KNOWLEDGE, ATTITUDE AND PRACTICE OF CHOLERA OUTBREAKS IN NCHELENGA DISTRICT

BY

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EN 1997, RN 2001, RM 2004

A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF NURSING SCIENCES, SCHOOL OF MEDICINE, UNIVERSITY OF ZAMBIA IN PARTIAL FULFILLMENT FOR THE BACHELOR OF SCIENCE DEGREE IN NURSING

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LIST OF ACRONYMS

CHAZ	Churches Health Association of Zambia
CSO	Central Statistic Office
DHMT	District Health Management Team
DRC	Democratic Republic of Congo
GRZ	Government Republic of Zambia
MOH	Ministry of Health
NDHMT	Nchelenge District Health Management Team
ORS	Oral Rehydration Salt
UK	United Kingdom
UNAID	United Nations Aid International Development
WHO	World Heath Organization

DECLARATION

I here by declare that with the exception of the assistance acknowledged, the work presented in this study for Bachelor of Science Degree in Nursing is the result of my own efforts/studies. This work has not been presented either wholly or in part for any other degree and is not being currently submitted for any other degree.

Signed: ______________________ **Date:** 22-05-2010

(Candidate)

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STATEMENT

I Kabita Kabita, hereby certify that this project was entirely the result of my own independent investigations. The various sources to which I am indebted are clearly indicated in the text and in the references.

Signed: ______________________________

(Candidate)

Date: 22-05-2010

DEDICATION

This research paper is dedicated to the following; my father Willy Kabita, my mother Sophia. M, my brothers and sisters my daughter Leya, sons and wife without whose patience, love, understanding, moral support and utmost encouragements during the periods of my training discouragements, my studies and this work would not have been a success.

Above all, my dedication goes to God the almighty Jehovah, for the many blessings, grace, care and love throughout my life, training and for whom together with my two parents I would not be in existence today.

ABSTRACT

In Zambia, cholera is one of the major health problems country wide. During rainy season, at least, one part of the country will notify the outbreak of cholera. The purpose of this study was to determine Knowledge, attitude and practice of Nchelenge community towards recurrences of cholera. The study hypothesis stated that the lower the knowledge on transmission and prevention of cholera the poorer the practice. Negative attitude towards cholera leads to poor practice towards prevention of cholera.

A descriptive cross sectional study design was used. Data were collected from the first week through to the fourth week of September, 2009 on 50 adult respondents in using a structured interview schedule from Kabuta and Kashikishi catchment areas. The data collected were analyzed manually.

The findings of the study showed that 60% of the study respondents had poor knowledge, they did not know how far their toilets were from the source of water, and 82% of the respondents with primary education had low level of knowledge of cholera causes. 82.2% female respondents had low level of knowledge of cholera prevention. 70% of the respondents had good attitude towards prevention of cholera. The majority, 92.6% of the respondents had poor practice of hand washing after using the toilet. 77.8% of the study respondents who stayed in high density area had poor practice, they did not treat water for drinking and also 72.7% of people who were crowded in one house disposed off refuse carelessly which is a poor practice. The majority of respondents 56% drew water from contaminated lake and shallow wells a bad practice, many people do not access safe and clean piped water because they are not staying in authorized settlement.

The major implications of the study were, toilets build near the source of water contaminated water tables and people were drawing contaminated water from boreholes, the local authority should legalize settlement so that many residents access piped safe and clean drinking water. The practices of not washing hands after using the toilet lead to contamination of food and utensil causing auto infection with *vibrio cholera*. The health care system in Nchelenge has a mammoth task to educate the communities on hand hygiene after using the toilet. The study unit of 50

respondents was small to represent the whole district, as this report was produced there was another cholera out break in March 2010 in the other parts of the district where the research was not conducted. There was need for the health care system to consider conducting a similar study on a large scale.

Since the majority of respondents had low knowledge and poor practice, the health care system has not adequately addressed the problem of cholera despite good attitude from all religious groupings. It was therefore, cardinal for the care system to rampantly educate the people of Nchelenge on the cholera problem. The local authority should also legalize settlement for the majority residents so that they are accessed with safe and clean domestic water.

To conclude, cholera is a major disease of health concern to all the people and the country Zambia. Knowledge, attitude and practice are very important variables in the prevention and control of cholera. It was therefore, calling for committed efforts from residents of Nchelenge, Health care system of Nchelenge and the cooperating partners to fight the recurrences of cholera in the District. To overcome the low knowledge, poor attitude and bad practices of people, education was a powerful tool which was needed to be imparted and empowered in the community people.

Apart from low knowledge, attitude and practice identified in this study as factors contributing to recurrences of cholera in the District, there could be other factors other than these. Therefore, since 50 respondents were not adequately representative of the entire district, it was necessary to carry out a research on cholera on a large scale to cover the land area, islands and swamps of Nchelenge in totality where people were living.

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND INFORMATION

In the 21st century, epidemic cholera remains a significant public health problem. The World Health data indicated a concerning increase in the number of cholera cases world wide since the beginning of the 20th century. Although the first pandemic began in the 1817 in Asia, it later spread to other parts of the world, such as South America and Africa, "cholera's new homeland," where it was concentrated in 87% of cases in 2006 (WHO2006).

Of the 575,268 cases reported by the World Health Organization since January 2000, over 93% were from sub-Sahara Africa. Just in 2001, the World Health Organization and the Global Outbreak Alert Response Network participated in the verification of 41 cholera outbreaks in 28 countries.

Zambia has suffered large cholera epidemics in recent years (WHO, 2006). Cholera outbreaks continued to be problems of public health concern given that they cause great human, social and economic losses. Cholera had been in Zambia since 1977, initially, it was mainly in Mpulungu District in Northern Province. The 1977 cholera outbreak in Mpulungu brought about the 1998 Statutory Instrument no.158 under the Public Health Act, cap 295 of the laws of Zambia. The Statutory Instrument was known as The Public Health (Cholera Infected Areas) Regulation 1978, which is still in force it stated that cholera infected areas must be restricted areas and that the state (Zambia) was responsible for the health of the people both in infected and no infected areas. From 1990 to to-date, Nchelenge District, Lusaka, the capital city of Zambia, along with the rest of the country has experienced several cholera outbreaks of which three were major out breaks. These major out breaks occurred during 1991-92, 1999-2000, where there were 8,058 admissions. The case fatality rate for these out breaks ranged between 2.3 percent and 33.0 percent (National Assembly of Zambia, 2009).

The current cholera out breaks had shown a continuous upward trend compared to the previous out breaks and if urgent interventions were not put in place it is likely to spread all over the country and have a greater impact than the epidemic Zambia witnessed in 2000. As from 24th August, 2005 to 20th February, 2006, Zambia recorded a cumulative total of 5,467 cholera admissions of which 137 patients died and twenty nine were brought in dead and 171 were still under treatment in the cholera centers. (Masebo, 2006). Since then sporadic out breaks have been experienced in some parts of the country which include Nchelenge District.

The incidence of cholera is accelerated by poor sanitation, contaminated food, and contaminated water due to low knowledge, negative and poor practice of unhygienic life styles of living. All these situations are common in over crowded environments.

In Zambia the government through the Ministry of Health provides the main health care services. There are also cooperating partner that supplement government's efforts of delivering quality health care to the people. The government wishes to offer quality health care to the communities through a decentralized health care system. Zambia has District Health Management Teams (DHMT). Each DHMT is responsible for providing health care services to its people. One of the DHMTs is Nchelenge DHMT.

Nchelenge district is located in the northern part of Luapula Province and is 250 kilometer away from Mansa the provincial headquarters for Luapula and about 1,200 kilometer away from Lusaka the capital city of Zambia. Nchelenge is one of the seven districts in Luapula province. The district has a projected 2009 population of 155,510 people, (2000 census), and has a total surface area of 4,793 square kilometer of which 60% is land, 10% swamps and 30% water. The district shares border with Congo DR in the west, Chienge District in the north, Kaputa District in the north east and Kawambwa District in the south east. Lake Mweru forms the boundary between Nchelenge and the Congo DR. The main features of Nchelenge are: Luapula valley, Lake Mweru, Luapula River and the islands (MOH 2006).

Nchelenge has a health care delivery system that comprises the government and the private sector. The provincial health office provides technical support to all the health institutions in the province including Nchelenge District. It has one district hospital namely; Kashikishi District Hospital which serves as a referral hospital not only from the health centers in the district but also for other district in the province. There are 13 health centers that are under Nchelenge DHMT and all these refer patients to Kashikishi District Hospital.

The deteriorating health care system is most evident in the poor socio-economic status of the Zambian people and the poor environmental sanitation of the communities. This is evidenced by the growing hazardous refuse disposal in almost all residential areas in the country. Agents of diseases proliferate in specific kinds of environments. A warm humid environment with refuse all over favors the growth of *vibrio cholerae.*

The poverty stricken people are potential hosts of *vibrio cholerae*. This organism can spread from one person to the other without being aware. Cholera is a serious acute intestinal infection caused by a germ called *vibrio cholerae* and man is the main reservoir of the infection. Cholera is a communicable disease and the organism causing it is found in areas where there is poor disposal of refuse and feaces. Contamination of food and water from Lake Water, shallow wells infected by pit latrines located on higher grounds predisposes inhabitants to cholera out breaks.

Contamination of food occurs when people infected with *vibrio cholerae* within the area or who have travelled to the area handle food with infected hands and when food come in contact with faecal contaminated material and not adequately washed such as fruits and vegetables. Contaminated utensils and flies can also transmit *vibrio cholerae*. Indisposed refuse is a good site for flies to feed and breed. These are easily contaminated by flies and become a source of cholera infection, and spread to contaminate food and water.

Fecal contamination of water occurs when infected people with *vibrio cholerae* pass infected feaces in water which may come in contact with humans through drinking. This contaminated drinking water may come in contact with humans from shallow wells, streams, rivers, piped taps and lakes. Reaching people with the above important information and the measures that can be applied to prevent recurrences of cholera is the responsibility of not only health workers but all those who would like to promote the quality of life of all the people around them and beyond.

The practice of social gatherings such as funerals, parties, washing of dead bodies before burial, purchase and consumption of food stuffs bought from street vendors encourage transmission of cholera. Chanda, (2004) cited how sharing food items at the Pediatric ward on the Hospital was responsible for the spread of cholera in the ward among mothers who were nursing their children.

Cholera causes profuse diarrhea, the diarrhea can be massive more than a quarter an hour and can kill within hours or a day and can spread to a substantial proportion of the community, (Berkow, 1999). The diarrhea is of sudden onset with 'rice water' stools without faecal odour, blood or pus, muscular cramps, effortless vomiting and rapid dehydration with low urine output, sunken eyes and cheeks, diminished skin turgor, hypotension and rapid, weak pulse. The temperature may be normal and the patients suffer from acidosis.

Table 1.1

Cholera outbreaks in Zambia and its neighbors from 2008 to 2009 February

Country	Cases	Deaths	Case fatality rate	Period
Angola	692	9	1.3%	Oct 2008 to February 2009
Botswana	8	1	12.5%	Nov 2008 to February 2009
Malawi	1,851	52	2.8%	Nov 2008 to February 2009
Mozambique	6,124	66	1.1%	Oct 2008 to February 2009
Namibia	103	6	5.8%	Oct 2008 to February 2009
Zimbabwe	83,265	3,877	4.7%	August 2008 to February 2009
Zambia	3,747	50	1.3%	Sept 2008 to February 2009

Source: (WHO, 2009)

Table 1.1 shows that all Zambia's neighbors had cholera outbreaks between 2008-2009 including the DRC which had no data on its outbreak. Zimbabwe recorded the highest number of cholera cases with 83,265 patients treated followed by Mozambique with 6,124 cases; Zambia rated the third country with 3,747 cases in the same period.

Zambia, as a WHO member country, takes part in the prevention of cholera as well as on its management in all designated cholera centers which the Ministry of Health (MOH) sets up during any outbreak. Chanda, (2009), quoting MOH reported that the Disaster Management and Mitigation Unit under the Vice President's office have an important role in the management of cholera in the country. The unit helps with mobilization of human resource, financial resource and medical resources towards the management prevention and control of cholera during an outbreak. Ministry of Health has a committee prepared for any epidemic in the country as a measure to combat the outbreak of infectious and communicable diseases in the country.

Massive health education to the community helps in public awareness and cooperation, provision of adequate, safe water supply to the communities through sinking of boreholes and sale of chlorine in health institutions at discounted prices, removal of all soiled wastes from the environment which includes refuse and human waste, improvement on sewer disposal and treatment of sewage plants, discouraging social gatherings during cholera out breaks and washing of dead bodies especially if cholera is suspected to be the cause of death, and refuse disposal through out the country by the local private enterprises from market places and residential areas. Marketeers are also encouraged to dispose off their waste products in bins to avoid attracting flies that transmit the germ *vibrio cholerae.* Reaching people with the above important information and the measures that can be applied to prevent recurrences of cholera is the responsibility of not only health workers but all those who would like to promote the quality of life of all the people around them and beyond.

At national level, there is a committee at Ministry of Health responsible with national epidemic control and surveillance in an effort to combat infectious diseases. The government through the Office of the Vice President initiated the Disaster Management and Mitigation Unit to look into matters of disasters affecting the country. Efforts to make Zambia clean to improve environmental sanitation through the "Make Zambia Clean" campaign were launched in 2006. Making drinking water safe through cooperating partners by construction of boreholes and sale of chlorine to most Zambian communities and construction of sufficient latrine has been an effort by government all these years (Masebo, 2006).

Nchelenge District has an Epidemic Preparedness Committee comprising of members of the community, nearly all the health centers have an environmental health technician, health education on hygienic practices is given in all the communities and sale of chlorine to make drinking water safe is in place in designated places (Nchelenge DHMT, 2009). Nchelenge has also designated cholera Treatment Centers where the patients are nursed in isolation. Cholera is an indicator of underlying deficiencies in basic human requirements. When basic human requirements are given the necessary attention cholera would not be expected.

1.2 STATEMENT OF THE PROBLEM

Despite all the control and preventive measures cholera epidemics continue to be a threat in Zambia as Table 1.2 shows incidences and case fatality rates of cholera in Nchelenge-Zambia.

Table 1.2

Cholera outbreaks in Nchelenge from 2002 to2007.

Year	Population	Morbidity	Mortality	Case Fatality rate
2002-2003	113,933	212	6	2.8%
2004-2005	129,908	257	10	3.8%
2005-2006	135,883	299	12	4.0%
2006-2007	142,134	387	23	5.9%

Source: (Nchelenge DHMT, 2009)

From the table above there is an increase in morbidity, mortality and case fatality rate between 2002 and 2007. Therefore, from 2002 up to date there have been outbreaks of cholera during every rainy season in Nchelenge showing that cholera has been a public health concern to the community according to table 2 which shows that there has been a 3.8% increase in cholera case fatality rate in Nchelenge between 2002 t0 2007.

The disease trend indicates worsening cholera situation in intensity and extent of spread. It also indicates that cholera is endemic in Nchelenge District. Unpublished information reports that there were many cases of cholera, and deaths that are not captured and reported as a result of cholera in Nchelenge District, some sources revealed that deaths range between 50-60 deaths in one season because of cholera alone. It is a devastating disease because of its high mortality and morbidity (percentage increase).

In Nchelenge District most people are going into informal employment leading to indiscriminate street vending especially in food stuff to local people and to outsiders. These create the media for transmission of cholera as hygienic measures are usually not followed when preparing and selling these food stuffs. (GRZ/ World Bank Report, 1999). The causes of cholera are due to poor personal hygiene practices and poor environmental sanitation where there is poor refuse disposal.

The effect of all these cholera outbreaks is that lives have been lost leaving behind many orphans, widows and widowers. When there is an outbreak of cholera in the community school going children are affected; they will not be able to attend classes while suffering from cholera or when nursing sick parents. Food production and security for some families will be low because of sick adults and time spent on nursing the sick. Consequently this state of affair will lead to malnutrition in both adults and children making them susceptible to cholera (Vlok, 1996).

Deteriorating and inadequate health infrastructure and medical supplies for the expanding population has led to decline in quantity and quality of access to health services in the district. The already compromised available funds and medical resources in the country are transferred to the fight against cholera leaving behind debts to be paid by the District. The tourism industry in Luapula Province which is supposed to bring revenue is adversely affected since tourists will fear to be infected with cholera.

1.3 Factors Associated with Cholera out Breaks in Nchelenge may be many but the major ones include the following:-

Not much has been achieved in the control and prevention of cholera in the country and Nchelenge District largely because the disease affects people in densely populated areas. There is high level of cholera outbreaks and people becoming infected as a result of low literacy, poverty, sub-standards hygiene and inadequate public health care services. Several factors may be associated with cholera outbreaks in Nchelenge district. These factors will be discussed in this study under socio and economic factors, service related factors and disease related factors.

1.3.1 Practice Related Factors

High consumption of raw vegetables such as, tomatoes, cabbages, onion and okra lead to exposure to cholera germs. *Vibrio cholerae* can survive on raw produce for 2-5 days; the exposure could occur 2 – 5 days if the vegetables were handled in markets and vendors that lack facilities for maintaining adequate hygiene. Most people eat cold left over foods, drink untreated water, they do not practice hand washing after defaecating and many do not wash hands during food preparation. An asymptomatic but infected food preparer could inoculate *vibrio cholerae* into cooked food. Most residents share latrine with neighbors and do not dry their kitchen utensils in the sun on racks. Food can be contaminated via kitchen utensils, *vibrio cholerae* can persist for 1-2 days on utensils (Dubois, 2006).

1.3.2 Service Related Factors

i. Health Education not adequate

It is possible that health staff in Nchelenge District do not conduct massive health education messages to the people on cholera prevalence and prevention. Knowledge on cholera actually plays an important role in the prevention of the disease. People of Nchelenge may not have adequate information. Education is a key to knowledge and affects behavior of people. Lack of sensitization and inadequate knowledge may contribute to the high recurrences of cholera.

ii. Lack of Public Health Nurse

All the health centers in the District do not have a public health nurse who is supposed to work with the community directly to address issues of public health in the district. Therefore, this consequently contributes to recurrences of cholera.

iii. Few Environmental Health Technicians

Most of the health centers in the District are understaffed and there only 11 Environmental Health Technicians not able to adequately provide health services in the District. This consequently may contribute to compromised provision of health services in the district leading to cholera outbreaks.

iv. Poor water supply

Cholera is as a result of inequity and poverty. People get infected because they do not have access to safe drinking water and they maintain the transmission because of the absence of proper water supply system. Infection with cholera is during the course of domestic duties.

v. Uncollected refuse

Outbreaks of cholera are likely to be high when literacy levels are low among the community because they will not be enlightened on the prevention of cholera through collection and proper disposal of refuse. Uncollected refuse is a breeding ground for flies to multiply and rapidly spread the germ causing cholera.

vi. Resources

Inadequate funding towards health services, inadequate chemicals to treat and make water for drinking safe and little time allocated to preventive measures such as giving health education on communicable diseases in the district, may lad to cholera outbreaks.

1.3.3 Social and Economic Factors

i. Inadequate community knowledge

Inadequate community knowledge on health matters will lead to poor personal and environmental hygiene practices. High consumption of raw vegetables such as, tomatoes, cabbages, onion and okra lead to exposure to cholera germs. *Vibrio cholerae* can survive on raw produce for 2-5 days; the exposure could occur if the vegetables were handled in markets and vendors lacking facilities for maintaining adequate hygiene.

ii.**Poverty**

Most residents in Nchelenge live poorly along Lake Mweru banks and most likely pass their waste products and wash infected materials in Lakes and shallow well water causing contamination of water and food. Most people eat cold left over foods, drink untreated water, they do not practice hand washing after defaecating and many don't wash hands during food preparation.

iii. Unemployment

Most of the residents are not in formal employment hence may not afford to buy chemicals to treat drinking water, furthermore, they can not afford to stay in better houses and hence opt to live unplanned structures along the rivers and lake with poor water supply and inadequate sanitation facilities that will lead to contamination of water and food. Through this cholera is this likely to spread.

iv. Street vending

The high poverty levels among the residents has led to mushrooming of street vendors who sell food stuff which is sometimes uncovered, exposing the food products to flies, vectors of *vibrio cholerae* which in turn contaminate water and food.

1.3.4 Disease Related Factors

i. Carrier state

An asymptomatic but infected food preparer could inoculate *vibrio cholerae into* cooked food. Most residents share latrine with neighbors and do not dry their kitchen utensils in the sun on racks. Food can be contaminated via kitchen utensils, *vibrio cholerae* can persist for 1-2 days on utensils (Dubois, 2006).

ii. Resistant Strain of *vibrio cholerae*

Strain of *vibrio cholerae* that is resistant to the available water treatment chemicals and antibiotics contribute to cholera outbreak. Chronic Diarrheal diseases too, such as Dysentery and Typhoid can lead to malnutrition which eventually lowers an individual's body immunity and become susceptible to cholera infection.

iii.Malnutrition

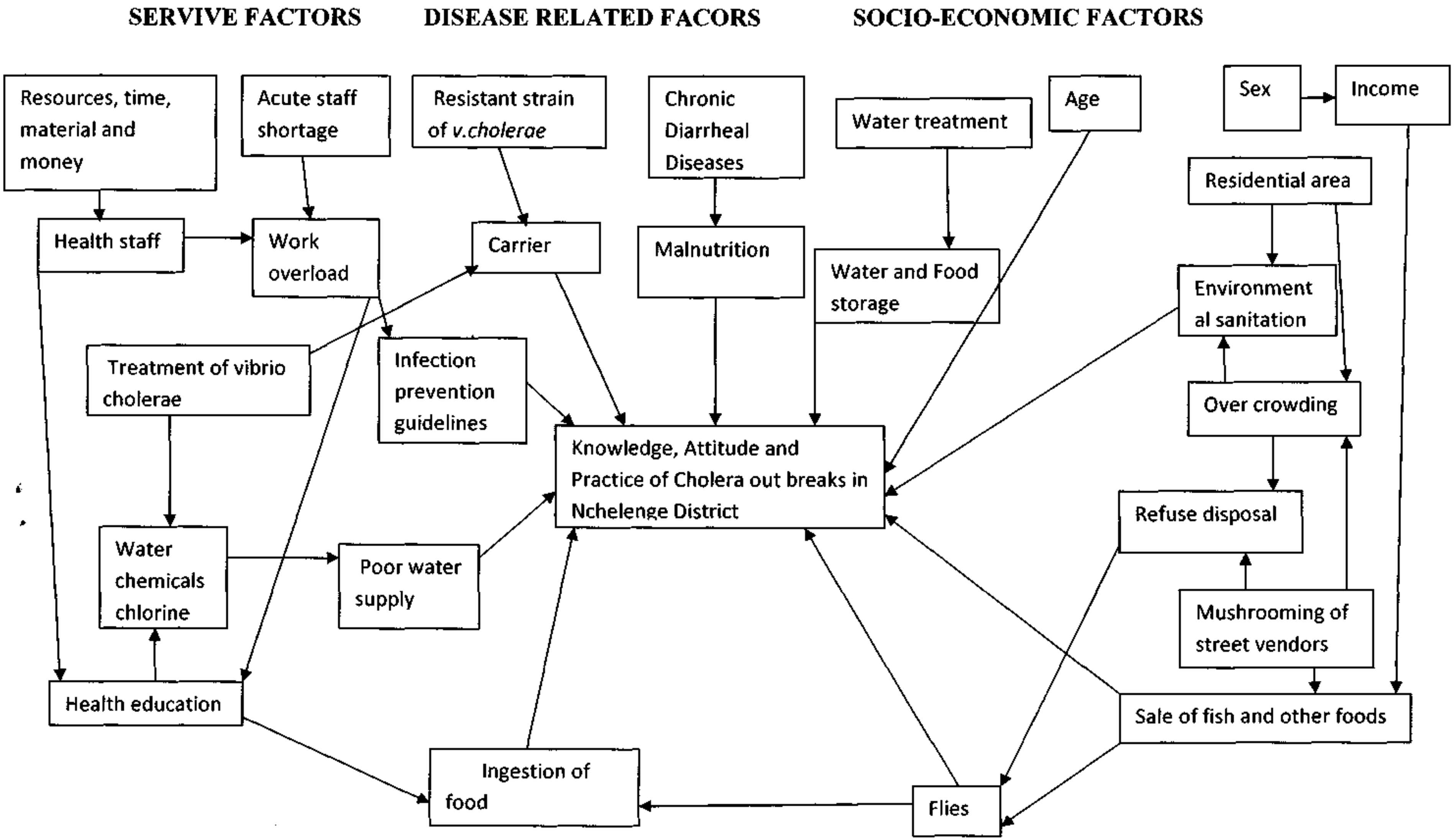
Inadequate food to eat and chronic diarrheal diseases will lead to malnutrition. Malnutrition lowers body immunity hence making people susceptible to cholera.

iv.Chronic Diarrheal Diseases.

Chronic Diarrheal diseases too, such as Dysentery and Typhoid can lead to malnutrition which eventually lowers an individual's body immunity and become susceptible to cholera infection.

1.4 PROBLEM ANALYSIS DIAGAM

FACTORS RELATED TO CHOLERA OUTBREAK IN NCHELENGE DICSTRICT



1.5 JUSTIFICATION

The magnitude and frequency of cholera outbreaks in Zambia has plagued the country since 1977 up to date and it is most likely to continue if more attention is paid on case management than on preventive measures. Lusaka city council conducted a study on cholera and the study showed that people in Lusaka drink water from contaminated sources. This study was followed by extensive health education on behavioral change towards cholera. Chime and Kapwepwe (1994) conducted a study on cholera in Lusaka, in their study it was confirmed that many people are unable to practice what they know with regards to the prevention of cholera.

Despite efforts made through massive health education and improvements made in making drinking water supply safe, cholera outbreaks have continued to be a health problem and threat in Nchelenge District. Hence this study wishes to find out the reasons behind cholera persisting in Nchelenge District. Could these outbreaks occur due to inadequate knowledge on cholera prevention, negative attitude or poor practices of the people of Nchelenge.

The possible results of this study on Knowledge, attitude and practice of respondents on cholera will be used to the local community, neighboring places and other relevant authorities in formulating further policies and guidelines on environmental health to prevent outbreaks of cholera and its management in Nchelenge District.

1.6 RESEARCH OBJECTIVES OF THE STUDY

1.6.1 GENERAL OBJECTIVE

To determine knowledge, attitude and practice of Nchelenge community towards cholera transmission and prevention.

1.6.2 SPECIFIC OBJECTIVES

1.6.2.1 To determine Nchelenge Community's knowledge of cholera transmission and prevention.

1.6.2.2 To identify the attitudes of Nchelenge residents towards cholera.

1.6.2.3 To establish the practice of Nchelenge Community regarding prevention of cholera.

1.7 HYPOTHESES

1.7.1 The lower the knowledge on transmission and prevention of cholera the poorer the practice.

1.7.2 Negative attitude towards cholera leads to poor practice towards prevention of cholera.

1.8 OPERATIONAL DEFINITION OF TERMS

1.8.1 Conceptual Definition of Terms

1.8.1.1Cholera

Cholera is an infection of the small intestine caused by the bacterium *vibrio cholera*. Cholera is spread by ingesting water or food contaminated by the excrement of infected people (Berkow, 1999).

1.8.1.2 Knowledge

Knowledge is the information, understanding and skills that you gain through education or experience. (Hornby, 2006).

1.8.1.3 Practice

Practice is to do an activity or train regularly so that you can improve your skill. (Hornby, 2006).

1.8.1.4 Attitude

Attitude is feeling people have or develop towards cholera prevention and control. The feeling could be good or bad and negative or positive (Dempsey and Dempsey 2000).

1.8.2 Operational Definitions

1.8.2.1Knowledge

Is knowledge of definition, causes and signs and symptoms of cholera infection, prevention of cholera and treatment of cholera.

1.8.2.2Practice

Practice includes identification of good sources of water for drinking, ensure that water for drinking is safe, able to wash hands after using the toilet, dispose refuse and get rid of refuse correctly, be able to wash and peal off fruits before eating, keep left over foods safely and warm before eating and be able to rush a suspected case of cholera to the health institution.

1.8.2.3Attitude

The feelings people have towards prevention and control of cholera and their response to case of cholera, the feelings people have about sharing food at gatherings, their thoughts on washing fruits and the reasons behind the increase in street vending.

1.9 VARIABLES AND CUT OFF POINTS

According to Polit and Hungler (2001), a variable is a word or concept that assumes different quantities or types. In other words, it is a characteristic which varies or changes in different people depending on the prevailing situation. The study has one dependent and two independent variables. Dependent variable is a characteristic that is observed and measured to determine how it responds to variations in an independent variable (Burns and Groove 2005). The dependent variable in this study is practice. An independent variable is a characteristic or factor that is selected or manipulated in order to determine its influence on another variable. The independent variables in this study are Knowledge and Attitude.

Table1.3

Variables and Cut-Off Points

VARIABLES	CUT OFF POINTS	INDICATORS	Question Numbers
Knowledge	**Good**	Correct responses to knowledge questions with score 11-18	11-18
	Average/moderate	Correct responses to knowledge questions with score 7-11	11-18
	Poor	Correct responses to knowledge questions with score 0- 6	11-18
Attitude	**Positive**	Correct responses to attitude questions with score 7 - 12	19-23
	Negative	Correct responses to attitude questions with score 0 - 6	19-23
Practice	**Good**	Correct responses to practice questions with score 17 - 34	24-34
	Poor	Correct responses to practice questions with score 0 - 16	24-34

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

Literature review is a stage in the research process, which helps the researcher to construct a comprehensive picture of the state of the knowledge, practice and attitude about the topic. The main purpose of literature review is to enable the researcher to understand the topic in a way that permits a clear formulation of the problem under study. It is based on primary data from individuals, organizations, and both published and unpublished information. Literature review provides the researcher with the opportunity to determine how pertinent material is available concerning the potential study and helps to put the problem in the context of what has already been done (Dempsey and Dempsey, 2000).

2.2. Knowledge

Knowledge is facts, information, skills and understanding that people have gained through learning and experience in the prevention and control of cholera. Despite numerous information written on cholera Globally, Regionally and Nationally, cholera still persist in many parts of the world. Currently, it has affected more than 100 countries world wide. It is highly fatal and usually occurs in epidemic proportions in many countries. It is a serious acute intestinal infection that is caused by a germ called V*ibrio cholerae* (WHO, 1998). An individual can die within a few hours after contracting the V*ibrio cholerae* if medical attention is not received on time.

Southern African countries have been trying to impart knowledge in people all these years but cholera has remained a major threat to Africa.

Literature has revealed that Cholera is one of the most public health problems of the warm climates and has widely spread since the 1800th. In 1832, Chadwick started sanitary condition during cholera out break. The report he prepared after his study showed the need for urgent improvement of Public Health in England. He recognized that filth was man's greatest enemy and with this, they began an "ANTI FILTH CAMPAIGHN/CRUSADE" to tackle the problem of filth. At this time Public Health Act of 1948 was set up and they accepted the principle that the state was responsible for the health of the people. When this principle was accepted people demanded clean water from the government. In another development Sir John Simon (1860-1906) was responsible for the sanitary disposal in England because of poor practices of people. He built a system of Public Health which was admired by the rest of the world in an effort to prevent cholera (community health nursing lecture notes, 2009).

Today, cholera epidemic's main focus is found in Zimbabwe. Despite the fact that the number of cases has decreased, the mortality rate continues to be elevated in almost all of the provinces, and a real risk exists that the outbreak will be reactivated in some areas. Since the beginning of the outbreak in August of 2008 until March 17th of 2009, 91,164 cases were reported in this country alone, 4,037 of them were mortality cases. The following tables show an overview of cholera outbreaks and reported cases per country in which studies on knowledge about cholera were conducted (WHO, 2009).

Table 2.1

Cholera out break summary table in Southern Africa

COUNTRY	CASES	DEATHS	CASE FATALITY RATE %
Zimbabwe	83,265	3,877	4.7%
South Africa	11,461	58	0.5%
Mozambique	6,124	66	1.1%
Zambia	3,747	50	1.3%
Malawi	1,851	52	2.8%
Angola	692	9	1.3%
Namibia	103	6	5.8%
Botswana	8	1	12.5%

Swaziland	2,532	0	0%
TOTAL	107,251	4,119	3.8%

SOURCE: (WHO, Cholera Regional update, 2009)

Table 2.2

Time line for cholera outbreak in Southern Africa

COUNTRY	REPORTED FROM	LAST REPORT DATE
Angola	01 October, 2008	01 February, 2009
Botswana	01 November, 2008	05 February, 2009
Malawi	15 November, 2008	05 February,2009
Mozambique	01 October, 2008	29 February, 2009
Namibia	22 October, 2008	05 February,2009
South Africa	15 November, 2008	23 February, 2009
Zambia	19 September, 2008	04 February, 2009
Zimbabwe	15 August, 2008	24 February,2009
Swaziland	20 November,2008	04 February, 2009

SOURCE: (WHO, Cholera Regional update, 2009).

A study was conducted on cholera on the above countries in the two tables by WHO, 2009 to identify risk factors and potential control measure. The study reported the majority of patients were blacks living in rural areas and shanty compounds which are densely populated. Many people had knowledge on causes of cholera, the season occurrence of cholera and its prevention. Most out breaks occurred in the summer rainfall season except Zimbabwe who had a persistent outbreak almost all the seasons.

Zambia experienced two major out breaks of cholera in the recent past years. The first epidemic was from 1980 to 1981 and covered two provinces, Northern and Luapula Provinces. The second out break was from 1990 to 1991. Both epidemics claimed loss of lives. Unfortunately, very few people realized that cholera incidence is accelerated by poor sanitation; unhygienic practices methods of living and drinking contaminated water or eating contaminated food (Chitanda, 1996). In all the studies carried out it was discovered that people had little knowledge with regards to cholera or eating contaminated food (Chitanda, 1996). In all the studies carried out it was discovered that people had little knowledge with regards to cholera.

2.3 Attitude

Attitude is feeling people have or develop towards cholera prevention and control. The feeling could be good or bad and negative or positive (Dempsey and Dempsey 2000).

A study on attitude towards cholera was conducted on 27 carriers and 18 cases in 1980 during the epidemic in Europe. The study results linked the cases to dinner parties and wedding ceremonies which took place around that time of the epidemic. The infected individuals were found to have either attended the wedding function or had eaten food from a box of food distributed to family members, friends and neighbors and these were as a result of not following a warning not to gather during cholera epidemics which is a negative attitude towards cholera prevention (Tropical Disease Bulletin, Journal Volume, 78, No/8 1981).

In 1988, 20,872 cases were reported from eleven countries. China reported a large out break during the 1989 epidemic that affected Xinjiang Religion. A total of 12,785 were reported in Asia from 12 countries, the source of cholera in both years was as a result of infected fecal matter contaminated water supply. After the attack of cholera people developed positive and good attitudes towards cholera and they managed to control cholera (Adapted from weekly epidemiological record 1990; Enteric disease, CDC).

Goodgame and Greenough (1975) reported that West African countries were free from cholera during the years 1894 to 1970. A major epidemic started in 1970 in Guinea Bissau and there after spread to other West African countries causing an estimated 150,000 and more cases and 20,000 and more deaths during the initial attack of cholera, this was as a result of negative attitude for not learning from neighboring countries' cholera attacks. During this epidemic of 1970, cholera transmission from one person to the other person during gathering such as at funerals, festivals and assemblies was identified as a result of not adhering to the warning to avoid gatherings.

Kasoka, (2003) in his academic research wrote the following literature; in 1994 cholera epidemic in Guinea Bissau resulted in 15,878 reported cases and 306 deaths. Following this epidemic the Ministry of Health mandated that the bodies of persons dying of cholera be disinfected before burial because many people did not care when burying a cholera case and Cholera out breaks occurred in several villages following funerals of cholera patients in the region of Biombo due to negative attitudes towards cholera prevention from cholera corpses.

To determine the influence of attitude on disinfection and funeral activities on cholera transmission, MOH in Guinea Bissau analyzed surveillance data and conducted a case control study following a funeral. The study registered 1,188 cholera cases in Biombo. About 65% of the cholera cases were females. The results of this study showed that 86% of persons with cholera who were 15 years or older reported having contact in the one week before the onset of diarrhea with a corpse. About 62% of the cholera cases died.

The study also showed that cholera attack rate was 4.8% in five villages where bodies were not disinfected before burial while the attack rate in 26 villages where bodies were disinfected before burial was 3.0% it was evident that many people had negative attitude towards cholera and did not care about the warnings of cholera transmission (Swerdlow. D.L.1994). Previous investigations on cholera in West Africa demonstrated the importance of contaminated food and water in the transmission of cholera (Isaacson, M. 1994).

Mpuzi, et al, (2005), in their research in Illala furthermore, revealed the proportion of respondents with positive attitudes towards cholera prevention in the study was 97.4%.The hygienic practices concerning cholera prevention were lagging behind knowledge and attitude. A range of specific interventions are likely to be necessary for the control of cholera in this population. Misconception about transmissibility of cholera that cholera ca not be transmitted through cow's dung, young children stool and chicken faeces need to be addressed.

Kasoka, in 2003 conducted a research on Knowledge, Attitude and Practice among the residents of Makululu compound in Kabwe town. His study revealed that the majority residents in high density area of the compound shared food stuff and attended social, religious and political gathering during cholera out break. He described the situation as feelings of fearless of cholera the residents of Makululu had.

In another development a Mr. Banda Bernard was courted in the Lusaka Times of 2007 having said that, "the attitude of most fishermen in Nchelenge District was bad; they have a habit of setting up temporal shelters on the show of Lake Mweru which have no toilet facilities, forcing them to answer the call of nature on the Lake".

He further said that the attitude of some authority to lift the fish ban during cholera out breaks contributed to cholera out breaks within the District and other Districts because of fish business in the District.

Lusaka city council in their research of three compounds in Lusaka in1991 to 1992 as above and Kaluba and Mwale in their research on cholera of 1992 in some sampled schools in Lusaka. Both research studies showed negative attitude of ignoring cholera preventive measures such as warning that cholera is looming in the other place of the town and residents should restrict movement to within their compound.

2.4 Practice

Practice is the exercise carried out by people regularly in order to prevent, avoid or minimize the occurrence and spread of cholera such as washing hands before eating, avoiding gatherings during cholera outbreaks.

Trying to perfect our health habits can reduce or completely stop the reoccurrence of cholera. Cholera is a real historical health problem that requires local and international assistance and co-operation to achieve cholera control measures. In view of this many researchers have conducted studies on practice, of people towards cholera; the following are some information written on cholera outbreaks globally, regionally and nationally.

A study was conducted in Latin America to determine the risk factors that were associated with the transmission of cholera. The reported agent for cholera transmission included the following practices: drinking contaminated water with fecal matter, improper preserved fish practices and under cooking shellfish, rice and raw oyster practices (Blake, P.A 1992). In 1991 a study was conducted on 17 cases associated with cholera epidemic in South America. The study result showed that the associated six cases were travelers to South America who were not screened for cholera; the remaining eleven cases had eaten crabs which were brought by travelers from Ecuador.

The above study is evidence enough to conclude that the practice of not screening travelers at airports and the habit of buying foods from travelers can predispose people to the germ that causes cholera. Cholera can be transmitted through the practice of eating foods contaminated with fecal matter, drinking contaminated food drinks and water when infected individuals unknowingly travel from epidemic areas to non-epidemic areas. In 1990 Romania reported two cases which occurred in Danube Delta area and the primary source of infection was found to have come from Delta River. Those infected were found to have been infected after drinking contaminated water with sewer from Delta River (WHO 1991).

The study results from tables 5 and 6 showed that *Vibrio cholerae* infected faecal, contaminated water, foods such as fruits, fish, improperly brewed traditional drinks like maheu and contaminated utensils also transmitted cholera. Many people in the study had poor practice of not treating drinking water, shared traditional brewed drinks and did not practice good environmental hygiene. The report also showed that many people got infected from shared food especially at various gatherings (WHO, 2009).

Mpuzi, et al, (2005) conducted a study on Knowledge, Attitude and Practice of Illala residents in Tanzania with regards to cholera outbreaks in the same area. Three hundred and ten (310) respondents were included in the study of whom 186(59.9%) were females and 124(40.1%) were males aged between 13-84 years. The proportion of respondents with good knowledge of cholera in the study was 85%.

The study revealed that the main practices, associated with cholera occurrence among respondents with high levels of knowledge in Illala by water source were uses of piped water 84.3%, water from deep wells 88.3% and shallow wells 71.4%. The distribution of respondents by low knowledge and water source were piped water 15.7%, shallow wells 28.6% and deep well11.7%.

The proportions of respondents by low knowledge and water quantity were: adequate water 13.6% and inadequate18.3%. About 14% the respondents with low level of knowledge of cholera drink water from wells without boiling while 31.8% drink unboiled piped water and 21.6% wash their hands in a common container.

In 1990 to 1991 and 1991 to 1992 nationally cholera led to a study which was conducted in Lusaka by, Lusaka City Council to establish the factors leading to the out breaks. This study revealed that about 90% of the cases came from shanty compounds had inadequate water supply and poor sanitation. The study was held in three compounds, these were; George compound, Kanyama and Kabanana compounds.

These problems relating to the practice of using water from shallow wells, poor water supply and poor environmental sanitation in compounds of Lusaka have had a strong bearing on the high numbers of cholera cases that occurred in 1990 through to 1992 cholera out breaks. In 1992 Kaluba and Mwale conducted a study in Lusaka on cholera in schools of affected areas to identify risk factors in schools. The study demonstrated that the practice in schools of washing hands in communal basins was one of the major public health risks in the transmission of cholera.

2.5 CONCLUSION

Cholera outbreaks continue to be a problem of public health, given that they cause great human, social and economic losses. Just in 2001, the World Health Organization (WHO) and the Global Outbreak Alert & Response Network participated in the verification of 41 cholera outbreaks in 28 countries they discovered that low knowledge and poor practices many people towards cholera was behind the occurrence cholera in many areas.

The WHO's data indicates a concerning increase in the number of cholera cases worldwide since the beginning of the 20th century. Although the first pandemic began in

1817 in Asia, it later spread to other parts of the world, such as South America and Africa, "cholera's new homeland", where it was concentrated in 87% of cases in 2006.

Literature on cholera in terms of knowledge, practice and attitude has demonstrated the realness of cholera. It is caused by a germ called *vibrio cholerae* which is transmitted through eating food which is contaminated during or after preparation, and drinking infected fecal contaminated water with *vibrio cholerae*. Furthermore, literature review has indicated that man is the main reservoir of the infection and oral-faecal route plays a major role in the transmission of cholera.

Despite many people having positive attitude towards cholera the disease has continued to affect many people the world over.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology refers to procedures, steps and strategies describing the way information will be gathered and analyzed in a research investigation, (Polit and Beck, 2008). This chapter presents on the research design, study setting, study population, sample selection, sample size, data collection tool, data collection technique, pilot study, validity, reliability, ethical and cultural considerations of the study.

3.2 RESEARCH DESIGN

A research design is defined as the researcher's overall plan or strategy for answering research questions or testing the hypotheses (Polit and Beck, 2008). The author used a descriptive cross sectional study design was used to quantify the distribution of knowledge, attitude and practice of Nchelenge population among those who are aged 18years and above.

Descriptive design involved systematic collection of data to give a clear picture of a particular situation (Burns and Groove 2005). It was descriptive because it just described the phenomena under study and was non-experimental because the researcher just described and analysed researchable objects or situation but did not intervene.

The study also utilized a non-experimental design which is the study that the researcher just describes researchable objects or situation but does not intervene (Burns and Groove 2005). It is a process where there is no manipulation or control of events and the study is carried out in a natural setting and the researcher observes the phenomena as they occur. The study was non experimental because no manipulation or interventions was carried out on both the respondents and the environment.

3.3 RESEARCH SETTING

A research setting is a physical location and conditions in which data collection takes place in the study, (Polit and Beck, 2008). This study was conducted in Kashikishi and Kabuta catchment areas in Nchelenge District of Luapula Province. Kabuta recorded six confirmed cases of cholera by March, 2009 and the highest reported cases among other catchment areas in the District in 2009 (NDHMT, 2009).

Kabuta and Kashikishi are about 250 KM away from Mansa and more than 1200 KM away from Lusaka. The two areas have projected growth rate of 4.6% and located on the land that cover 60% surface area for the District (CSO, 2000). Kabuta and Kashikishi are blessed with abundant natural resources such as the Luapula valley, Lake Mweru, Luapula River and swamps (NDHMT, 2009-2011 Action Plan).

Most of the inhabitants of the these two catchment areas draw water from the unsafe sources for agriculture and household consumption, at the same time many other people use these places for depositing fecal matter and hence rendering the population susceptible to cholera. This research setting was chosen at the researcher's convenience.

The majority of the population of Kabuta and Kashikishi lived in rural areas while the minority lived in the urban areas (NDHMT, 2009-2011 Action Plan). Subsistence farming and fish trading were the main forms of employment. 40% of the people in the urban areas of the two areas were in formal employment 22% self employed and 38% were not employed. The catchment areas are surrounded by a good network of both MTN and ZAIN. This has enabled most residents to have mobile phones for easy communication. They are also accessible by both road and water transport to easy the researcher when conducting the study.

The choice of the study sites was based on the fact that the two areas recorded cases of cholera in 2009, they were within reach and they are the most populated areas in the District.

3.4 STUDY POPULATION

A study population refers to the entire number of units under study or the whole or the inhabitants (Burns and Grove, 2005). The study population for the current study was the residents of Kabuta and Kashikishi who were both males and females aged 18years and above and these were heads of households accessed at selected houses. Study population consists of the target population and the accessible population.

3.4.1 Target population

A target population is the "entire set of individuals or elements who meet the sampling criteria" (Burns and Groove, 2005). The target population in this study were household heads aged 18years and above residents of Kabuta and Kashikishi in Nchelenge District because these areas are almost affected whenever there is cholera outbreak in the district.

3.4.2 Accessible population

Accessible population can be defined as the aggregate of cases that conforms to designated criteria and that are accessible as subjects for a study (Burns and Grove, 2005).The researcher's accessible population in this study comprised of both men and women house hold heads aged 18 years and above who were found present at home at the time of the study.

3.5 SAMPLE SELECTION

Sampling is a process of selecting a portion of the population to represent the entire population (Polit and Beck, 2008). In order to get a sample which was representative of Nchelenge District, this was the process by which a researcher selected a sample that represented the whole population to be part of the study group. This was a crucial part of the research because the selected sample had to be representative of the entire number of units under study.

3.5.1 District

The study was conducted at Nchelenge District. Nchelenge District was conveniently selected due to the researcher's sponsor request, finances and time to conduct the study.

Convenience sampling is a non probability sampling method in which for convenience's sake, the study units that happened to be available at the time of data collection were selected in the sample (Burns and Groove, 2005). Available subjects were simply entered into the study until the desired sample size was reached. The researcher also used part of his finances because the study was not sufficiently funded and the researcher had other academic programs to fulfill during the same time the study was being conducted.

3.5.2 Health Centers

The data were collected from five health centre's that were selected using simple random sampling. Simple Random Sampling with replacement is a form of probability sampling method where after picking a respondent the number or card is placed back in the container so that each respondent is given an equal chance of being picked (Dempsey and Dempsey 2006). A list of all the thirteen (13) rural health centre of the district were written on pieces of papers and put in a box and then the box was shaken vigorously and a piece of paper were drawn from the box. If the number that was picked is picked again you replace it back in the container without writing the number again. The procedure was repeated until two (2) health centres were selected. The health centres that were drawn constituted the sample.

3.5.3. Respondents

Ten respondents were selected from each rural health centre using convenient sampling. Convenience sampling is a non probability sampling method in which for convenience's sake, the study units that happened to be available at the time of data collection were selected in the sample (Burns and Groove, 2005). Available subjects were simply entered into the study until the desired sample size was reached. The reason for using this method was that it was not possible, due to time and finances, to list the whole study population and come up with a sampling frame.

3.5.5 Inclusion Criteria

The inclusion criterion is defined as the criterion that specifies the characteristics of the population (Burns and Grove, 2005). The study included adults who were aged 18 years and above were included in the sample.

3.5.6 Exclusion Criteria

Exclusion criterion is defined as a population that does not possess the required characteristics (Burns and Groove, 2005). Non household heads were excluded.

3.6 SAMPLE SIZE

A sample size is the number of study participants in the study (Polit and Beck, 2008). In this study the researcher used a sample size of 50 respondents selected from two health centre catchment areas. This sample size was considered due to limited transport, financial, material and time resources.

3.7 DATA COLLECTION TOOL

A data collection tool is an instrument that is used to assist the researcher to collect data from the respondents (Burns and Groove 2005). An interview schedule was used to collect data from respondents and a focus group discussion guide was used to collect data from nurses.

3.7.1 Interview Schedule

An interview schedule was an instrument used for data collection where questions were outlined and a respondent answered according to what was asked (Pilot and Beck 2008). The interview schedule had both open ended and closed ended questions. It was divided into three sections, looking at the demographic data, knowledge on causes, signs and symptoms and prevention of cholera, attitude towards cholera and practice of people towards cholera. The demographic data section consisted of ten (10) questions on gender, age, primary language, marital status, religious denomination, residential, level of education numbers of rooms in the house, number of people in he house and occupation. The knowledge section consisted of eight (8) questions on distance of pit latrine from source of water, who dug the pit latrine, those without toilet what do they use, causes of cholera, identification of cholera case, prevention and treatment of cholera.

Attitude section consisted of six (6) questions on respondents feelings about sharing food staff, their thought on washing fruits, reason behind street vending and why and respondents final words. Practice section consisted of ten (10) questions on source of water, ensuring water for drinking is safe, do respondents was hands after using the toilet, where and how do respondents dispose off refuse, what do they do to fruits before eating, how do they keep left over food, how do they treat left over food before eating, when do respondents wash hand and they do to community members who developed cholera.

3.7.2 Focus Group Discussion Guide

A focus group discussion guide is an instrument that assists the researcher to collect data from respondents. This focus group discussion guide consisted of three (3) questions, one from each variable namely knowledge, attitude and practice and a part for the respondents' suggestions. The knowledge question sought to find out how much facts, information, skills and understanding household heads had on the prevention of cholera. The attitude question sought to find out the feelings that household heads had on the transmission of cholera. The practice question sought to find out how household heads prevent cholera.

3.8 DATA COLLECTION TECHNIQUES

Data collection technique is gathering information needed to address a research problem (Polit and Beck, 2008). Two procedures were used, the interview and focus group discussion.

3.8.1 Interview

Permission was obtained from the course supervisor to collect data from the respondents and go ahead was granted. Permission was also obtained from the District Health Management team in Nchelenge to collect data from house hold heads only in the District and the researcher was granted permission.

Upon arrival at the sampled house, the researcher greeted the respondents including family members and friends with respect. The researcher introduced himself to the respondent and explained the purpose and the benefits of the research. The researcher also assured the respondent of confidentiality and explained to the respondent that participation was voluntary and that the respondent was free to stop at any point in time without any interference. After all the explanation and permission to collect data from the respondent was granted, the researcher conducted the interview. After completing the interview, the researcher thanked the respondent for their participation.

3.8.2 Focus Group Discussion

Two focus group discussions were conducted the first session comprised of 10 respondents while the second session comprised of 11 respondents respectively. A focus group discussion is a group discussion of 6-7 persons guided by a facilitator during which members talk freely and spontaneously about a certain topic (Polit and Beck 2008) in this regard was on cholera. The purpose of conducting a focus group discussion was to obtain in-depth information on concepts, perceptions and ideas of the group. It aimed at question and answer interactions. A focus group discussion was an important tool for keeping the discussion centered while encouraging participants to speak spontaneously generating rich, detailed data from respondents through expressions of their own views and experiences.

The respondents were house holds heads from Kashikishi and Kabuta catchment areas of Nchelenge District. The same process of self introduction and introduction of the topic and purposes for the study was explained to the respondents and respondents were asked to introduce themselves and also they were encouraged to participate freely. Focus group discussion took place in both places' outreach activity centres on days when the centres had no activities which were away from noise and other activities. Respondents were household heads who were selected through a simple random probability. These two focus groups provided an opportunity for the researcher to observe interactions and relationships between the heads of house holds. The duration of time spent on each focus group discussion was one hour each. The researcher was the moderator for the discussions. The clinic radio recorder was used during each focus group discussion with permission from the groups; this helped to preserve data that could have been missed during taking of notes. Having a recorder also gave the researcher an opportunity to focus on the respondents rather than concentrating on taking notes only. At the end of the Focus Group Discussion the researcher thanked all the respondents for their participation and time in the study.

3.9 PILOT STUDY

A pilot study is defined as the study carried out at the end of the planning phase of research, in order to explore and test the research elements. It is a small scale dress rehearsal that proceeds as if it were the actual study, except for the fact, that subjects who will participate in the actual study are not used (Basavanthappa, 2006).

A pilot study was conducted to test the validity and reliability of the data collection instruments in order to detect and solve unforeseen circumstances, to detect errors in the interview schedule used in the main study, made correction to be used in the final study and determined clarity of the questions and their appropriateness and determined the duration of each interview.

A pilot study was conducted a week before the actual study in kashikishi compound in Nchelenge. Five houses were selected for the study conveniently because of limited time to conduct a simple random sampling. In this study ten percent (10%) of the whole sample size which was five (5) respondents was used in the pilot study.

After a pilot study was done some questions which were ambiguous and with omissions of words were removed and others were rephrased since they seemed to be misunderstood by respondents. The questionnaire was later fine tuned and checked again for clarity.

3.10 VALIDITY

Validity is the degree to which an instrument measures what it is supposed to measure (Polit and Beck, 2008). There are two types of validity. These are internal and external validity,(French,1998).

3.10.1 Internal Validity

Internal validity is concerned with the extent to which conclusions can be drawn about the causal effects of one variable on the other (Burns and Groove, 2005). In other words internal validity is high if we can be sure that our interventions rather than extraneous factors brought about the effects. It refers to the researcher's interpretation of the findings from the data collected from the study respondents. It refers to the extent to which inferences can be drawn from the study finding of the study.

Internal validity was ensured by checking to see how the questions asked brought out the responses on the variables to be measured so that conclusions could be drawn in the context of the population being sampled.

3.10.2 Content Validity

Content validity is examining the extent to which the method of measurement includes all the major elements relevant to the construct being measured. It involves a systematic examination of test content to determine whether it adequately covers a representative sample from the domain of the variable being measured (Burns and Groove, 2005).

The researcher ensured Content validity by asking questions which covered all the variables in the structured interview schedule. The questions were constructed logically logically and sequentially for clarity. Pilot study was conducted to identify any deficiencies which were clarified. The researcher further ensured content validity by employing strategies that dealt with threats to validity. These strategies are; appropriate selection of the study design, random selection of the study sample was done to assure no bias in the representation of target population, careful designing of the structured interview schedule used to collect data from the study respondents a pre-testing (pilot study) was done with the structured interview schedule.

3.10.3 External Validity

External validity is concerned with the extent to which the research findings can be generalized beyond the tested sample of the study population. To ensure external validity, the sample size comprised of people from different social, economic, political and religious backgrounds. The supervisor evaluated the study instrument and the questions. All the respondents were asked the same questions in the same order.

3.11 RELIABILITY

Reliability is the degree of consistency or accuracy with which an instrument measures the attribute it is designed to measure (Polit and Beck, 2008). The instrument used should be able to bring out the accurate information such that if the same instrument is used after a period of time by others, it should yield the same findings or responses. The research tools were tested before the main study was conducted using a pilot study in an environment with similar characteristics as the environment in which the main study was conducted. Experts went through the questionnaire before they were administered to the study respondents.

3.12 ETHICAL CONSIDERATION

Polit and Beck, (2008), defines Ethics as systems of moral values that is concerned with the degree to which research procedures adhere to legal, professional and social obligations to the study participants.

The researcher got permission from relevant authorities such as the research supervisor, District Director of Health for Nchelenge District and the Provincial Health Director for Luapula Province. No respondents were forced to take part in the study. Written and verbal consent were obtained from every interviewee. The purpose and nature of the study was explained to the respondents for them to make an informed decision. Permission was sort from the local authority in the study area. The respondents were assured of confidentiality through out the study and no names of respondents were appearing on the questionnaire except for numbers. Finally, the completed questionnaires were kept under strict security conditions to avoid people not authorized to have access to the information collected.

CHAPTER 4

4.0 DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 INTRODUCTION

The purpose of this chapter is to present information on how the research data were analyzed and what information was obtained. Data were collected from respondents using an interview schedule and focus group discussions. Fifty (50) respondents participated in the study using an interview schedule and also 14 participants were involved in two (2) focus group discussions. This study was conducted at Chipata General Hospital.

4.2 DATA ANALYSIS

Data analysis is the systematic organization and synthesis of research data, and the testing of research hypothesis using those data (Polit and Beck 2008). Both quantitative and qualitative data were collected which.

4.2.1 Quantitative analysis

After data collection, data were checked for completeness and consistencies. The data were entered on a data master sheet and analyzed manually. The data master sheet was partitioned into four (4) sections categories namely demographic data, knowledge, attitude and practice on cholera.

4.2.2 Qualitative analysis

There was sorting, verification of responses, coding and entering of data on the data master sheet for the quantitative data. The qualitative data, which were derived from open-ended questions, were analyzed using content analysis (Polit and Beck 2008). Each response was transcribed, read and reread to get the concepts in the responses. The concepts were derived from the characteristics of the responses, and then developed into themes that were used to categorize the content into meaningful groupings. A scientific calculator was used for data analysis

4.3 PRESENTATION OF FINDINGS

The findings of the study were presented in frequency tables, percentages. Frequency tables summarized the results of the study to enable readers understand the findings of the research study. Cross tabulation of variables helped to show clearly the relationship between the variables. These enabled the researcher to draw meaningful inferences. The findings from this study were presented according to the sequence of questions and sections in the questionnaire.

4.3.1 SECTION A DEMOGRAPHIC DATA

Demographic data included the bio data, social and economic data of respondents. Demographic section contained the following ten (10) contents, gender, age, primary language, marital status, denomination, level of education, number of rooms in the house, number of occupants in the house and the current occupation for the respondents.

TABLES 4.1

DEMOGRAPHIC DATA

VARIABLES	FREQUENCY	PERCENTAGE (%)
Gender: males	33	66
Females	17	34
Total	50	100
Age on last birth day in years 18-24	7	14
25-44	27	54
Above 45	16	32
Total	50	100

Primary language Ushi	**22**	**44**
Lunda	**11**	**22**
Ngumbo	**5**	**10**
Others	**12**	**24**
Total	**50**	**100**
Marital status Single	**11**	**22**
Married	**35**	**70**
Widowed	**3**	**6**
Separated	**1**	**2**
Divorced	**0**	**0**
Cohabiting	**0**	**0**
Total	**50**	**100**

Religion/Denomination Roman catholic	**16**	**32**
Jehovah's witnesses	**6**	**12**
UCZ	**8**	**16**
SDA	**8**	**16**
Others	**12**	**24**
Total	**50**	**100**

Residential High density	**34**	**68**
Medium density	**12**	**24**
Low density	**4**	**8**
Total	**50**	**100**
Level of education Primary	**15**	**30**
Secondary	**14**	**28**
College	**18**	**36**
Never attended school	**3**	**6**
Total	**50**	**100**
Number of rooms in the house One	**0**	**0**
Two	**5**	**10**
Three	**14**	**28**
Four and above	**31**	**62**
Total	**50**	**100**
Number of people in the house 2	**7**	**14**
3	**5**	**10**
4	**8**	**16**
5	**13**	**26**

6	**11**	**22**
7 and more	**6**	**12**
Total	**50**	**100**
Occupation Un employed	**9**	**18**
Self employed	**11**	**22**
Formal employment	**20**	**40**
House wife	**10**	**20**
Total	**50**	**100**

Summary of the tables above

66% of the respondents were males and 44% were females this indicated the male dominance over females where headship of house hold was concerned in Nchelenge District and the majority of household heads were 25 years and above. This is confirmed and in support of CSO for 2007. Many of the respondents were married this could be that many people upheld the belief that many African societies believed in that of marriage being a social and cultural bond and source of security and respect in the society (CSO, 2007). All the respondents were religious believers, many respondents lived in high density, the majority had formal education and the majority was in formal employment.

4.3.2 SECTION B KNOWLEDGE OF RESPONDENTS ON CHOLERA DISEASE (n=50)

Knowledge is a state of knowing about a particular fact or situation. This section presented questions on knowledge about the signs and symptoms, causes of cholera and prevention. The data is presented in the following frequency tables. There are seven frequency tables in this section.

TABLE 4.2

DISTRIBUTION OF RESPONDENTS BY KNOWING THE DISTANCE OF THEIRTOILET FROM THE SOURCE OF WATER (n=50)

VARIABLE	FREQUENCY	PERCENTAGE (%)
KNOWING DISTANCE FROM SOURCE OF WATER		
Yes	35	70
No	15	30
TOTAL	**50**	**100**

70% of the respondents in Table 18 knew the distance of the toilet they are using from the source of water, while 30% of the respondents did not know the distance.

TABLE 4.3

RESPONDENTS KNOWLEDGE ON DISTANCE FROM THE SOURCE OF WATER (N=50)

DISTANCE FROM WATER SOURCE	FREQUENCY	PERCENTAGE (%)
VARIABLE		
Far	14	28
Near	20	40
Don't know	16	32
TOTAL	**50**	**100**

40% of the respondents acknowledged that the distance of their toilet from the source of water was near and 28% acknowledged that the distance was far while 32% did not know the distance.

TABLE 4.4

RESPONDENTS KNOWLEDGE ON WHO OWNS THE TOILET THEY ARE USING (n=50)

TOILET OWNERSHIP	FREQUENCY	PERCENTAGE (%)
Me only	16	32
Me and my neighbors	21	42
Neighbors only	13	26
Communal owned	0	0
None	0	0
TOTAL	**50**	**100**

42% of the respondents used and owned the toilet with neighbors while 32% owned toilet and 26% used neighbors' toilet.

TABLE 4.5

RESPONDENTS' KNOWLEDGE ON THE CAUSE OF CHOLERA (n=50)

CAUSE OF CHOLERA	FREQUENCY	PERCENTAGE (%)
VARIABLE		
Germs	21	42
Witchcraft	17	34
I don't know	12	24
TOTAL	**50**	**100**

The majority of the respondents 42% indicated knowing what caused cholera while 34% did not know and indicated that cholera was caused by witchcraft. 24% of the respondents did not know the cause of cholera.

TABLE 4.6

RESPONDENTS' KNOWLEDGE ON THE SYMPTOMS OF CHOLERA (n=50)

SYMPTOMS	FREQUENCY	PERCENTAGE (%)
VARIABLE		
Loss of weight	23	46
Severe coughing	0	0
Severe diarrhea and vomiting	27	54
TOTAL	**50**	**100**

54% of the respondents had correct knowledge of how a cholera patient presents and 46% did not know how cholera presents.

TABLE 4.7

RESPONDENTS' KNOWLEDGE ON PREVENTION OF CHOLERA (n=50)

PREVENTION OF CHOLERA	FREQUENCY	PERCENTAGE (%)
VARIABLE		
I don't know	25	50
Supply of pure water and good sanitation	20	40
Take traditional medicine	5	10
TOTAL	**50**	**100**

(50%) did not know how cholera is prevented, 40% of the respondents stated that cholera is prevented through supply of pure water and good sanitation and 10% stated that cholera was prevented through traditional medicine.

TABLE 4.8

RESPONDENTS' KNOWLEDGE ON TREATMENT OF CHOLERA (n=50)

VARIABLE	FREQUENCY	PERCENTAGE (n=50)
TREATMENT OF CHOLERA		
Give traditional medicine and nurse home	10	20
Give ORS and take to health facility	31	62
Not sure	9	18
TOTAL	**50**	**100**

62% respondents portrayed good knowledge of how a case of cholera should be treated 20% gave traditional medicine and nursed at home and 18% did not know how cholera was treated.

CROSS TABULATION ON KNOWLEDGE:

TABLE 4.9

KNOWLEDGE ON THE PREVENTION OF CHOLERA IN RELATION TO GENDER (n=50)

KNOWLEDGE ON PREVENTION	GENDER		TOTAL
	Males	Females	
High	18(54.5%)	2(17.8)	20(40%)
Moderate	5(15.2%)	-	5(10%)
Low	10(30.3%)	15(82.2%)	25(50%)
TOTAL	33(66%)	17(34%)	50(100%)

82.2% of the study respondents in Table 33 female gender had lowest level of knowledge while 17.8% in the same gender had high knowledge and 15.2% male respondents had moderate knowledge on prevention of cholera while non from the female gender had moderate knowledge 54.5% males had high knowledge and 17.8% females had high knowledge

TABLE 4.10

KNOWLEDGE ON WHAT CAUSES CHOLERA IN RELATION TO LEVEL OF EDUCATION (n= 50)

KNOWLEDGE ON CHOLERA CAUSE	LEVEL OF EDUCATION				TOTAL
	Primary	Secondary	College	Never attended school	
High	2(13.3%)	3(21.5%)	10(55.5%)	-	15(30%)
Moderate	-	1(7.1%)	5(28%)	-	6(12%)
Low	13(86.7%)	10(71.4%)	3(16.5%)	3(100%)	29(58%)
TOTAL	**15(30%)**	**14(28%)**	**18(36%)**	**3(6%)**	**50(100%)**

86.7% of the respondents in the primary level of education had low knowledge while 13.3% in the same educational level had high knowledge and all those who never attended school had low knowledge on what causes cholera. This is in comparison with college level with 55.5% high knowledge and 16.5% low knowledge. Secondary level of education had 71.4% who had low knowledge compared to 21.5% who had high knowledge.

TABLE 4.11

LEVEL OF KNOWLEDGE ON TREATMENT OF CHOLERA IN RELATION TO GENDER (n= 50)

LEVEL OF KNOWLEDGE	GENDER		TOTAL
	Males	Females	
High	24(72.7%)	7(47.2%)	31(62%)
Moderate	-	-	-
Low	9(27.3%)	10(58.8%)	19(38%)
TOTAL	**33(66%)**	**17(34%)**	**50(100%)**

58.8% females had low knowledge on treatment of cholera while 47.2% respondents in the same gender had high knowledge on the treatment of cholera compared to 27.3% males who had low knowledge and 72.7% who had high knowledge on the treatment of cholera.

4.3.3 SECTION C RESPONDENTS ATTITUDE TOWARDS THE SPREAD OF CHOLERA

Hornby (2006) defined attitude as the way one thinks and feels about something or the way someone behaves towards somebody.

Section C of the questionnaire (appendix I) contained questions which facilitated the identification of the respondents' attitude towards the prevention of cholera this section had six both open ended and closed questions.

TABLE 4.12

RESPONDENTS' FEELINGS ABOUT SHARING FOOD STAFF (n=50)

VARIABLE	FREQUENCY	PERCENTAGE (%)
FEELING		
Strongly bad	19	38
Not vey bad	16	32
Bad	15	30
Strongly okay	0	0
Okay	0	0
TOTAL	**50**	**100**

All the respondents in table 25 felt it was not good to share food at gatherings during cholera out break.

TABLE 4.13

RESPONDENTS' THOUGHTS ABOUT WASHING FRUITS AND OTHER FOODS BEFORE EATING

VARIABLE	FREQUENCY	PERCENTAGE
THOUGHTS ABOUT WASHING FOOD		
Strongly agree	37	74
Agree	13	26
Not sure	0	0
Don't agree	0	0
Strongly don't agree	0	0
TOTAL	**50**	**100**

All the study respondents as in Table 28 were agreeable and thought washing fruits and other raw food stuffs before eating was important.

TABLE 4.14

RESPONDENTS' REASON BEHIND THE RISE IN STREET VENDING (n=50)

REASON FOR RISE IN STREET VENDING	FREQUENCY	PERCENTAGE (%)
Increase in poverty	32	64
Encouragement from political leaders	0	0
Increase in population	18	36
I don't know	0	0
TOTAL	**50**	**100**

64% of the respondents in table 27 above stated that the rise in street vending in the district was due to increased levels in poverty while 36% respondents stated that the rise in street vending was due to increased population.

TABLE 4.15

RESPONDENTS' INTEREST TOWARDS CHOLERA PREVENTION (n=50)

VARIABLE	FREQUENCY	PERCENTAGE (%)
INTEREST		
Yes	24	48
No	26	52
TOTAL	**50**	**100**

52% showed no interest in preventing cholera compared to 48% of the respondents who showed interest to prevent cholera in their area.

CROSS TABULATION ON ATTITUDE:

TABLE4.16

ATTITUDE ON SHARING FOOD IN RELATION TO RELIGION (n= 50)

ATTITUDE	RELIGION					TOTAL
	Roman catholic	Jehovah's witnesses	UCZ	SDA	Others	
Positive	-	-	-	-	-	-
Negative	16(100%)	6(100%)	8(100%)	8(100%)	12(100%)	50(100%)
TOTAL	**16(32%)**	**6(12%)**	**8(16%)**	**8(16%)**	**12(24%)**	**50(100%)**

All the respondents from the denominations interviewed had negative attitude with regards to sharing foods at gatherings during the out break of cholera. No respondent scored positive attitude to agree to support sharing of food stuff during cholera out break at all forms of gatherings.

TABLE 4.17

ATTITUDE ON WASHING FRUITS IN RELATION TO OCCUPATION (n = 50).

ATTITUDE	OCCUPATION				TOTAL
	Un employed	Self employed	Formal employment	House wife	
Positive	0	4(36.4%)	16(80%)	6(60%)	26(52%)
Negative	9(100%)	7(63.6%)	4(20%)	4(40%)	24(48%)
TOTAL	**9(18%)**	**11(22%)**	**20(40%)**	**10(20%)**	**50(100%)**

All unemployed study respondents displayed negative attitude towards washing of fruits before they ate while no one of the respondents in the same occupation interviewed displayed positive attitude. The table also shows 63.6% of self employed study respondents showed negative attitude compared to 36% who showed positive attitude, 80% of employed study respondent showed positive attitude while 20% of the respondents in the same group showed negative attitude towards washing of fruits before they ate.

TABLE4.18

ATTITUDE ON STREAT VENDING IN RELATION TO MARRITAL STUTUS (n = 50)

ATTITUDE	MARRITAL STUTUS				TOTAL
	Single	Married	Widowed	Separated	
Positive	3(25%)	13(38.2%)	2(66.7%)	1(100%)	19(38%)
Negative	9(75%)	21(61.8%)	1(43.3%)	0	31(62%)
TOTAL	**12(24%)**	**34(68%)**	**3(6%)**	**1(2%)**	**50(100%)**

61.8% married study respondents in Table 38 had negative attitude on street vending in the district while 38.2% study respondents in the same marital status had positive attitude towards street vending. This was compared to 66.7% widowed study respondents who had positive attitude and 43.3% widowed study respondent who had negative attitude on street vending.

TABLE 4.19

ATTITUDE ON PREVENTION OF CHOLERA IN RELATION TO LANGUAGE (n = 50)

ATTITUDE	LANGUAGE				TOTAL
	Ushi	Lunda	Ngumbo	Others	
Positive	10(45.5%)	9(81.8%)	5(100%)	0	**24(48%)**
Negative	12(54.5%)	2(18.2%)	-	12(100%)	**26(52%)**
TOTAL	**22(44%)**	**11(22%)**	**5(10%)**	**12(24%)**	**50(100%)**

55% of the study respondents from the Ushi clan showed negative attitude towards cholera prevention. This was compared to 46% of the study respondents from the same tribe who had showed positive attitude. 82% of Lunda respondents also had positive attitude towards cholera prevention while 18.2% had negative attitude. The respondents of the Ngumbo clan all had positive attitude compared with all respondents from other tribes who had negative attitude towards cholera prevention.

4.3.4 SECTION D PRACTICE OF RESPONDENTS TOWARDS CHOLERA PREVENTION

Practice included where respondents sourced water, how water for drinking was ensured safe, it also included whether respondents washed their hands after defecating, how respondents disposed off refuse, and how respondents treated fruits before eating as well as how the respondents behaved towards a community member who developed cholera.

TABLE 4.20

RESPONDENTS' SOURCE OF WATER (n=50)

SOURCE OF WATER	FREQUENCY	PERCENTAGE (%)
Shallow wells	16	32
Lake	12	24
Communal tap	10	20
Protected well/ borehole	12	24
TOTAL	**50**	**100**

56% of the respondents drew water from unsafe source of drinking water shallow wells and the lake while 44% drew water from safe sources.

TABLE 4.21

ENSURING THAT WATER FOR DRINKING IS SAFE (n=50)

SAFE WATER	FREQUENCY	PERCENTAGE (%)
By boiling	5	10
By letting the water settle	0	0
By chlorinating	15	30
By filtering	0	0
Nothing	30	60
TOTAL	**50**	**100**

60% of the respondents drunk water without ensuring that the water they drunk was safe while 40% of the respondents drunk water after they ensured that the water was safe to drink.

TABLE 4.22

HAND WASHING AFTER USING THE TOILET (n=50)

HAND WASHING	FREQUENCY	PERCENTAGE (%)
Yes	3	6
No	26	52
Sometimes	21	42
I am not sure	0	0
TOTAL	**50**	**100**

The majority 52% of the respondents did not wash their hands after using the toilet and 42% of the respondents washed their hands sometime and sometimes not.

TABLE 4.23

DISPOSAL OF REFUSE (n=50)

DISPOSAL	FREQUENCY	PERCENTAGE (%)
Dust bin/bags	3	6
Dug out rubbish pit	13	26
Open space	34	68
TOTAL	**50**	**100**

The majority 68% of the respondents disposed off refuse on open spaces while 32% of the respondents disposed off their refuse correctly in dust bins, bags and rubbish pits.

TABLE 4.24

GETTING RID OF THE DISPOSED OFF REFUSE FROM THE HOUSE COMPLETELY (n=50)

GETTING RID	FREQUENCY	PERCENTAGE (%)
By burning	15	30
By burying	35	70
Through the local authority	0	0
TOTAL	**50**	**100**

70% disposed off refuse completely by burying and 30% of the respondents disposed off refuse completely by burning.

TABLE 4.25

ACTION TAKEN TO FRUITS BEFORE EATING (n=50)

ACTION	**FREQUENCY**	**PERCENRAGE (%)**
Wash before eating	8	16
Peal before eating	16	32
Sometimes wash and sometimes not	26	52
I don't do anything	0	0
TOTAL	**50**	**100**

52% of the respondents' action towards fruits before eating was poor, while 48% of the respondents' action was good.

TABLE 4.26

SECURITY OF LEFT OVER FOOD (n=50)

SECURITY	**FREQUENCY**	**PERCENTAGE (%)**
Cover the food	34	68
Refrigerate	16	32
Left uncovered	0	0
TOTAL	**50**	**100**

68% of the respondents interviewed covered their left over food and 32% of he respondents refrigerated their left over food.

TABLE 4.27

PREPATION OF LEFT OVER FOOD BEFORE EATING (n=50)

PREPARATION	FREQUENCY	PERCENTAGE (%)
Heat before eating	19	38
Eaten cold	28	56
Throw away	3	6
TOTAL	**50**	**100**

The56% of the respondents were not able to make the left over food safe before eating while 38% heated the food before eating and 6% threw away left over food.

TABLE 4.28

TIME TO WASH HANDS (n=50)

TIME WHEN RESPONDENDS WASH THEIR HANDS	FREQUENCY	PERCENTAGE (%)
Before eating	50	100
After serving food	0	0
Before cooking	0	0
Not sure	0	0
TOTAL	**50**	**100**

All the respondents indicated that they washed their hands before eating none of them ate food without washing their hands.

TABLE 4.29

RESPONDENTS' RESPONCE WHEN A COMMUNITY MEMBER DEVELOPS CHOLERA (n=50)

RESPONCE	FREQUENCY	PERCENTAGE (%)
Give traditional herbs and observe home	0	0
Give ORS	0	0
Rush individual to health facility	50	100
Nothing	0	0
TOTAL	**50**	**100**

All the respondents rushed an individual member of the community to the health facility immediately upon suspected to have developed cholera.

CROSS TABULATION OF DATA ON PRACTICE

TABLE 4.30

HAND WASHING IN RELATION TO AGE (n=50)

PRACTICE HAND WASHING	AGE			TOTAL
	18-24 years	25-44 years	45 years and above	
Good	1 (14.3 %)	2(7.4%)	0	**3(6%)**
Bad	6(85.7%)	25(92.6%)	16 (100%)	**47(94%)**
TOTAL	**7(14%)**	**27(26 %)**	**16(60%)**	**50(100%)**

93% of the respondents in the age range 25- 44 years had bad practice towards hand washing after using the toilet while 7.4% within the same age range had good practices of washing hands after using the toilet. This was compared with all respondents aged above 44 years who all had bad hygiene practices and 86% of respondents aged 18-24 years who also had bad hand hygiene practices while 14.3% in the same age group had good hygienic practices.

TABLE 4.31

MAKING WATER FOR DRINKING SAFE IN RELATION TO RESIDENSE (n=50)

PRACTICE SAFE DRINKING WATER	**RESDENSE**			**TOTAL**
	High density	Medium density	Low density	
Good	6(23.2%)	2(28.6%)	12(75%)	20(40%)
Poor	21(77.8%)	5(71.4%)	4(25%)	30(60%)
TOTAL	**27(54%)**	**7(14%)**	**16(32%)**	**50(100%)**

77.8% of the respondents in Table 30 above who lived in high density area displayed poor practice they drunk contaminated water while 23.2% within the same residence had good practice. This was compared with 71% in medium density who had poor practices and 25% in low density drunk water from unsafe sources.

TABLE 4.32

SOURCE OF WATER IN RELATION TO LEVEL OF EDUCATION (n=50)

PRACTICE	**LEVEL OF EDUCATION**				**TOTAL**
SOURCE OF WATER	Primary	Secondary	College	Never attended school	
Good	-	6(66.7%)	15(65.2%)	-	21(42%)
Bad	15(100%)	3(33.3%)	8(34.8%)	3(100%)	29(58%)
Total	**15(30%)**	**9(18%)**	**23(46%)**	**3(6%)**	**50(100%)**

All the respondents who had attended primary level of education displayed bad practices of drawing water from contaminated sources while no one in the same group displayed good practices. The table also showed 33.3% of respondents who had secondary education had bad practice, all respondents who never attended school had bad practices. This is compared with 66.7% of respondents who attained secondary level of education had good practices and 65.2% of college respondents who had good practices

TABLE 4.33

DISPOSAL OF REFUSE IN RELATION TO OCCUPANTS IN THE HOUSE (=50)

PRACTICE	**HOUSE OCCUPANTS**						**TOTAL**
DISPOSAL OF REFUSE	Two	Three	Four	Five	Six	Seven and above	
Good	3(42.9%)	2(40%)	2(25%)	6(46.2%)	3(27.3%)	-	16(32%)
Poor	4(57.1%)	3(60%)	6(75%)	7(53.8%)	8(72.7%)	6(100%)	34(68%)
TOTAL	**7(14%)**	**5(10%)**	**8(16%)**	**13(26%)**	**11(22%)**	**6(12%)**	**50(100%)**

The majority 72.7% from homes occupied by six people had practiced poor disposal of refuse while 27.3% in the same category of homes had good practice and all occupants staying seven and above in one house all had poor disposal of refuse practices. This was compared with (4) 57.1% from homes occupied by two people and 60% from homes occupied by three people who had also poor disposal of refuse.

CHAPTER FIVE

5.0 DISCUSSION OF FINDINGS AND IMPLICATIONS FOR THE HEALTH CARE SYSTEM

5.1 INTRODUCTION

The study was aimed at determining the Knowledge, attitude and practice of residents of Nchelenge District on the recurrences of cholera in the District. The results of the study were based on a sample of 50 households' heads that were found at their homes during the period of data collection.

5.2 CHARACTERISTICS OF THE SAMPLE

The demographic characteristics of the respondents which were relevant to the study included age, gender, education level, marital status, religious denomination, number of rooms and occupants in a house and occupation.

Age ranged from 18 years to above 55 years. Most of the respondents about (54%) were in young adult age group between 25 to 44 years as shown in Table 6 above. This is in agreement the findings of CSO 2007 which showed that the majority of the people Nchelenge were young adults.

Majority of the respondents were males about 66% also in agreement with general population figure by last census. This could also be attributed to the fishing activities common in the District which is a major source of income to the majority and the fishing activity is mostly practiced by males. From the demographical data it was revealed that many people about 32% stay in high density areas it had also revealed that the majority of the respondents 94% had at least attained some formal education. This could mean that the residents value education. This is contrary to the Central Statistical Office (CSO) (2002) which showed that the literacy levels in Zambia were very high.

Majority of the respondents 70% were married (Table 4.1). This signifies that marriage has a big attachment in the Zambian culture and that married people have a lot of responsibilities taking care of the people they look after. This correlates with (CSO 2002) report which shows that almost half of the men and women are married at the age of 18 and above in most rural Zambia and 70% are married after 20 years by which time they would have gone into college to equip themselves with better opportunities to secure jobs.

The demographic data further revealed that majority respondents 80% were not in formal employment. This is in agreement with (CSO 2002) which revealed that 68% more than half of adults in Zambia are not employed.

All the respondents in this study were Christians by faith. This shows Christianity dominance in the district and the Catholics 32% coming out as dominant compared to other denominations which could be due to the fact that during the pre- independence era Catholic missionaries were the first to establish a church and hospital named St Paul's church and hospital (CSO, 2007).

22% females out of 36% by gender either ended at primary or never attended any education in the district. The findings correspond to the WHO report which noted that women and girls are commonly discriminated against access to education, employment, health and inheritance (WHO, 2000).

5.3 DISCUSSION OF VARIABLES

5.3.1 KNOWLEDGE

Knowledge is defined according to Hornby (2006) as a state of knowing about a particular fact or situation. In order to manage cholera and prevent reoccurrence, individuals needed to know what causes cholera, how cholera is transmitted, how it is treated, how someone with cholera presents and certain measures that should be undertaken to minimize the spread of the infection and loss of life. Knowledge about cholera was elicited from the respondents in Nchelenge district through questions in section B of the questionnaire (Appendix 1).

The results of this study showed that 40% of the study respondents had good knowledge and 60% had poor knowledge of the distance between their toilet and the source of water as shown in Table 4.2. This situation had a high possibility of contaminating water sources as many people built toilets near water sources without consulting relevant authorities on distance away from water source. Flies from nearby pit latrines contaminated water sources. Since water is essential to all humans, people got infected with cholera through poor knowledge and drunk water that was contaminated. This is in line with a report by WHO, 2009 that showed that the majority of people in developing countries had poor disposal methods of fecal matter hence water which is the basic need for all humans and animals is contaminated.

Further, WHO, 2009 showed that as a result of this essential food (water), many developing countries will continue experiencing chronic water borne diseases and cholera. Therefore, we can conclude that people drunk contaminated water due to poor knowledge and poor knowledge had has an association to acute diarrhea such as cholera which can lead to recurrence of the disease in the district. The finding was in relation to WHO, 2009 which indicated strong evidence among the relationship of contaminated water, knowledge and cholera.

The majority 82% of the respondents with primary education had low level of knowledge while 13.3% in the same level of education had high knowledge of causes of cholera, 71.4%) of the respondents with secondary education had low knowledge while 17.1% with secondary education had medium knowledge on causes of cholera and 21.5% had low knowledge, 16.5% of the respondents with college education had low knowledge, 28% had medium level of knowledge and 55.5% while those who have never attended school all of them had low knowledge on what causes cholera (Table 4.10).

The above tabulation had revealed that there was a relationship between knowledge and cholera, the lower the educational level the poorer knowledge on health issues. The result were in line with a study conducted by WHO in 2009 on knowledge which indicated that many people living in rural areas in many countries of the world had low knowledge with regards to health matters. There is need for health workers to extensively give health education to the communities through various Medias of communication to cater for the low educated class without formal education.

With regard to gender 82.2% female respondents had low level of knowledge on prevention of cholera and 17.8% had high level of knowledge on what caused cholera compared to 54.3% males who had high knowledge and 30.3% male respondents who had low knowledge as shown in Table14 above.

The study further revealed gender inequality in information dissemination, 58.8% female respondents had low knowledge on treatment of cholera and 47.2% had high knowledge compared to 27.3% males who had low knowledge and 72.7% males who had high knowledge on the treatment of cholera.

These findings showed that efforts had been made in the District to disseminate information on cholera. This corresponds with the District information officer for Nchelenge District office that there ware massive health education campaigns from both health workers and the stakeholders on prevention of cholera (unpublished data). On the other hand the study further had revealed that there were more males with high knowledge on cholera than females in the district. This could be attributed to that few females are involved in community primary health in the District a This corresponded with Kasoka's study that there were few females in communities who were involved in health matters and are members of health committees in the communities of many rural areas. The finding also tied with the study done by Isaacson (1994) where he indicated that few women are found during deliveries of cholera health talks from health workers.

The study findings had answered the study specific objective number one that determined the knowledge of Nchelenge residents of cholera transmission and prevention. The majority of the study respondents had low knowledge. Low literacy levels in an area lead to difficulties to implement community disease prevention programs especially where health staff and resources are few. Many illiterate people had bad health seeking behavior and from this the researcher can concluded that health workers had a lot to do in order to educate people on cholera.

5.3.2 ATTITUDE

Hornby, (2006) defined attitude as the way one feels and thinks about something or the way one behaves towards somebody.

Questions that facilitated the identification of the respondents' attitude towards the prevention of reoccurrence of cholera in Nchelenge District were contained in Section C of the questionnaire (appendix 1). Attitude of the respondents depended on knowledge which respondents had on the seriousness of cholera and the impact of cholera in the area. Thus, prevention, care and treatment will depended on attitude as the inner feelings of people and how those feelings affected their outside environment.

The majority of the respondents (70 %) felt that it was not good to share food during gathering when there was cholera out break in the district as indicated in Table 4.12 above. This was contrary with what World Health Organization (2005) study which stated that many people in rural areas were found to be attending funerals, church assemblies and social gathering during cholera outbreaks multinational patients' rights documents have been established".

The study further showed that all the respondents agreed to washing fruits before eating, this was in line with Kasoka (2003) study on attitude towards cholera where he stated that the majority of his study respondents had positive attitude towards food to prevent cholera.

The study revealed that the majority 61.8% of the married respondents had negative feelings towards street vending compared to 38% in the same marital status who had positive attitude as indicated in Table 4.18. On the contrary majority widowed study respondents had positive attitude towards street vending, this showed that they supported street vending as a source of livelihood. The study also revealed that there were high levels of economic constraints in rural widows compared to those living in urban areas. On the other hand in Table 4.14, the majority of the respondents (64%) indicated that vending is mushrooming as a result of poverty and (36%) is as a result of increase in population in the district. We can therefore, conclude that there were low income levels leading to high levels of socioeconomic problems in Nchelenge District.

5.3.3 PRACTICE

Practice is defined as what people do or just having ideas or theories (Hornby, 2006). Questions to determine the practice of Nchelenge residents towards cholera were included in section D of the questionnaire, the Appendix 1. The study revealed in Table 4.30 that (92.6% of the respondents in the age group ranging between 25-44 years had poor practices and did not wash hands after using the toilet while (7.4%) in the same age range had good practices. The study had further shown that all age groups have high percentages of poor practice compared to low percentages of good practice in hand washing.

This is in line with Mpuzi et al, (2005) in their study on practice with regards to cholera outbreaks in Illala stated that many people had poor hand washing practices which contributed to outbreaks in the area. The above findings were supported by Chanda, , 2004 where she stated that hands must be washed because hand washing was the single most important aspect in infection prevention, hands must be washed with soap before and after eating food, after defecating, before cooking, after attending to a case of cholera and after attending to a cholera dead body. Ignoring this important practice could lead to cholera auto-infection and contracting cholera germs from infected food and non food. Cholera bacteria can also be transferred to others from infected hands during hand shake.

The study had also revealed that majority 77.8% of the study respondents who stay in high density area had poor practice they did not treat their water for drinking compared to 23.2% in the same residential area with good practice. Furthermore, the study has highlighted that the minority residents who stay in low density area had bad practice while the majority who stay in the same residential area treat their water before drinking (Table 4.31).

All the respondents with primary education and respondents who had never attended school had bad practices as they drew water for domestic use from contaminated shallow wells and Lake Mweru. On the contrary those with secondary and college education the majority had good practice they drew water from communal taps, protected wells and boreholes (Table 4.32). With regards to the use of toilets, the majority of the respondents 68% were sharing a toilet with the neighbors compared to the minority of respondents 32% who had good practices who used their own toilet.

From this description we can see that the practice of not washing hands after using the toilet can lead to cholera carriers bringing about recurrence of cholera in the district. Many people are predisposed to suffering from cholera by not treating their drinking water as well as drawing water from the contaminated sources. The study revealed that there was a relationship between staying in high density area and poor practice due to lack of access to clean and safe drinking water. This was in line with a study on practice by Mpuka, (2005) who confirmed that people who lived in high density areas of Dar Es Salaam drew water from shallow wells.

The study has further revealed that the lower the level of education the poorer the practice resulting from possible low income levels and poverty that could lead to drawing water from contaminated sources, hence recurrence of cholera in the Nchelenge district.

With regards to complete disposal of refuse 90% of the study respondents, either used the dust bins or dug out pits which are a good practice while 10% disposed off refuse in open spaces as elaborated in Table 4.32. The majority of the respondents (70%) disposed of refuse completely through burying as shown in Table 4.24. Further more, the study had revealed that the majority (72.7%) of the study respondents who stayed six in the same house had poor practice to get rid off refuse and (27.3%) had good practice compared to the houses where less than six people were staying who were practicing good refuse disposal (Table 4.23).

From the description above it is clear that many people who stayed in one house had difficulties to all the time observe good environmental hygiene. It is also clear that there was an element of contamination of the water table as a result of burring refuse which is the practice of majority residents.

These findings are in line with Miguel (2009) who stated that improperly buried refuse and refuse disposed off haphazardly in Lusaka formed a good media for flies to breed and feed and multiply in numbers rapidly and contaminated food, water and utensils. During the rainy season the scattered refuse was washed away into water and contaminated water for drinking that led to outbreaks of cholera in Lusaka. Table 4.20 in this study showed that 56 % of the study respondents got water from the lake and shallow wells where refuse was washed in support of Miguel, (2005).

Shallow wells have stagnant water that easily allows *vibrio* cholerae to settle and multiply in numbers making water unsafe for human consumption. When residents using shallow wells draw water, they will draw water together with particles that had been drawn to the well by rain of animals.

The above factors were clear association to recurrence of cholera in Nchelenge District and answered the third specific objective to establish the practice of Nchelenge community regarding prevention of cholera. The majority of study respondents had poor practices with regards to prevention of cholera.

In terms of food safety according to table 4.10, the majority of the respondents 56% ate left over foods without heating the food. The study had further revealed that the majority 52% study respondents did not always wash fruits before eating. This is evidence enough to conclude that the majority of Nchelenge residents consumed contaminated food that resulted from poor practice.

From the description above the researcher concluded that people were living with cholera a major health problem in the district and this confirmed the declaration of Nchelenge district as a cholera epidemic area by parliament (Masebo, 2006). These results showed that the higher the level of education, the better the practice. Education helps people to understand health matters and adopt good behavior. With regards to religion in relation to practice all respondents had good practice no single religion registered bad practice. The study revealed that there was a good relationship between practice and the level of education and religion because all had good practice in both categories. The researcher concluded that the lower the knowledge on prevention and prevention of cholera, the poorer the practice.

5.4 IMPLICATIONS TO THE VARIOUS HEALTH CARE SYSTEMS

Oxford (2006) defines implication as" The conclusion that can be drawn from something although it is not directly stated. It is also a likely hood consequence or the state of being involved in something".

5.4.1 PRACTICE

The implication of health care system in Zambia for many years has been preventive to some extend and more of curative oriented. This has resulted in many people still attaching more value to curative services despite the fact that the health services are now preventive and promotive oriented. The implications of this study showed a relationship to the problem under study, its objectives and hypothesis. Since communication to all the people regardless of gender and educational back ground ensues continued care, therefore, there was need to intensify and extend health education to women by the health centre staff and the district authorities. If possible, measures should be put in place to have a cholera program on the local radio, Radio Luapula to disseminate cholera information to all those who are listening in various local languages.

The study further revealed that 36% of the respondents knew that their toilets were near the source of water (less than 200 meters away form water source) implying that there was a possibility of water table contamination and people were drawing contaminated water from boreholes as shown in Table 4.3.

The study revealed that the practice of 16% of the respondents drew water from the lake as indicated in Table 4.20, 70% of the respondents dispose off refuse by burying as shown in Table 28, 26% of the respondents do not wash their hands after using the toilet and 21% sometimes wash their hands sometimes not after using the toilet as indicated in Table 4.22. Furthermore, 23% of the respondents do not treat their drinking water; this implied that there was an element of drawing contaminated water from the lake and contaminated boreholes since water tables could be contaminated by buried contaminated and non disinfected refuse. There was also auto infection by not washing hands after using the toilet in those carrying cholera bacteria leading to career state hence recurrence of cholera in Nchelenge district.

5.4.2 RESEARCH

The study unity of 50 respondents was very small to represent the cholera situation in the district since places such as the swamps and islands were not reached. This implied that the data obtained could only be representing part of the district not the whole. There was need for the health care system to consider conducting a similar study on a large scale to have an adequate representation of cholera in the district.

There are other factors which need to be researched on, other than knowledge, attitude and practice on cholera in Nchelenge district.

5.4.3 EDUCATION

The study revealed that 60% of those with primary education had low knowledge of what causes cholera and the ratio of 2: 1 for high and low knowledge on what causes cholera in those who have never attended education, is representative enough to make an assumption that many of the un educated in the community have little knowledge and it implied that the incidence of cholera in the district was high as shown in Table 4.10. Therefore, this calls for the health care providers in the district to educate more of those with little or no education back ground on causes of cholera.

Another interesting aspect of the finding of this study revealed that there were more male respondents with high knowledge on cholera treatment than female respondents. The study showed that there were many male house hold heads than female house hold heads interviewed and that there was more knowledge in the males than the females.

This implied that communication is a problem in the district when it comes to educating the community on cholera issues, women are left out and their spouses don't communicate what they learn from sessions of cholera. The out most interesting thing in this study is that the study has revealed that all the respondents from all the religious grouping in the district had positive attitude towards prevention of cholera outbreaks in the district as revealed in section C of the questionnaire (appendix 1 of this document) the respondents feel that where ever people are gathering preventive measures should be upheld and foods such as fruits should be washed or pearled before eating them.

The implication is that the health care system has adequately educated the communities of Nchelenge district and people are very much aware of the impact and consequences of having an out break of cholera in their area despite few people having poor knowledge and bad practices on cholera.

5.4.4 THE DISTRICT ADMINISTRATION

The health centers to establish chlorine sale points especially in high density areas to enable all members of the community of Nchelenge have access to chlorine to make their drinking water safe because one case of cholera is enough to infect numbers and within a short period cover the whole district with cholera.

The study revealed that only 44% of the respondents use chlorine to make their water safe for drinking and 56% of the respondents do not use chlorine at all as indicated in Table 4.21. This implies that either the majority of people do not access the product because the central level in the health care system does not adequately supply the district or the product is not affordable to the local communities because of poverty. Therefore there is need to subsidize chlorine to afford the common person in the district and the central level to supply adequate stock to the district and the district to stock enough to supply to all the people all the time.

In addition the nursing administration should employ and allocate more nurses for out reach activities so that it is easy and affordable to give health education on cholera and also to carry chlorine for sale at out reach posts.

There is need to combine efforts with the stake holders and cooperating partners in the district to campaign for cholera prevention at all cost and at every place where people of all walks of life are present, because behavioral change is an on going process achieved over a period of time.

The study revealed that 64% of the respondents agreed that increase in poverty levels in the district is the reason behind the rise in street vending and 32% agreed that increase in population is the reason behind the rise in street vending as shown in Table 4.14 above. This implies that the health status of the majority is compromised as well as the general hygiene leading to flies accumulating in the communities contributing to cholera out breaks. Probably the local government should consider putting up several community markets to prevent street vending, the health care system in the district should consider improving the levels of health care at community level so that health care services can be accessed easily.

5.5 RECOMMENDATIONS

Oxford (2006) defines recommendation as a noun if you recommend something to someone; you praise it and suggest they try it.

The study has identified gaps in several areas of practice, attitude and knowledge among residents of Nchelenge District which act as contributing factors associated with recurrences of cholera in the district. This is a challenge to the health workers in the district. Therefore, personnel holding key positions have been identified to take the following recommendations

5.5.1 DISTRICT HEALTH OFFICE

5.5.1.1 District health Office together with health centre staff should carry out regular technical support visits to the neighborhood health committees especially those in the hard to reach islands to monitor the preparedness put in place to prevent cholera.

5.5.1.2 Intersectoral collaboration with other line ministries, departments and non governmental organizations interested in prevention and control of cholera, both in Zambia and the neighboring Democratic Republic of Congo, must be promoted and strengthened by the district health office to combine their efforts in the fight against cholera. Line ministries like Ministry of Local Government, Ministry of Agriculture Food and Fisheries, Ministry of Education, Ministry of Community Development and Social Welfare and departments such as Immigration and Customs.

5.5.1.3 I also recommend to the district health office to carry out a similar study on a large scale to include the swamps that covers 60% of the district area and if possible a study for the whole district to have a better representation of factors associated to recurrences of cholera in the District.

5.5.1.4 The District should form a joint cholera preparedness committee with the authorities in the neighboring Democratic Republic of Congo to effectively control and prevent cholera outbreaks like the way Nakonde District did to form a joint cholera preparedness committee with Tanzanian authority and it has worked very well and for the past four and more years cholera has stopped resurfacing in Nakonde (un published data).

5.5.1.5 To establish a cholera awareness program and rehearse with the community radio, Radio Luapula authorities so that the program on cholera in the district is broadcast on a daily basis or weekly basis since the community radio has the capacity to cover the whole district and some neighboring districts.

5.5.2 THE LOCAL GOVERNMENT – COUNCIL

5.5.2.1 To consider legalizing Nchelenge residents as legal settlers and register them with the local government so that the residents are connected to piped water supply from the local authority in order that the community has access to safe and clean drinking water.

5.5.2.2 The rural water supply program should be extended to the swampy areas and other dry lands than to concentrate more around the townships so that uniform access to safe and clean drinking water is achieved in the District and avoid recurrences of cholera.

5.5.2.3 The District Health Office to consider recruiting community health nurses and environmental health technicians which are very few in the district to help the communities in maintaining good sanitation.

5.5.3 HEALTH CENTRE LEVEL

5.5.3.1 Health care providers should continue providing health education to the residents on the prevention of cholera and awareness of recurrence of cholera.

5.5.3.2 The clinics to stock enough chlorine always for supply and sell to the residents in order to make drinking water safe.

5.5.3.3 To strengthen the community cholera preparedness members to be active and meet regularly to review ways of how to combat and prevent cholera from occurring in there areas.

5.5.3.4 The health centre staff to make it a master that whenever they have an outreach activity when giving health education cholera should always be discussed.

5.5.4 COMMUNITY LEVEL

5.5.3.1 Influential members of the community such as the village headmen, traditional healers, councilors and church leaders should be chosen to be members of community cholera preparedness committee to fight against cholera recurrences.

5.5.3.2 Communication skills should be improved among community based volunteers in the communities through refresher courses so that a suspected case of diarrhea is reported to the health facility promptly for management.

5.5.3.3 There is need to empower the community volunteers with the sales of chlorine in order to make the product easily accessible the community residents.

5.6 DISSEMINATION OF FINDINGS

According to Hornby, (2006), dissemination refers to the spread of information, knowledge and other findings so that it reaches many people.

Dissemination of the findings will be done through written report. I will make four (4) copies of the research report. The copies of the research will be distributed as follow: One copy to the Department of Nursing Sciences, one copy to the University of Zambia Medical Library, CHAZ and the fourth copy will be kept by the researcher.

5.7 LIMITATIONS OF THE STUDY

According to Hornby, (2006), when you talk about limitations of a person or thing, you are talking about the limits of their ability, the reducing or control of a person or ting.

5.7.1 The major limitations encountered during the study were that Nchelenge was too hot at the time of data collection such that as early as 09:00hrs it was too hot making the researcher and the respondents easily tired and worse was to go back in the field in the afternoon when it the temperatures were higher than those in the morning.

5.7.2 The study was carried out within a short period of time and alongside with other courses during the academic year, hence it was conducted within the limitations of time in which to be completed and submitted to the University of Zambia, School of Medicine, and Department of Nursing Sciences.

5.7.3 The sponsored funding towards the research was extremely inadequate such that at some point the researcher had to walk some distance to get to the respondents and arrived to the study area already exhausted. The little funding could not also allow the researcher to conduct a large scale study. As a result of this, generalization of the findings should be made with caution in relation to the general population.

5.7.4 A sample size of respondents was too small to make to make statistical generalization to the whole population of Nchelenge District.

5.8 CONCLUSION

The study was carried out to seek the Knowledge, Attitude and Practice as variables associated with recurrences of cholera in Nchelenge District. The objectives of the study have been met and the hypotheses have been proven. The sample consisted of (60) 50 for the actual study and 10 for pilot study. The study revealed that the majority of the people had low knowledge on cholera; the majority had poor practice and positive attitude towards the prevention and control of cholera.

The study has reviewed that 23(46%) of the respondents do not treat their water for drinking, 8(16%) drew water from the contaminated lake, 26(52%) of the respondents don't wash their hands after using the toilet and 21(42%) of the respondents sometimes washed hands and sometimes did not wash hands after using the toilet.

Furthermore, the study has reviewed that 35(70%) of the respondents disposed off their refuse by burying method. All these practices reviewed in the study could contaminate food and also lead to drinking unsafe water and hence contributed to recurrences of cholera in the district.

The study had reviewed that flies as a result of street vending and street vending itself, poverty and rapid population growth are associated to recurrences of cholera in Nchelenge district. The fact that the majority of Nchelenge residents are settled in unallocated settlements, the local authority (District council) do not supply these residents with treated safe drinking water, subject the residents to drinking unsafe contaminated water contributing to recurrence of cholera in the District. Since one case of cholera is enough to infect the whole District and the devastating outcome of the outbreak of cholera, the study has reviewed that knowledge was a problem that needed several and urgent interventions in order to overcome cholera.

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APPENDIX I Questionnaire number: --------

UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF NURSING SCIENCES

Structured Interview Questionnaire.

Research topic: Study on Knowledge, Attitude and Practice of Cholera Outbreaks in Nchelenge District

Date of Interview: -------- /--------/----------.

Place of Interview: -----------------------------

INSTRUCTIONS TO THE INTERVIEWER

1. Introduce yourself to the respondents.
2. Explain the purpose of the study.
3. Explain assurance of confidentiality so that respondents are free to give accurate information to the best of their knowledge.
4. Do not write the respondent's name on the questionnaire.
5. Ask all questions in the order they are arranged.
6. For questions with responses, tick (√) your answers in the boxes provided.
7. For questions without alternatives, write responses clearly on the spaces provided.
8. Respondents should be free to ask questions during the interview.
9. Do not write in the space marked "For Office Use Only"
10. Thank the respondents at the end of each interview.

SECTION A: DEMOGRAPHIC DATA

1. What is your sex?

a) Male [ ]

b) Female [ ]

2. Age on last birthday.

a) 18-24 years [ ]

b) 25-44 years [ ]

c) Above 45 years [ ]

3. What is your primary language? --

---.

4. What is your marital status?

a) Single [ ]
b) Married [ ]
c) Widowed [ ]
d) Separated [ ]
e) Divorced [ ]
f) Cohabiting [ ]

5. What is your religion/ Denomination?

a) Roman catholic [ ]
b) Jehovah's witnesses [ ]
c) United Church of Zambia [ ]
d) Seventh Day Adventist [ ]
e) Other specify--

---.

6. Where do you live?
a) High density area [ ]
b) Medium density area [ ]
c) Low density area [ ]

7. What is your highest level of education?
a) Never attended school [ ]
b) Primary [ ]
c) Secondary [ ]
d) College [ ]
e) University [ ]

8. How many rooms are in your house?
a) One [ ]
b) Two [ ]
c) Three [ ]
d) Four and above [ ]

9. How many people stay in your house? --

--.

10. What is the current occupation of the Head of the house?
a) Unemployed [ ]
b) Self employed [ ]
c) Formal employment [ ]
d) House wife [ ]

SECTION B: KNOWLEDGE

At this time I would like to ask you few questions on your views with regard to

Cholera and its prevention.

11. Do you know how far your pit latrine should be from your source of water?
a) Yes
b) No

12. If your answer in question 21 is yes how is the distance away from source of water?
a) Far (200 meters or more) [ ]
b) Near (less than 200 meters) [ ]
c) Nothing [ ]

13. Who dug the pit latrine you are using answer all?
a) Me only [ ]
b) Me and my neighbors [ ]
c) Neighbors only [ ]
d) Community owned [ ]
e) Nothing [ ]

14. If your answer in question 23 is nothing, what do you use for defecation purposes?
a) Lake [ ]
b) Bush [ ]
c) Open space [ ]
d) Other specify---.

15. What causes cholera?
a) Germs [ ]
b) Witchcraft [ ]
c) I don't know [ ]
d) Other specify---.

16. How would you know that a person is infected with cholera?

a) Losses weight [ ]
b) Severe coughing [ ]
c) One has severe diarrhea and vomiting [ ]
d) Other specify---

---.

17. How can cholera be prevented?

a) I don't know [ ]
b) Supply of pure water and adequate sanitation [ ]
c) Take traditional medicine [ ]
d) Other specify---

---.

18. What is the treatment for cholera?

a) Give traditional medicine and nurse at home [ ]
b) Give ORS and take to health centre/ institution [ ]
c) I am not sure [ ]
d) Other specify---

---.

SECTION C: ATTITUDE

19. How do you feel about sharing food at funnels, Hospital, meetings and church gatherings during cholera out breaks?

a) Strongly bad [ ]
b) Not very bad [ ]
c) Bad [ ]
d) Strongly okay [ ]
e) Not sure [ ]

20. Do you think fruits should be washed before eating them?

a) Strongly agree [ ]

b) Agree [ ]
c) Not sure [ ]
d) Don't agree [ ]
e) Strongly don't agree [ ]

21. What do you think could be the reason behind the rise in street Vending in the District?

a) Increase in poverty levels [ ]
b) Encouragement from political leaders [ ]
c) Increase in population [ ]
d) I don't know [ ]

22. Are you interested in preventing cholera in your area?

a) Yes
b) No

23. If your answer in question 32 is No, explain why--

SECTION D: PRACTICE

24 What is your source of water supply?

a) shallow wells [ ]
b) Lake [ ]
c) Communal tap [ ]
d) Protected well/ borehole [ ]
e) Other specify---.

25. How do you ensure that your water for drinking is safe?

a) By boiling [ ]
b) By letting the water settle [ ]
c) By chlorinating [ ]
d) By filtering [ ]
e) Nothing [ ]
f) Others specify--

---.

26. Do you wash your hands after using the toilet answer all?
a) Yes [ ]
b) No [ ]
c) Sometimes [ ]
d) I am not sure [ ]

27. Where do you dispose the refuse?
a) Dust bin/ bags [ ]
b) Dug out rubbish pit [ ]
c) Open space [ ]
d) Other specify---

---.

28. How do you get rid of the disposed refuse from your home completely?
a) By burning [ ]
b) By burring [ ]
c) Through the local authority [ ]
d) Other specify---

---.

29. What do you do to fruits before eating answer all?
a) Wash before eating [ ]
b) Pearl before eating [ ]
c) Sometimes wash and sometimes not [ ]
d) I don't do anything [ ]

30. How do you keep left over food?
a) Cover the food [ ]
b) Refrigerate [ ]
c) Left uncovered [ ]
d) Other specify---

---.

31. What do you do to left over food before eating it?
a) Heat before eating [ ]
b) Eaten cold [ ]

c) Thrown away [ ]

d) Other specify---

---.

32. When do you wash hands?

a) Before eating [ ]

b) After serving food [ ]

c) Before cooking [ ]

d) Not sure [ ]

33. What do you do when a member of the community develops cholera answer all?

a) Give traditional herbs and observe at home [ ]

b) Give Oral Rehydration Salt [ ]

c) Rush the individual to the health facility [ ]

d) Nothing [ ]

34. Do you have any final words or more suggestions on prevention of cholera? -----

---.

Thank you very much for your cooperation, participation and for according me this opportunity to go through an interview with you!

APPENDIX II

INFORMED CONSENT

Dear participant,

I am Kabita Kabita a student undertaking a Bachelor of Science in Nursing Program in the Department of Nursing Sciences at the University of Zambia, School of Medicine.

In partial fulfillment of my degree in Nursing, I'm required to undertake a research project. My study topic is on knowledge, attitude and practice of residence of Nchelenge District with regard to cholera out breaks.

You have been randomly selected to participate in this study and I wish to inform you that participation in this study is voluntary and therefore, you are free to withdraw at any stage of the study if you wish to. You will be asked some questions about the prevention and control of cholera to assess your knowledge, attitude and practice. Any information you will give me will be kept in confidence and no name will be written on the interview schedule.

You might not receive direct benefits from the study in terms of monetary gain. The information that you give will help in developing strategies to prevent cholera from occurring. It will also contribute to improvement of the delivery of health services in the District.

Declaration

I understand that my participation in this study is voluntary and that I may refuse or withdraw my consent at any time without any penalty.

I ...., freely give consent to take part in this study.

Signature/Thumb print.. Date..

Signature of interviewer.. Date...

APPENDIX III: WORK SCHEDULE

TASK TO BE PERFORMED	RESPONSIBLE PERSON	WEEKS	TIME FRAME	PERSON DAYS REQUIRED
Research proposal Development	Researcher/supervisor	8 weeks	01/06/09 to 26/07/09	56 days
Literature Review	Researcher/supervisor	Continuous	Continuous	Continuous
Finalize Research proposal	Researcher	4 weeks	28/07/09 to 24/08/09	28 days
Formulation of Data collection Tools	Researcher	3 weeks	28/08/09 to 17/09/09	21 days
Pilot Study	Researcher	3 weeks	24/09/09 to 17/10/09	21 days
Data Collection Amendments	Researcher	3 weeks	27/09/09 to 17/10/09	21 days
Data Collection	Researcher	3 weeks	18/10/09 to 07/11/09	21 days
Data analysis	Researcher	4 weeks	22/11/09 to 13/12/09	28 days

Report writing	Researcher	4 weeks	16/12/09 to 14/01/10	28 days
Finalize report and dissemination of findings	Researcher	6 weeks	21/01/10 to 03/03/10	42 days
Monitoring and Evaluation	Researcher	Continuous	Continuous	Continuous

APPENDIX IV: GANTT CHART 2009-2010

TASK TO BE PERFORMED	RESPONSIBLE PERSON	JUNE 2009	JULY 2009	AUG 2009	SEPT 2009	OCT 2009	NOV 2009	DEC 2009	JAN 2010	FEB 2010	MAR 2010
Research Proposal Development	Researcher										
Literature Review	Researcher										
Finalize Research Proposal	Researcher										
Formulation of Data Collection Tools	Researcher										

Pilot Study	Researcher										
Data Collection	Researcher										
Data Analysis	Researcher										
Report Writing	Researcher										
Submitting a Draft Report to PBN	Researcher										
Finalize Report and Dissemination of Findings	Researcher										
Monitoring and Evaluation	Researcher										

APPENDIX V: BUDGET

UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF NURSING SCIENCES

RESEARCH PROJECT BUDGET

ITEM	UNIT MEASURE	NUMBER REQUIERED	UNIT COST.ZM. K	TOTAL COST
STATIONERY				
Realm of paper	Each	3	35,000	105,000
Pens	Each	3	1,000	3,000
Pencils	Each	52	500	26,000
Rubber	Each	52	500	26,000
Note book	Each	4	8,000	32,000
Markers	Each	3	6,000	18,000
Tipex	Box	2	10,000	20,000
Stapler	Each	1	90,0000	90,000
Scientific calculator	Each	1	150,000	150,000
Flip charts	Each	3	50,000	150,000
Staples	Box	1	10,000	10,000
Box files	Each	2	30,000	60,000
Folder clips	Box	10	1,500	15,000
Field bag	Each	1	260,000	260,000

Diary	Each	2	80,0000	160,000
Spiral	Each	5	2,000	10,000
Boostick	Each	1	15,000	15,000
Manila paper	Each	5	1,000	5,000
SUB -TOTAL				**995,000**
SECRETARIAL SERVICES				
Questionnaire typing and printing	Pages	10	3,000	30,000
Research proposal typing and binding	Pages	575(5 copies)	3,000	1,725,000
Research report writing(final Document)	Pages	113	3,000	339,000
Binding of research reports/ document	Each	5	70,000	350,000
Questionnaire photocopying	Page	7x50	200	70,000
Sub - Total				**2,514,000**
PERSONNEL				
Transport to and from Nchelenge	Each	2	290,000	580,000
Transport during research activity	Each day	20	10,000	200,000

Transport to and from outreach research areas	Days	2	200,000	400,000
Snacks for respondents	Each	50	5,000	250,000
Refreshments	Each day	20	50,000	1,000,000
Contingency at 10% of Total				**593,900**
Sub-Total				**3,023,900**
GRAND TOTAL				**K6,532,900**

APPENDIX VI: JUSTIFICATION FOR THE BUDGET

Field experience

The researcher and need lunch allowances and transport money as he is expected to spend a lot of time in the community going from home to the other and also travelling to some outreach places to collect data.

There is need also to provide respondents with some snacks during the interview because of the expected long duration of the exercise as well as disturbing them from their duties of preparing meals. Therefore, it is very necessary for this research project to have a field work allowance for transport and lunch.

Stationary

To successfully complete any research project stationary items are very important for data collection, analysis and data storage. In this study different stationary items are required to successfully complete the study project as planned in the budget.

Secretarial services

The author's computer broke down and hence needed secretarial assistance from outside his capability. Secretarial services such as typing and printing of research proposal, photocopying 50 questionnaires and binding the final research document. Therefore, the author needed enough funds to pay for these services provided to him.

Contingency funds

In any activity carried out there are some unforeseen circumstances such as rise in commodity prizes (inflation) and coming into the study of unplanned activities. Therefore, expenses towards such should be planned for to easy carrying on during the study. Contingent fund of 10% of the total amount of the budget is included in the budget.

THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF NURSING SCIENCES

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P.O Box 50110
Lusaka

12[th] September, 2009

NO OBJECTION

OFFICE OF THE
DISTRICT HEALTH DIRECTOR
P.O. BOX 740037, NCHELENGE

The District Director of Health
Challenge District Health Management ~~Team~~
NCHELENGE

UFS: The Head, Department of ~~Nursing Sciences~~

Dear Sir/madam,

RE: REQUEST FOR PERMISSION TO UNDERTAKE A RESEARCH STUDY IN NCHELENGE DISTRICT

I am a fourth (4[th]) year student pursuing a Bachelor of Science in Nursing (BSc NRS) degree at the Department of Nursing Sciences in the School of Medicine at the University of Zambia. It is a requirement in the fourth year of study that I conduct a research study project as partial fulfilment for the award of a Bachelor of Science degree in Nursing. My study topic is **"Factors associated with reoccurrences of Cholera outbreaks in Nchelenge District".**

I am therefore, requesting for permission to conduct structured interviews to household heads aged 18years and above from Nchelenge District communities. I intend to undertake this study exercise on 50 household heads. These were randomly selected communities in the District. The exercise will start from October to November, 2009.

Thanking you in advance,

Yours faithfully,

Kabita Kabita