwide malaria morbidity burden as being between 300 million and 500 million clinical malaria cases a year.

The common occurrence of malaria in Kibera slums is associated with stagnant water that provides ground for mosquito breeding (Nyamongo et.al 2004).

Kibera slum dwellers are aware of malaria as a disease but are handicapped by lack of adequate knowledge on symptoms, cause, predisposing factors, and prevention and control measures. Mosquitoes breed in stagnant water, around bushes and also in areas where refuse is disposed poorly. Symptoms of malaria include fever, headache, joint pains and malaise.

The women find malaria to be a big burden in their families because they spend a lot of money to buy medication and if a member of the family is sick they have to be absent from work to take care of the sick (Karanja et.al 2002). Inadequate provision for drainage increases the risk of malaria in Kibera slums as its mosquito vector breeds in flooded areas and ditches, insufficient provision for sanitation (Elliot et.al.2005).Lack of accessibility to affordable mosquito nets and treatment to those affected by malaria in Kibera slums is a challenge.(Brundtland et al 2000).

5.7 Insecurity

It's the state of being subject to danger, injury or a feeling of anxiety. Being the largest slum in East Africa, Kibera is bound to face insecurity of the highest degree. All Kibera slum dwellers undergo insecurity but the main major insecurity each one of them experiences is Human insecurity. Human insecurity in any given community is the core reason that food insecurity, health insecurity, violence insecurity, job insecurity among others is present.

• Lack of water, sanitation and hygiene	↔	Diseases
• Poor housing conditions	↔	Risk of fire, floods, collapsing.
• Lack of security of residence occupancy	↔	Fear of being evicted any time
• Short of education	↔	Illiteracy and limited choice of jobs
• Lack of justice	↔	Exploitation of human rights
• Inadequate ability and enthusiasm to help slum dwellers	↔	No recognition of human dignity.

Fig.3 Human insecurity in Kibera Slums. (Human Security Fund 2004) modified.

Women and young girls often feel insecure as they are vulnerable to rape, sexual harassment and even physical harassment. The figure 3 above explains clearly how human insecurity is classified and what are its outcomes. Due to the lack of water, sanitation and hygiene, prevalence of diseases is more common. In addition, Kibera slums dwellers are at risk of their houses catching fire, collapsing or even been broken into because of poor housing conditions in this area. Most people living in Kibera illegally and attaining a house contract with their landlord is very difficult thus they live in the fear of been evicted or thrown out at any moment.

5.8 Gender inequality

Gender inequality is well defined as to women not having same rights, privileges and opportunities unlike men. In Kibera slums, gender inequality is more evident in the sense that women are more or less considered as housewives and anything involving money, property, decision making and many more is the responsibility of the men who in this case are always the heads of a household. Although many urban women enjoy equality in education and professional life, the majority women in Kibera slums are discriminated in this field mostly because the society is controlled on a patriarchal system (Sapna et.al 2003).

The Forum for African Women Educationalists (FAWE) knows that there is need for women to be involved in decision making regarding sanitation and hygiene in order to give priority to women and girl's menstruation needs a priority. In most African cities only men are involved in decision making; men do not menstruate so the issue to address the menstruation needs is left out. Many African girls of menstruation age drop out of school hence losing the opportunity for education and better lives. There is therefore the need for women to be involved in the designing of toilets and waste management decisions.

Most rapid gender assessments note that women are silenced on menstruation issues. Men look at menstruation issues as rather personal women issues that are filthy and should not be talked about by decent people. By silencing women, the need is therefore ignored and menstruation is therefore used to condemn and exile women. The women concern is how this silence has to be broken and women brought into designing toilets.

The African woman bears the burden of taking care of children, the disabled, the aged and household chores. Toilets are designed without consulting their users mainly women who have to take the people they care for to the toilet. It is therefore, difficult for women to fit in the narrow toilets with young children, the disabled or the elderly. Due to gender inequality, toilets are designed in public locations where women can be observed by anyone and where their movements can be monitored. The toilet doors face footpaths or streets exposing women to the public. Often the doors of the toilets do not close completely, and sometimes there is no water to wash hands or to flush. There is nowhere to dispose sanitary products, hence women have to walk out, hiding the used sanitary items.

Women face male violence, which is usually domestic violence, and choose not to reveal this to anyone, because, in many cases no one will believe, and they are afraid that if their husbands hear they reported the matter, they may be chased away from their homes. (Sapna et.al 2003)

Gender inequality has caused women in the Kibera slums to be over submissive to men and this has led to women having no say and, thus, a man is left in control. Young girls also face discrimination because their education is less valued by the members of the community in comparison to the boys. They are often forced to work; as house girls thus their education level attainment is limited. Lack of education therefore affects girls and continues until they are grown women in the society (Keraka and Wamicha 2003).

Female-headed households in the slums often lack support especially from their male partners, who are unemployed, because the men feel jealous of successful women. Slum dwellers, which often migrate from rural to urban areas, often, come with their traditional beliefs and practices. Some of these practices are related to family roles; beliefs related to diseases, food and lifestyle mostly affect women. If these traditional beliefs are not followed effectively, they are attributed to violation of cultural codes, social ethics and taboos.

As a result of gender discrimination, a man can easily get away with not following all the traditional beliefs but when it comes to a woman, it is a whole different scenario. Women are tied down by these beliefs, because they are consequently in fear of being rejected and disowned by the community and family. They are forced to comply to the

traditional beliefs which in many cases can be done away with (Keraka and Wamicha 2003).

6 NURSES TOOLS FOR PROMOTING SANITATION AND HYGIENE

The Ill-health of people living in the Kibera slums is largely due to ignorance and overpopulation. Nurses have the primary responsibility to influence the health care pattern in a community. Individuals see nurses as experts in advising communities on wellbeing. Nurses can serve as educators as a link between the Ministry of Health leaders, authority leaders and the community. Nurses should inform all community members and especially women that communicable diseases can be basically prevented by boiling water and by cooking food properly and that washing hands with soap and water helps get rid of germs (WHO. 2001)

The nurses' roles in advocacy, awareness rising and information exchange on gender issues is needed for the local authorities and technical designers. Education on sanitation and hygiene habits is a vital intervention nurses can apply in Kibera. Since women and children are the most affected, education can be done during visits to health care centres, and women groups organisations where nurses could give a presentation. Nurses should possess knowledge of the situation and of specific interventions of managing, for example, problems that are caused by sanitation such as diarrhoea. Nurses in Kibera need to understand that intestinal and skin diseases are often caused by the lack of proper sanitation and hygiene (Nyamongo et.al 2004).

Nurses need to convince the government of the importance of increasing affordable health facilities in this area. By doing so, medical supplies, treatment and equipment will be freely available for the slum dwellers. This would reduce the morbidity rate and mortality rate. Women's and children's visits to health care facilities are frequent due to the opportunistic infections. The recovery process is slow and complicated when people continue living in the same environment with the pathogens and when there is no hospitalisation during the treatment period. Education on proper hygiene and sanitation practices is therefore, a key asset in preventing infections. It is also the responsibility of nurses to intervene for the slum dwellers by discussing with the government the importance of not demolishing the slums, but in the contrary the government should get rid of the unsanitary conditions in the existing slums. (Miner 2003)

Nurses should campaign on the construction of community public latrines in Kibera slums where one has to pay a small amount of money to use the toilet. Since the toilets will be clean and maintained appropriately, the slum dwellers will be willing to pay for using the latrine. By doing so, sanitation and hygiene will be highly enhanced and the health status will be improved. (Nordberg et.al 1994)

In almost all households in Kibera slums, there are over six children. This leads to congestion in the house, and women lack time to care effectively for each and every child. Nurses are therefore responsible for educating women in Kibera slums on family planning methods, so that the women can well be able to plan the number of children they want. This way overpopulation is reduced in this area and the little amount of money the women earn can now be enough for a smaller family.

Due to the lack of proper and available means of communication, Kibera community does not receive behind to receive new and important information. Therefore, the nurses in this area should advocate the government to increase the number of communication channels such as televisions, radios, newspapers, journals and magazines in this area. The government should ensure that the languages used are understandable by the community members of Kibera. Since women are mostly involved in sanitation and hygiene situations, they should be encouraged to participate in community groups, drama sessions, dances, songs and poems which are all involved in communicating developmental messages. By doing so, information will be effectively spread in the slum areas and the problems facing them will be curbed (Keraka and Wamicha 2003).

According to UN-Habitat and Gender Water Alliance (2005), community participation is becoming a central issue in modern times. It should have its own initiative, planning and management of people's quality of life. This requires a change in thinking and action of community based projects. Working with the community, requires nurses, therefore, to start at the level of households, working upwards from there to the community and even higher levels. This ensures that projects meet people's needs. Government and organisations can then come in to help in sustainability of the projects. Nurses have the potential to support and expand community based initiatives and to achieve goals for quality hygiene and sanitation. Nurses should be encouraged by examples of effectiveness of community-based projects for example the Maji ya Ufanisi

(Water for Efficiency) organisation has worked with a section of slum dwellers in Nairobi to improve sanitary conditions, improving the livelihood for 45,000 slum residents.

A successful programme in promoting hygiene and sanitation practices among the Kibera people requires implementation through the community context. Nurses can borrow a similar example from the HIV/ AIDS campaigns that have had success around the country. Nurses have the advantage in that family and kinship are important in the Kibera society. Relatives live in the same surroundings take their neighbours as close as their relatives. The education strategy for the community, therefore, has the possibility to be implemented well, since the effectiveness benefits close related people.

Health promotion in the community involves nurses focusing on places where people spend most of their days. Nurses need to meet people in these areas to and interact with them, for example, in market places, health care centres and religious centres. Working with the community helps the community identify their problems and how to overcome this problems.

“The church as a major social institution is a powerful resource for health care programming” (Miner, 2003: 7). Many Africans are church goers. Hence the church is an effective institution and it reaches high percentage of people. Therefore, the church is able to identify people’s needs in different surroundings and to provide a good environment for nurses to educate various groups, for example, women. The church is also able to organise people into various groups to mobilise community in the implementation of new health promotion. Miner (2003) notes that nurses can use pastors, teachers, local politicians and community elders as an instrument for the success of any implemented health programs.

Education programs in churches have the greatest potential to reduce health problems. The Church and other religious institutions can influence people's behaviour and change to certain behaviour. Health care providers should work in collaboration with churches to utilize the principles of community-based programs. Nurse researchers should include churches as participants in their research, and involve the church in the implementation and evaluation of research recommendations. Churches often offer a good setting for the sustainability of a program.

Developing education programs that are implemented in education curriculum for school goes is an effective way for nurses to promote hygiene and sanitation practices at home in the present and in the future when children grow. Working with schools may fail to reach those children who do not attend school and especially girls who mainly do the household chores. In addition to visiting schools and teaching children on the ways and means of good sanitation and hygiene, nurses should also encourage school teachers to introduce sanitation and hygiene lessons in the school curriculum. By doing this, the children would grow up having acquired knowledge on the ways and means of disease prevention and sanitation and hygiene maintenance. (Keraka and Wamicha et al 2003).

Table 2. A Summary of the nurses main key points for promoting sanitation and hygiene in Kibera slums

ACTORS					
Idea	Women	Women and nurses	Government	Churches and the community	Schools
Giving information about communicable diseases	x	x	x	x	x
Providing education on proper sanitation and hygiene	x	x	x	x	x
Awareness of family planning methods	x	x		x	x
Role of advocacy	x				
Promotion of hand hygiene	x	x		x	x
Construction of affordable health facilities in the community			x		
Campaign of construction of community public latrines	x	x	x	x	x
Availability of proper and available means of communication			x		
Introduction of sanitation and hygiene lessons in the school curriculum			x		x
Active involvement in	x	x		x	x

developmental community group meetings					
--	--	--	--	--	--

The nurse's involvement to promote hygiene and sanitation is a good model for the awareness of the whole community to make uplifts their arms for a better future. This is the least expensive and sustainable way to improve quality of life than the old way of practice where the slum dwellers just wait for the government to improve their way of life. The government is still doing their part with available funds to upgrade slums through the help of Habitat (Mulumba et al 2004). However, this should not prevent nurses from promoting health according to the current situations. There have been previous nurse's campaigns in health care for example HIV/AIDS in Nyanza where HIV infection rates have decreased. Community health nurses in Kibera can use the same strategies for posters, education, organising walks for awareness of the community. Such campaigns are favoured by the news because they attract large groups of people. (Henrique's, 1995)

7 DISCUSSION

After looking into the concerns of women living in Kibera slums, the authors understand that the concerns are mostly faced by women and children. It might be accurate to say the concerns are more due to inequality between the rich and the poor. The inequality will continue due to the development of big estates for the rich whereas unemployed people from rural areas migrate to urban areas searching for employment. These rural to urban migrants often end up working for the rich as domestic workers such as house girls and start their families in cheap living areas where they can afford to live.

The findings reflect on the matters affecting women living in Kibera slums. Toileting, problems from inadequate clean water, insecurity, gender inequality, poverty, communicable diseases and problems related to poor sanitation affect women according to the data. Previous studies in other poor urban centres such as Jamaica show that women, sanitation and hygiene practices are of great concern due to the poverty levels. Promotion of health in families can be done through educating women because they are the caregivers for the whole family (Miner, 2003).

The media houses, especially the international present documentaries from Africa based on the slums. The news are always headed on the extreme poverty, inadequate clean water, overcrowding, HIV/ AIDS and fighting creating pessimistic feelings toward the slum and the slum dwellers. From the findings, it is certain to say that slum dwellers are faced by those problems from time to time, however what is lacking in the slums is educating slum dwellers especially women on how they can improve their quality of life for example by participating in the design of the slums. It is of much benefit if people are aware how much they can do to make life better. The lack of such knowledge will always make development of any country lag behind its goals. Kibera people are motivated to work together to improve their home villages. Based on interviews, Amurunzu-Nyamongo 2004, many Kibera residents think working together to promote health is for the benefit of the whole community and they are motivated to work towards the communities goals.

According to Henrique's (1995) success for the nurses to empower the poor has enabled to tackle poverty level in Addis ababa slum, Ethiopia. The project by one nurse from Ethiopia educated in Britain has enabled families their curb economic misfortune, the community has been able to overcome the water problems by sinking bore holes and planning for their own piped water from the wells. Empowerment of women has improved their status in the slum and in themselves. Such empowerment in Kibera can make women powerful and independent and matters concerning living will be better understood by local authorities. In addition communicable diseases such as diarrhoeal diseases will be prevented lowering the costs to cure the sick ones. Empowering communities will also increase the security for the people living in Kibera because people will build houses that are more stable; girls will not drop from schools due to menstrual problems hence employment in future.

Maintaining proper sanitation and hygiene either individually or in a community is of great significance. Observing proper ways of sanitation and hygiene is not difficult and demanding. People just need to change or make adjustments in their daily routines. Ensuring that toilet facilities are washed and maintained, proper means of waste disposal, drinking of safe and clean boiled water, maintain asepsis at all times, observe proper methods of cooking are some of the small but important factors that contribute to the improvement of sanitation and hygiene

Problems related to sanitation and hygiene are enormous therefore it is important to find ways and means of solving them. Education on sanitation and hygiene imparted through motivated agents will play a major role in reduction of diseases as well as improving health as a whole (Sheth and Obrah 2004).

Sanitation and hygiene problems affect mostly poor developing countries which due to poverty are unable to curb the problem. Failure of publicly financed health care to cater for the poor in almost all developing countries is an issue that needs serious attention from the government as well as aid agencies. Health sector policies goal should be to reduce inequalities in the quality and availability of health services. Inequalities in income, knowledge especially, health specific knowledge, accessibility of health services, availability of safe drinking water as well as sanitation and hygiene services. Health ministries should work hand in hand with other ministries to examine alternative delivery methods which will reach the poor developing countries facing sanitation and hygiene catastrophes, and also find improved and better ways of increasing knowledge on ways to eradicate the problem (Wag staff, 2002).

Environmental improvements are very important in making the health status of individuals better. Prevalence of water-borne diseases, suggest that improvement in provision of drinking water, better waste management , improved toilet facilities in slums will lead to a more sustainable and significant improvement in health status than just simple treatment. From our point of view, investment in education, environmental infrastructure and sanitation are much more important than investing in medical treatment or care (Mulumba et.al 2004).

Based on this information nurses can play an important role in the improvement of sanitation and hygiene in Kibera. They need to focus on activities designed to emphasise the importance of sanitation and hygiene, increase awareness on problems related to sanitation and hygiene, and educate the community on proper waste disposal as well as prevention of diseases. (Mahasneh, 2001)

7.1 VALIDITY AND RELIABILITY OF THE STUDY

Cultural similarities of the authors and people living in Kibera play a role in the credibility of the study. The authors of this final project are familiar with the culture and health beliefs, as well as the phenomenal related to the study. The authors speak the same languages with the Kibera community and most information is found in English, thus, increasing the reliability of the study. In addition, most authors of the research articles share the same cultural background with the authors hence there is cultural understanding to increase the reliability.

The literature review method used in the research may give cause for biases. The researchers of this final paper acknowledge that the authors of the research articles may interfere with the results and conclusion due to their own interests, beliefs and experiences. Some research articles are from different developing countries, and although the slum characteristics may be the same, due to the cultural differences the concerns for women in the slums may be different.

7.2 ETHICAL CONSIDERATIONS

When the study project began, the authors of this final paper informed the supervisors at Metropolia University of Applied Sciences concerned with research projects about the study, and they sought permission to conduct the study. The supervisors granted permission to proceed with the study. Permission was sought from the matron of Tumaini Health Clinic where nurses will start to implement nurses' promotional tools according to findings to the women who will seek treatment from January 2009. The promotional tools such as education, advocacy, campaigning and informing are beneficial to women and do not have ethical risks.

"Nurses as consumers of research must acknowledge about legal and ethical issues of a research study to evaluate whether the researcher has ensured appropriate human rights" LoBiondo-Wood & Haber (2006):314. Therefore as researchers the authors of this final paper have ensured appropriate women rights considerations in their project.

The authors of this final paper bore in mind the ethical considerations from the research articles that were used for the literature review. They also considered the articles guaranteed confidentiality and anonymity by not placing the names of the participants

and identifying matters in the study. In addition authors of this final paper ensured in the research articles that the participant's participation was voluntary the community on proper waste disposal as well as prevention of diseases (Mahasneh, 2001).

8 CONCLUSION AND RECOMMENDATIONS

From the findings, areas of education, advocating women rights, campaigning for better hygiene and sanitation practices and active involvement of nurses in community based programmes are of much benefit as discussed in this paper. It is evident that concerns of women living in slums or other poor urban setting and promoting health concerns in these areas needs to be explored more.

Based on the findings, the challenge to secure the women's concerns will remain despite the empowerment. The practical suggestions for empowerment remain a challenge. It might be necessary to devote more time and effort to put the ideas in practice. The nurses also face the challenge of the leaders who want to remain in power and have more power to organise restraining groups.

REFERENCES

Amuyunzu-Nyamongo, M. and Taffa, N. (2004) The triad of poverty, environment and child health in Nairobi informal settlements. *Journal of Health & Population in Developing Countries* 74(8): 23-30

Bapat, J. D and Desai, S. K. (2003) In United Nations World Water Development Report 2. Water a shared responsibility.

Birongo, M. J. and Le, Q. N. (2004/2005) *An analysis of water governance in Kibera Kenya*. Roskilde University centre- international master of science in environmental policy and the global challenges.

Broome, B. (2007) Women and health care. *Urologic Nursing*. 27(1):81–83, 92.

Brundtland, R.W. Guerra, C. A. Noor, A. M. Myint, H. Y. Hay, S. I.(2000) Malaria Risk: *Estimation of the Malaria Burden* 437(56):33-45.

Camdessus, M. (2003) Financing Water for All. The dream of safe water for all is within humanity reach.

Dalrymple, L. Doodoo, F. N. Ducci, M. E. Jitta J, Bikaako, W. J. Khadiagala, G. M. His Worship Kizito, J. S. Nderingo, R. R. Nganda, B. M. Opolot, S. J. Prosser, W. Desai, S. Perry, M. J. (2004). Tracking Gender-Based Human Rights Violations in Post-war Kosovo. *American Journal of Public Health* 94 (8): 1304-1307.

Ekstrom, G. (2008) *Slum Health: Understanding to Action*. Karolinska Institute, Stockholm, Sweden.

Elliot, D.S. Pietro, G. Gabriella, C. (2005) The 21st Century health challenge of slums and cities. *American Journal of Public Health* 365 (9462):901-903.

Government of Kenya (GOK) 2005 National Poverty Eradication 2005-2015. Government Printers, Nairobi.

- Greene, V. (2001) Personal hygiene and life expectancy improvements since 1850: Historic and Epidemiologic Associations. *American Journal of Infection Control* 29(4): 203-206.
- Henrique's, J. (1995) Developing countries: The nurse who empowers the poor. *Nursing Standard*. 9(48): 18-21.
- Hilfinger, M. D. K. (2001) Globalisation, nursing and health for all. *Journal of Nursing Scholarship* 33(1): 9-11.
- Hiruma, H. (2007) Global Water Finance: Assessment of the Funding Needed to Attain the Millennium Development Goals for Water and Sanitation University of Pennsylvania.
- Kagiri, E. (2007) Integrating environmentally sustainable methods to upgrade basic sanitation: *Case study Soweto East Kibera slum*.
- Karanja, J. Wambari, E. Okumu, D. Odhiambo, E. Karuri, I. Muthwi, S. M. Kibe, M. Osawa, N. and Osaki, Y. (2002) Community-based research by team. A study of awareness of malaria among Kibera population: Implication for community based intervention. *Bulletin of National Institute of Public Health* 51 :(1) 51-55.
- Keraka, M. N. Wamicha, W. N. (2003) Child Morbidity and Mortality in Slum Environment along Nairobi River.
- Klaassen, C. W. (2007) Obstacles to Health Care. A Nurse's Experience in Sudan. *Urology Nursing* 27(5): 391-400.
- LoBiondo-wood & Haber (2006) *Nursing Research: Methods and Critical Appraisal for Evidence-Based Practice*.
- Mahasneh, S. M. (2001) Health perceptions and health behaviours of poor Jordanian women. *Journal of Advanced Nursing* 36(1): 58-68.
- Mara, D. D. (2002) Water, Sanitation and Hygiene for the Health of Developing Nations. *Journal of water and health* 5(1): 39-50

Miner, D. C. (2003) Jamaican Families. *Holistic Nursing Practice* 17(1):27-35.

Mulumba, J. Kakosova, B. and Juma, O. (2004) Health status of people of slums in Nairobi, Kenya. *Environmental Research* 96 (2):219-227.

Nordberg, E. and Winblad, U. (1994) *Urban Environmental Health and Hygiene in Sub-Saharan*. Reasons for unsatisfactory acceptance of antiretroviral treatment in the urban.

Pruss, A. Kay, D. Fewtrell, L. and Bartram, J. (2002) Environment Health Perspective, Estimating the burden of disease from Water, Sanitation and Hygiene at a Global Level. *Environment Health Perspective* 88 (110):537-542.

Samantha, B.B. and Wijk, C.V. (1998) Criteria for successful sanitation programmes in low income countries. *Health Policy and Planning* 13(1):78-86.

Sapna, D. And Melissa, J. P. (2004) Tracking gender-based human rights violations in post war Kosovo. *Journal of Public Health* 94 (8): 1304-1307.

Sclar E.D and Northridge, M. E. (2003) Slums, Slum dwellers and Health. *American Journal of Public Health* 93 (9):1381.

Sheth, M. and Obrah, M. (2004) Diarrhoea prevention through food safety education. *The Indian Journal of Paediatrics* 71: 879-882.

Stren, R. (2002) *Building Healthy Cities: Improving the health of urban migrants and the urban poor in Africa*. Woodrow Wilson International Centre for Scholars.

Unger A, A. Johansson, R. Zachariah, D. Some, I. Van-Engel- gem, A. M. and United Nations Children's Fund (UNICEF) 2007 Integrated management of childhood illnesses: An initiative for effective case management.

United Nations Development Programme report on sanitation. The Collection of Household Excreta. The Operation of Services in Urban Low-income Neighbourhoods 2005.

United Nations Economic and Social Council (1997) *World Water Vision. Results of the gender mainstreaming project.*

United Nations Habitat (2005). *The Unique Challenges Of Improving Peri-Urban Sanitation.*

United Nations Habitat (2006). *A shared vision for hygiene, sanitation and water supply and a framework for mobilisation of action.*

United Nations Human Settlements Programme. *Water and Sanitation in the worlds Cities: Local action for global goals.* Earth scan, 2003.

Wag staff, A. (2002) Poverty and health sector inequalities. *Bulletin of the World Health Organisation* 80 (2).

Werlin, H. (1999) The Slum Upgrading Myth. *Urban Studies* 36 (9): 1523-1534

World Health Organisation 1993. *Participatory Hygiene and Sanitation transformation: A new approach to working with communities.*

World Health Organisation 2008. *The challenge in disaster reduction for the water and sanitation sector: Improving quality of life by reducing vulnerabilities.*

Wuest, J. Hodgins, M. J. Malcolm, Merritt-Gray. M. Seaman, P. (2007) *The Effects of Past Relationship and Obligation on Health and Health Promotion in Women Caregivers of Adult Family Members.* *Advances in Nursing Science* 30(3): 206-220.

Empirical study Articles used in the study.

Author, Title	Purpose of the study	Sample	Data collection and analysis	Main results
Amuyunzu-Nyamongo, M, Taffa, M 2004.	To explore the community members' expression and understanding of the linkages between urban poor environments and childhood illnesses	24 focus group discussions and 62 in depth interviews.	Interviews	Mothers linked these illnesses to lack of adequate and clean water, unsafe waste disposal systems, lack of adequate and nutritious food and air pollution.
Henriques, Jane. 1995: Developing Countries: The nurse who empowers the poor.9(48) 18-21	Prevention of poverty, delinquency, disease and drug misuse.	Slum dwellers of Addis Ababa-Ethiopia.	Pilot project and observations.	Training of teachers and school vacancies for primary children and introduction of vocational workshops in a youth rehabilitation scheme for young people with delinquency problems.
Klaassen, Whitney C.2007: Obstacles to Health Care : A nurses Experience in Sudan.27(5) 391-400	To investigate the major issues affecting the general health status and the causing morbidity and mortality	Nurses and doctors and 12 parents who were patients at a hospital in Sudan.	Information and statistics were drawn from published research, observations in hospital wards, interviews with parents, interviews with nurses and doctors.	An overwhelming number of infectious diseases that often surge into epidemics, lack of public health interventions such as clean water, limited availability of health care facilities and professionals
Kungu, Musau, Ochieng, Omolo, Rakwar, muthwii, mhonda, Koyengo, osaki, 2002.	To determine the prevalence and risk factors and associated with diarrhoea in children below five years.	105 households	Cross-sectional survey and questioners	The socio-demographic information revealed overcrowding with each person occupying living area of 12.8 sq. feet. Only 58% of the respondents received health information from recognized health facilities.
Mahasneh.S.M 2001: Health perceptions and health behaviours of poor urban Jordanian women 36(1) 58-68	To determine the health perceptions and health behaviours of poor Jordanian women aged 15-45 years in the context of the family and community in which they live	267 Jordanian women aged 18-45 years, whose household income was below poverty line.	Semi-structured interviews. Health behaviours were measured by asking women about personal hygiene, diet, activity and exercise, sleep, smoking, drinking alcohol and safety & security.	Study women gave a lower rating of their health status than those reported in national studies. Although they reported bathing once a week, eating three meals per day and sleeping 8 hours there remain areas for improvement in their health behaviourism caring out exercise and regular health examinations.
Miner, Dianne Cooney 2003: Jamaican Families 17(1) 27-35	To provide a more current discussion of the structure and function of the Jamaican family.	Jamaican families	Structural functional approach.	Creation of health promotion programmes and prevention strategies.
Mulumba J, Juma, O, Kakosova, B, Health status of people of slums in Nairobi, Kenya. Environmental research96(2) Oct 2004 219-227	To describe the health status of people living in the slums of Nairobi	Cross sectional study based on data from visitors at a clinic in Mukuru slum, Nairobi	A random 5% sample was drawn from a paper card of 16000 visits that were registered during 2 years	More females with average age (by slum) than males with average age (by slums) are visitors of the clinic. The major health complaints and diagnoses by slum show that environmental conditions can have major influences on health status.
Sheth.M, Obrah.M 2004: Diarrhoea prevention through food safety education	To reduce the prevalence of diarrhoea in children and improving knowledge, attitude and practices of mothers regarding safe feeding practices.	Mothers of underprivileged children.	Statistical analysis and baseline survey.	Reduction in the incidence of diarrhoea and improved sanitation and hygiene were observed.
Kagiri, Eva 2007	To find out the most feasible toilet technology to satisfy sanitation needs of the community in a	663	Questioners	To instil a good system of governance in the community to sustain any sanitation project as well as toilet

	sustainable way.			technology that is inexpensive for the users.
Keraka.M.N, Wamicha:W.N,2003: Child morbidity and mortality in slum environments along Nairobi river	To examine impact of slum environments on morbidity and mortality profile in slum environments along the Nairobi river.	Purposive sampling was used to select twenty women	In-depth interviews and extensive Literature review.	Poverty is a major factor in child morbidity and mortality. Low income levels in families are not able to improve the sanitation that was in turn going to improve the health status of families.
West., Hodgins.M.J, Malcom, J. Merritt-Gray.M, Seaman.P 2007: The effects of past Relationship and Obligation on Health and Health promotion in Women Care givers of adult family members. 30(3) 206-220.	To test the utility of Wuest's theory for editing the health outcomes and health promotion of care giving women.	255 female care givers recruited through community advertising.	Surveys were conducted using computer- assisted data entry. The data were analysed using spss, version 14 and LISREL version 8.7 Preliminary descriptive statistics were examined to evaluate data accuracy.	Care of adults in the community will be informed by a more complete understanding of the multiple issues inherent in the family care giving.

APPENDIX 2

Literature review Articles used in the study.

Title	Purpose of the study	Sample	Data collection and analysis	Main results
Adam Wagstaff.2002: Poverty and health sector inequalities.	To find evidence on inequalities in health between the poor and non-poor and on consequences for impoverishment and income inequality with health care.	111 articles.	Literature review, key words poverty, health status, income, health services accessibility, organised social justice.	Inequalities in health and service utilization very largely reflect inequalities in health such as education, income, location and housing characteristics. Health ministries should explore alternative delivery methods to reach the poor in health sector.
Broome. 2007. Women and health care. 27(1)81-83,92	To find specific health risks related to gender. To also find differences and challenges that confront women in the delivery of optimal health care.	Women of distinct groups with many health risks as well as unique risks related to gender.	Literature review	Health disparities among women and in particular African-Americans, Hispanic-Americans, Native-Americans, Asian-Americans, Alaskan-Americans and Pacific Islanders when compared to the majority population.
D.D.Mara 2002: Water, sanitation and hygiene for the health of developing nations	To improve water supplies and sanitation.	Developing countries	Literature review	The target is to introduce simple, appropriate, effective and affordable water and sanitation supplies.
Karanja j, Wamambari E, Okumu, Odhiambo, Karuri, Muthwi, Kibe, Osawa, Osaki 2002	To determine awareness of spread, pre-disposing factors, control and effects of malaria in Kibera slums, to facilitate designing community based interventions	160 households	Cross-sectional study and stratified systematic sampling.	Awareness of malaria as disease, symptoms, relationship to vector, predisposing factors, prevention and control measures, burden of disease and health seeking behavior.
Pruss.A, KayD.Fewtrell.L,& Bartam. J,2002	To compare the burden from water, sanitation and hygiene with the burden from other risk factors or diseases.	14 geographical regions	Literature review.	The estimated burden of water, sanitation and hygiene to be 4% of deaths and 5.7% of total disease in the world.
Samanta BB. Wilk.C.V 1998: Criteria for successful sanitation programmes in low income countries.13(1) 78-86	Stimulate discussion on what attributes can be taken as characteristic of good environmental sanitation programmes, and which indicators can be used to assess those attributes in actual sanitation programmes	3 low income countries	Literature review.	Successful sanitation programme reduces flows of waste poisoning to drinking water.
BirongoM. John and Le.Q Nhi (2004-2005)	This paper analyses the water governance problems in Africa's arguably biggest slum Kibera (Kenya), and zeroes in on the Public-Private Partnership between the two biggest water suppliers in the slum, who, due to their troublesome partnership, have considerably contributed to the on-going water governance chaos.	44 articles	Literature review	That the water governance problems in Kibera are multi-faceted in which corruption has been a factor disrupting the governance system and aggravating the water governance problems; and consequently there should be some alternatives to improve the situation.

Do Women need nurses’ to improve the quality of Life for the Community?

Ng’ang’a Elizabeth & Karanja Jane Mercy

The purpose of this study is to review relevant literature on sanitation and hygiene of women in poor urban centres and to describe how nurses can help women by giving them suggestions on how to improve sanitation and hygiene.

The aim of the study is to describe the typical concerns for women regarding sanitation and hygiene in Kibera as well as providing women with practical suggestions to improve Hygiene and Sanitation in slums.

