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TOPIC: KNOWLEDGE, ATTITUDES AND PRACTICE OF INFECTION PREVENTION MEASURES AMONG HEALTH CARE PROVIDERS AT KAFUE DISTRICT HOSPITAL, NCHANGA SOUTH MINE HOSPITAL AND MAINA SOKO MILLITARY HOSPITAL.

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DECLARATION

We, hereby declare that the work presented in this study for a Bachelor of Science degree in nursing 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.....

(Candidate)

Signed..... Date.....

(Candidate)

Signed..... Date.....

(Candidate)

Approved..... Date.....

(Supervising Lecturer)

STATEMENT

We, Chiboola Bridget, Kalobwe Secunda Mwape and Mandona Evason, do hereby certify that this study is entirely the result of our own independent investigations. The various sources to which we are indebted are clearly indicated in the text and reference.

Signed..... Date.....

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LIST OF ABREVIATIONS

1. AIDS – Acquired Immune Deficiency Syndrome
2. CBoH- Central Board of health
3. CDEs – Classified Daily Employees
4. CSO - Central Statistical Office
5. DHMT – District Health Management Team
6. HAI - Hospital Acquired Infection
7. HCP - Health Care Providers
8. HIV – Human Immune Deficiency Virus
9. HZ – Herpes Zoster
10. IS–Injection Safety
11. IP – Infection Prevention
12. IPC - Infection Prevention Commit
13. KNH - Kafue District Hospital
14. MSMH – Maina Soko Military Hospital
15. MOH – Ministry of Health
16. NSMH - Nchanga South Mine hospital
17. ODA – Overseas Development Agencies
18. QA - Quality Assurance
19. WHO – world Health Organization

ABSTRACT

The study was aimed at determining the knowledge, attitude and practice of infection prevention among the health care providers at Mina Soko Military Hospital, Kafue District Hospital and Nchanga South Mine Hospital. The focus was directed at knowledge, attitude and practice of health care providers on infection prevention measures. Studies have been done on general nurses, mid wives and medical doctors but no study has been done on other health care providers such as paramedics, non- proffessional health wokers and pschosocial councellors, thereby identifying a gap in the infection prevention practices.

Infection prevention program has been promoted as a strategy to reduce nosocomial infections and to minimize adverse social outcomes associated with unexpected expenditure due to patients long staying in the hospitals. The researcher investigated the knowledge attitude and practice of infection prevention measures among the health care providers at Mina Soko Military Hospital, Kafue District Hospital in Lusaka Province and Nchanga South Mine Hospital on the Copper Belt province-Zambia.

A cross sectional descriptive study was conducted at the above named hospitals. The study population included the medical doctors, nurses, paramedics, psychosocial counselors and non-professional health care providers. A sample comprising of 150 respondents was selected using systematic random sampling method. A self-administered questionnaire was used to collect data. Quantitative data was grouped manually and was analyzed using the SPSS software of the computer. Data was presented in the form of frequency tables, pie-chats and bar-chats. Cross tabulations was used to determine the relationship between variables.

The findings of the study revealed that all the respondents 100% (150) had heard about infection prevention. Out of the 100% who had heard of infection prevention 67% had high knowledge. The study also indicated that all the respondents 100 % (150) had positive attitude towards infection prevention. It was also discovered in the study that of the respondents 20% had poor practices. It is evident from the studies that knowledge influences attitude and attitude influences the practice. In order for one to have a positive attitude on infection prevention they require to have adequate knowledge on the topic. Adequate knowledge coupled with positive attitude

would result into good infection prevention practices. From the study, 100% of the respondents had head about IP and they all had a positive attitude.

The factors hindering good infection prevention practices among the health care providers were inadequate material resources and human resources. There was no factor on its on that contributed to the health care providers practice towards infection prevention. Therefore, there is need for authorities to attend to all the factors in order to meet the highest set standards in infection prevention.

1.0 Introduction

1.1 Background information

Infection prevention knowledge and practice are very essential components in the health service provision within the health care system.

Infection Prevention is an ancient practice deep-rooted in global cultures. In Africa, Chanda, (2004), stated that the communities protected the health and wellbeing of its members through the practice of Infection Prevention. Traditionally trained surgeons circumcised baby boys aseptically by flaming their equipment over 'chikoloboyi' (open flame lanterns) between circumcisions. This practice aimed at sterilizing instruments thereby preventing infections to the circumcised babies.

Infection prevention and control is one of the most vital programmes in the health sector which should fully be functional with full support from both the hospital management and the Ministry. This activity should be placed in all health facilities so as to reduce the risk of acquiring and transmitting infections amongst patients and staff.

In modern health care systems, the health care providers aim at preventing the transmission of infection to their clients, themselves and vice versa. In order to further promote this concept, all modern health institutions are required to institute infection prevention programs in their environment of practice. It is hoped that this program will promote quality Health Care provision (Chanda, 2004).

Overview of Infection Prevention.

The science of infection prevention can be said to be a little more than a century old. It originated from Louis Pasteur in 1850, when he made a breakthrough by discovering micro-organisms and their relationship to disease. This was followed by Florence Nightingale, noting that more soldiers died from preventable wound infections than bullets during the Crimean War. She then initiated the need for Infection Prevention in Health Care Settings,

In the 1950s, women acquired infections during delivery. It was estimated that one woman in three died in postnatal wards. In Vienna, Dr Semelweiz fought against hospital acquired infections in the obstetric units. He introduced basic hygiene practices that reduced the rate of infections in obstetric units. Later Dr Henry William, Pasteur and Koch came up with sterilization of hospital equipment (Chanda, 2004).

During all this period, no committees were set up to spearhead the running of infection prevention programmes in the health institutions. So between 1939 and 1945, the Medical Research Council suggested the appointment of multi- disciplinary committee to prevent and control hospital- acquired infections.

Modern hospital infection control programs first began in the 1950s in England, where the primary focus of these programs was to prevent and control hospital-acquired staphylococcal outbreaks. In 1968, the American Hospital Association published "Infection Control in the Hospital," the first and only standards available for many years. At the same time, the Communicable Disease Centre, later to be renamed the Centre for Disease Control and Prevention (CDC) began the first training courses specifically about infection control and surveillance. In 1969, the Joint Commission for Accreditation of Hospitals--later to become the Joint Commission on Accreditation of Health care Organizations (JCAHO)--first required hospitals to have organized infection control committees and isolation facilities (Hoffmann, 2000).

In 1959, there was an outbreak of infection in Torbay Hospital in Devon, United Kingdom. This led to the appointment of a standing medical committee. The results from the committee led to the appointment of the first Infection Prevention Nurse in the United Kingdom (Chanda, 2004).The responsibility of the Infection Prevention nurse is to monitor the running of the Infection Prevention Programme and ensure that health care providers practice Infection Prevention measures. This will prevent them from acquiring infections and transmitting infections to the recipients of care.

People receiving health and medical care whether in the hospital or in the clinic are at risk of becoming infected unless precautions are taken to prevent transmission of hospital acquired infections or nosocomial infections. Nosocomial infections range from as low as 1% in some of the American and European countries to more than 40% in Asia, Latin America and Sub-Saharan Africa (Teitjen et al, 2006).

The health care providers including support staff that work in these settings are also at risk of exposure to serious, potentially life threatening infections like the HIV and hepatitis B and C infections especially in developing countries (Phipps et al, 2002).

Munganga (2007), quoted Ofili and Sogbesan (2003), who noted that infection prevention practices were very poor among students in the University Teaching Hospital in Benin,

Nigeria. They, then, recommended that infection prevention be introduced in the curriculum for student nurses.

In 2007, a workshop was conducted in Swaziland to train Health care providers in infection prevention. Participants included doctors, nurses, pharmacists, laboratory technicians and support staff (Wonder and Mupela, 2007).

The introduction of infection prevention practices is essential in developing countries which have limited resources. It is important that health care providers understand and use the recommended infection prevention guidelines to reduce the risk of cross infection.

Overview of Infection Prevention Programmes in Zambia

Chanda (2004), stated that the University Teaching Hospital, being the National Referral Hospital, became the first hospital to start the Infection prevention Control Programme in Zambia. It formed the first Infection Prevention control committee in 1983, following an infection out break due to *Pseudomonas Aerogunosa* in the Neonatal Unit. The hospital appointed the first Infection Prevention Nurse to work with the Hospital Infection Prevention and Control Committee in 1987.

Infection Prevention liaison nurses got trained for each Hospital Department, by the year 1993. Educational programmes for Health Care Providers were then put in place, based on departmental needs. Another course was conducted in 2001 at the University Teaching Hospital.

At National level, the first Infection Prevention working group was established in 2002, by the Clinical Care and Diagnostic Service Directorate of the Central Board of Health. The working group developed the universal or standard precautions guidelines to guide the practice of health care providers in clinical settings (CBoH, 2003).

The universal Infection Prevention measures are as follows;

- Consider every person (patient or staff) as potentially infectious and susceptible to infection.
- Hand wash (or use an antiseptic hand rub) after contact with blood, body fluids, secretions, excretions and contaminated items as well as before wearing gloves and after removing gloves.

- Wear gloves before contact with blood, body fluids, secretions and contaminated items as well as before contact with mucous membranes and non-intact skin

- Use physical barriers (masks, goggles, face masks, gowns) to protect mucous membranes of eyes, nose and mouth when contact with blood and body fluids is likely.

- Prevent soiling of clothing during procedures that may involve contact with blood or body fluids

- Use antiseptic agents when cleaning the skin or mucous membrane prior to surgery and for wound care.

- Use safe work practices such as, avoid recapping used needles, avoid removing used needles from disposable syringes, avoid bending, breaking or manipulating used needles by hand and place used sharps in puncture- resistant containers

- Safely dispose of infectious waste materials to protect those who handle them and to prevent injury or spread of infection to the community.

- Processing of instruments, gloves and other items by decontaminating and thoroughly cleaning reusable equipment prior to reuse.

The Role of Hospital Infection Prevention Committees

Every modern hospital is expected to have an Infection Prevention Programme. Each department is required to have an Infection Prevention liaison Nurse to represent them at the Hospital Infection Prevention Committee, which should be headed by a Microbiologist. At Kafue District Hospital, there is an Infection Prevention committee which is headed by the Environmental Health Technician. This committee spearheads the implementation of Infection Prevention Practices. At Nchanga South Mine Hospital in Chingola, the Infection Prevention Committee is manned by the Infection Prevention Nursing Officer. All wards in charges are members of this committee. At Maina Soko Military Hospital infection prevention committee is headed by the Medical Doctor

The main objective of these committees is to uphold the decisions regarding the prevention of hospital acquired infections. The role of the hospital infection prevention committees is to do the following;

1. Formulate Infection Prevention policies and guidelines to guide the practices in order to ensure quality health care provision.
2. Provide guidelines for the purchasing of antimicrobial, antiseptic, disinfectant solutions and the most appropriate and cost- effective patient care items.
3. Design strategies for implementing the infection prevention programmes in all the Departments. (Chanda, 2004).

Despite the initial work done through the introduction of International Infection Prevention Standards through various programs, there has been overwhelming evidence of poor infection prevention practices by health care providers. This has led to the increase in hospital-acquired- infections.

1.2 STATEMENT OF THE PROBLEM

All health care providers are required to apply proper infection prevention practices in their work environment in health care institutions. The implementation of appropriate locally feasible infection control interventions in hospitals slows the spread of infections. But in reality there is still evidence that the hospital-acquired infection (HAI) rate remains high.

Nejad, et al (2011),stated that, the burden of HAI is already substantial in developed countries, where it affects from 5% to 15% of hospitalized patients in regular wards and as many as 50% or more of patients in intensive care units (ICUs). In developing countries, the magnitude of the problem remains underestimated or even unknown largely because HAI diagnosis is complex and surveillance activities to guide interventions require expertise and resources.

Additionally, studies that were conducted in other African countries between 1995 and 2009 revealed high rates of HAI ranging from 2.5% to 14.8% in Algeria, Burkina Faso, Senegal and the United Republic of Tanzania. Overall HAI cumulative incidence in surgical wards ranged from 5.7% to 45.8% in studies conducted in Ethiopia and Nigeria. The latter reported an incidence as high as 45.8% and an incidence density equal to 26.8 infections per 1000 patient-days in paediatric surgical patients. In a study conducted in the surgical wards of two Ethiopian hospitals, the overall cumulative incidence of patients affected by HAI was 6.2% and 5.7%. Surgical site infection was the most common infection encountered in two studies investigating overall HAI incidence rates among surgical patients. Similarly, a study from Burkina Faso on HAI prevalence among surgical patients reported surgical site infection as

being the most common type, followed by urinary tract infection and hospital-acquired pneumonia.

A study that was conducted at Ronald Ross General Hospital in Mufulira, revealed that despite the hospital staff receiving training, the hospital was still recording rates as high as 33% of post-operative Caesarean Section wound infections (elective and emergency). This is against World health Organization (WHO) acceptable postoperative wound infection rate of 5% (Katowa et al, 2007).

The accreditation surveys conducted by the Central Board of Health in 2003 indicated that the rate of post-operative wound infection among mothers who underwent caesarean section was 30%. The high infection rates were attributed to poor infection prevention practice among Health Care Providers (CBoH, 2003).

A study which was conducted at the University Teaching Hospital between July and September 1995 revealed that 21% of patients with burns died due to Nosocomial infections (Chanda, 2007).

Between 2010 and 2011, the post-operative wound infection rates recorded at the three (3) study location were as follows; Kafue District Hospital (KDH) was 11% (KDH registers), Maina Soko Military Hospital (MSMH) 6.3% (MSMH register) and Nchanga South Mine Hospital (NSMH) recorded 5.6% (NSMH registers).

The possible causes of post operative wound infection at KDH, MSMH and NSMH could be attributed to various factors which include; shortage of infection prevention materials like antiseptic solution, disinfectants and gloves.There is also acute staff shortage leading to increased work burden, inadequate knowledge of Infection prevention measures by health care providers coupled with negative attitude towards infection prevention Practices and inadequate supervision of health care providers by their superiors. Other causes include; inadequate training and provision of Infection Prevention guidelines.

Nosocomial infections due to poor infection practices have several effects on the patient as an individual, the family, the community and the health care system. These effects include;

- Prolongs the patient's stay in the hospital.
- Affects the family's income as they will incur more opportunity costs for extra days that their loved one will be hospitalised.

- Reduced community participation by the affected family.
- Demoralised staff over increased workload.
- Increased expenditure of payment of part time staff
- Increased laboratory workload
- Increased infection prevention workload
- Increased pharmacy costs such as antibiotics and other Medical-Surgical supplies
- Stigmatization of hospital and units

To address the above mentioned problems, the hospital administration at the three study location have taken up steps to form the Infection Prevention Committee. These Committees look into the issues of Infection Prevention in the Hospital.

At Kafue District Hospital, there is an Infection Prevention Committee which is headed by the Environmental Health Technician. Other members of the committee are heads of different Hospital Departments. The committee promotes capacity building by conducting refresher courses for its members of staff. In addition, the hospital allocates money on a monthly basis towards infection prevention activities and purchase of protective materials. This committee spearheads the implementation of Infection Prevention Practices. At Nchanga South Hospital in Chingola, the Infection Prevention Committee is headed by the Infection Prevention Nursing Officer. All wards in charges are members of this committee. At Maina Soko Military Hospital infection prevention committee is headed by the medical doctor.

Despite all the above mentioned measures, KDH, NSMH and MSMH have continued recording high incidences of post operative wound infections as indicated above.

Therefore, this study was necessary in order to understand the knowledge, attitude and practice of infection prevention measures among the Health Care Providers at KDH, NSMH and MSMH.

The was done by conducting the study which aimed at determining the knowledge, attitudes and practice as well as factors which may deter the health care providers from practising appropriate Infection Prevention Measures.

1.3 ANALYSIS OF INFLUENCING FACTORS

1.3.1 DESCRIBING THE FACTORS

Factors associated with knowledge, attitude and practice of infection prevention among health care providers.

1. **SOCIO-CULTURAL FACTORS**

Knowledge

Knowledge is acquiring of information, understanding and skill that one gains through education or experience (Oxford, 2010).

Health care providers both professional and non-professional should be imparted with knowledge and skill in infection prevention. If they have adequate knowledge, they will be able to apply their knowledge to practice infection control measures because they understand the importance of preventing nosocomial infections.

However, if knowledge is inadequate, health care providers will not be able to prevent cross infection, there by compromising patient's recovery and increasing the disease burden.

This knowledge can be acquired through training in Infection Prevention workshops, seminars and ward/ departmental presentations.

Attitude

These are opinions or general feelings of health care providers about infection prevention.

When health care providers have positive attitudes towards infection prevention, they will follow the Standard Precautions.

If health care providers have negative attitudes, they will act irresponsibly at work and develop non-care attitudes towards Infection Prevention practices. They will not see the value of carrying out the correct infection control measures even if they are knowledgeable about them and have the resource to use.

Bad attitude will also result in inadequate knowledge and interest in learning about infection prevention measures.

Motivation

These are factors which make health care providers develop interest, enthusiasm or commitment towards infection prevention measures.

If health care providers are well motivated through training, workshops and rewards, they will be able to apply the acquired Infection Prevention knowledge. On the other hand, when health care providers are poorly motivated they will not be able to apply proper IP measures.

Education levels

Health care providers have different education levels. Professionals undergo formal training where infection prevention is included in the curriculum. Non-professionals only rely on knowledge gained from Infection Prevention training, workshops and work experience. The difference in education levels compromises the application of infection prevention measures.

Peer pressure

The Health care professionals, especially the newly qualified may be influenced by those who have been in service for a longer period. This will hinder them from applying the knowledge that they acquire from training schools.

2. SERVICE RELATED FACTORS

Human Resource

In health institutions the hospital policy must limit the Nurse-patient ratio as it is essential to the provision of quality health care. The International Council of Nurses (ICN) Policy stipulates that, the Nurse- patient ratio stands at 1 nurse to 6 patients. In strategic Departments, such as, the Intensive Care Unit, this can stand at 1-1 (ICN, 2OO8).

Currently on average, the Nurse patient ratio at the study sites stands at 1-30. This situation is due to critical shortage of nurses due to brain drain. This situation encourages patient's relatives to carry out nursing procedures on their loved ones. The public views this as nurses abdicating their roles. Chanda (2004), reiterated that using patients' relatives as an extra pair of hands encourages transmission of infections from relative to patient and vice versa, thus compromising nursing care.

This critical shortage of Health Care Providers results into work overload. Excess workload prevents Health Care Providers form observing Infection Prevention Measures.

Stress

Work overload due to shortage of staffing will subject health care providers to stress. If health care providers are stressed, they will be unable to apply infection prevention precaution measures effectively (Chanda, 2004).

Reinforcing factors

These are factors that facilitate the practice of infection prevention measures in health institutions. They include the provision of medical and nursing care items, availability of running water, hand washing basins, elbow operated taps, and foot operated bins and autoclaving machines.

Inadequate or non-availability of the above reinforcing factors will increase the chance of cross infection in clinical settings.

However, availability of the reinforcing will enable health care providers to apply standard precaution measures effectively (ibid).

Infection prevention guidelines and policies

Hospital management staffs are required to institute infection prevention guidelines and policies in health institutions. Printouts of the guidelines should be placed in areas where they are visible for health care providers to refer to.

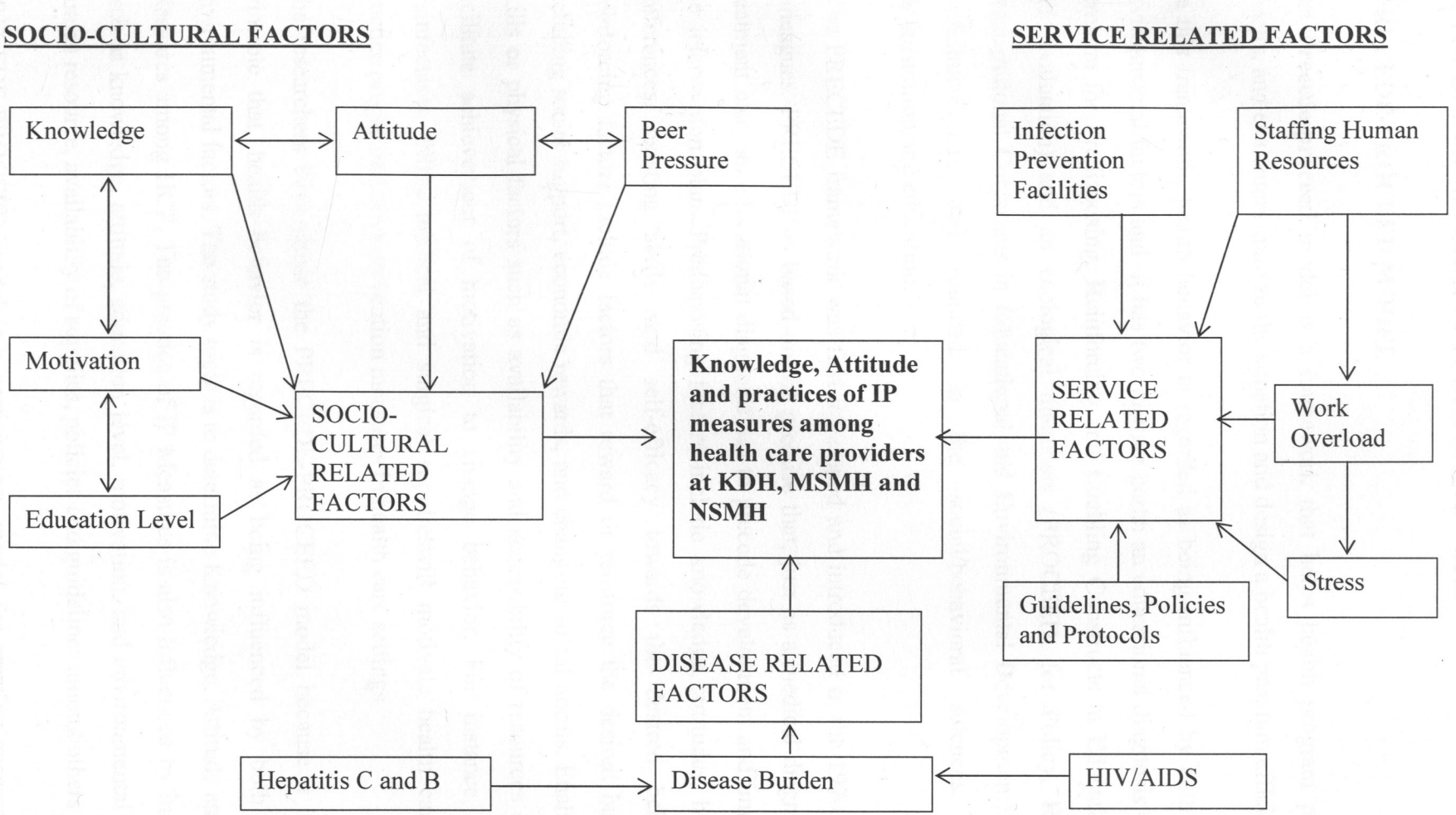
Lack of infection prevention policies and guidelines will increase the risk of cross infection in that health care providers will not have guidelines to follow when carrying out certain procedures.

However, if policies and guidelines are clearly laid down, health care providers will have guidelines to refer to when carrying out procedures.

3. DISEASE RELATED FACTORS

The advent of new diseases like Severe Acute Respiratory Syndrome (SARS) poses a challenge to health care providers in that by the time it is being confirmed and preventive measures instituted, a number of people would have been infected, for example *Lusaka-Johannesburg(LUJO)* virus where a patient from Lusaka, the nurse and the maid who accompanied her to Johannesburg were infected and died.

This could be due to the fact that it being a new disease, the mode of spread and prevention was not yet known.


SOCIO-CULTURAL FACTORS
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Disease Burden
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DISEASE RELATED FACTORS

1.4 THEORETICAL/ CONCEPTUAL FRAMEWORK

PRECEDE-PROCEED MODEL

The **Precede-proceed** model is a framework that helps health program planners, policy makers, and evaluators analyze the situation and design a health program efficiently.

In this framework, health behavior is regarded as being influenced by both individual and environmental factors and it has two distinct parts: an educational diagnosis (PRECEDE, an acronym for **P**redisposing, **R**einforcing and **E**nabling **C**onstructs in **E**ducational **D**iagnosis and **E**valuation) and an ecological diagnosis (PROCEED, for **P**olicy, **R**egulatory, and **O**rganizational **C**onstructs in **E**ducational and **E**nvironmental **D**evelopment). This model is multidimensional, and founded in the social/behavioral sciences, epidemiology, administration and education.

The PRECEDE framework was first developed and introduced in the 1970s by Green and colleagues. PRECEDE is based on the premise that, just as a medical diagnosis precedes a treatment plan, an educational diagnosis has to precede development and implementation of the intervention plan. Predisposing factors include knowledge, attitudes, beliefs, personal preferences, existing skills, and self-efficacy towards the desired behavior change. Reinforcing factors include factors that reward or reinforce the desired behavior change, including social support, economic rewards, and changing social norms. Enabling factors are skills or physical factors such as availability and accessibility of resources or services that facilitate achievement of motivation to change behavior. For instance, availability of disinfectants, PPEs, medical and surgical supplieswill motivate health care providers to practice proper infection prevention measures in health care settings.

The researchers have chose the PRECEDE-PROCEED model because it is based on the principle that, health behavior is regarded as being influenced by both individual and environmental factors. The study topic is to determine Knowledge, Attitude and Practice of IP Measures among HCP. The practice of IP Measures is also influenced by individual factors such as knowledge, attitude, education level, motivation, and environmental factors such as human resource, availability of supplies, policies and guidelines among others

PRECEDE-PROCEED model is a participatory model for creating successful community health promotion and other public health interventions. It is based on the premise that

behavior change is by and large voluntary. This makes it to be an appropriate model in our study as practice of infection prevention measures is really participatory by both HCP and management. IP programs are more likely to be effective if they are planned and evaluated with the active participation of management and HCP who will have to implement them and others who would be affected by them (HCP and clients).

1.4.1 DESCRIPTION OF PREDICTED RELATIONSHIP

KNOWLEDGE

If Health Care Providers have adequate knowledge on Infection Prevention guidelines, they will have positive attitudes towards Infection Prevention practicess because they understand the consequences of not following the Infection Prevention guidelines.

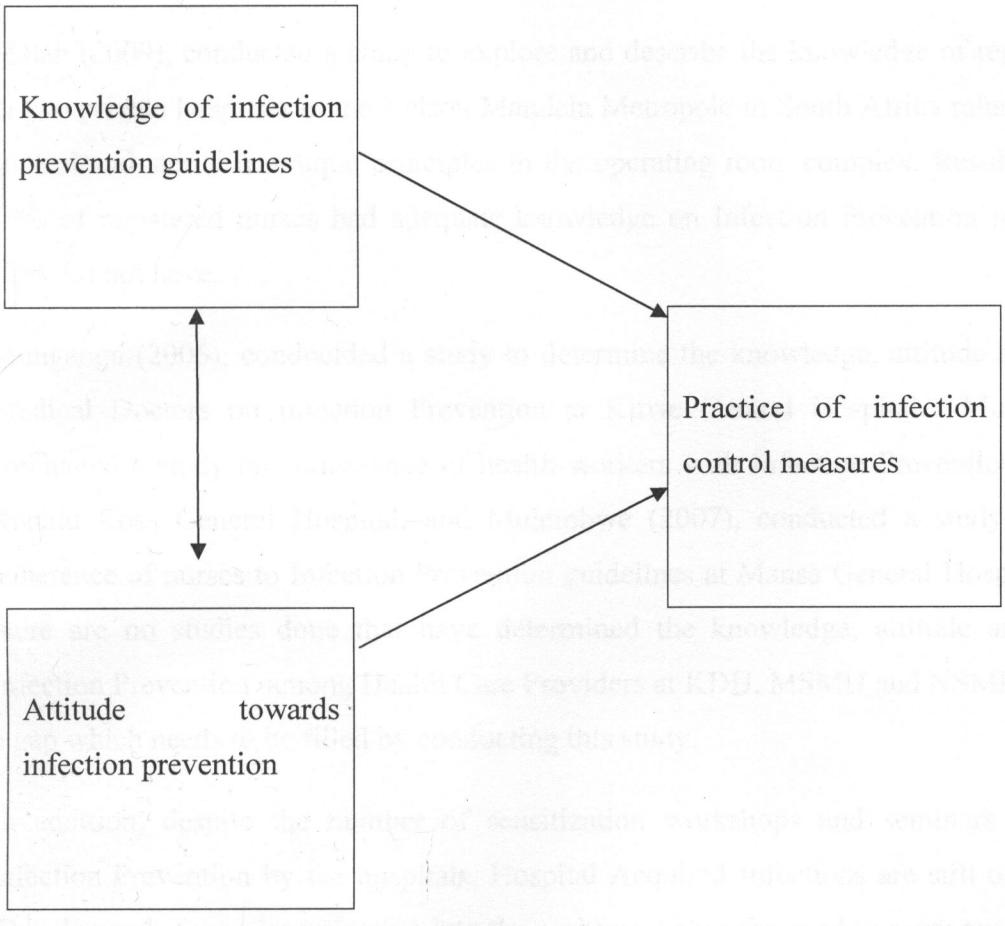
However, if HCP have inadequate knowledge on IP guidelines, they may have negative attitude towards IP practices because they do not understand the consequenses of not following IP guidelines.

ATTITUDE

If HCP have positive attitude towards IP they will follow the standard precautions of IP. Good attitude will lead to acquisition of more knowledge among HCP in IP.

On the other hand,if HCP have negative attitude towards IP, they will not follow the IP standard precautions resulting into high chances of cross infection. Bad attitude will also result in lack of knowledge leading to poor practices of IP.

1.4.2 DIAGRAM OF FRAMEWORK



1.5 JUSTIFICATION

The researchers have been prompted to carry out this study because various studies done on Infection Prevention have focused on issues other than the knowledge, attitude and practice of Infection Prevention among Health Care Providers. Different studies have been conducted in many hospitals to assess infection control practices among nursing staff.

A survey was carried out in Chicago in 2004, to determine the level of knowledge, beliefs and actual practice of neonatal ICU HCP regarding nosocomial infection and only 31% of respondent knew the recommended duration for hand washing (Kennedy et al,2004).

In another study by Elaziz and Bakr (2009), an assessment of KAP of hand washing among HCP Ain Shams University Hospital in Cairo. The knowledge score was higher in nurses compared to doctors (43% versus 39%).

Malan (2009), conducted a study to explore and describe the knowledge of registered nurses in two private hospitals in the Nelson Mandela Metropole in South Africa related to infection control and sterile technique principles in the operating room complex. Results showed that 89% of registered nurses had adequate knowledge on Infection Prevention measures while 11% did not have.

Munganga (2006), conductded a study to determine the knowledge, attitude and practice of Medical Doctors on Infection Prevention at Kitwe Central Hospital, Mukwato (2007), conducted a study on compliance of health workers with Infection Prevention guidelines at Ronald Ross General Hospital, and Mulembwe (2007), conducted a study to assess the adherence of nurses to Infection Prevention guidelines at Mansa General Hospital. However, there are no studies done that have determined the knowledge, attitude and practice of Infection Prevention among Health Care Providers at KDH, MSMH and NSMH thus creating a gap which needs to be filled by conducting this study.

In addition, despite the number of sensitization workshops and seminars conducted on infection Prevention by the hospitals, Hospital Acquired Infections are still on the increase. This demands for an investigation into the problem, hence the need to carry out this study.

The findings from this study will help the researchers to determine the relationship between knowledge and Attitude and how they influence the infection prevention practice. The findings will also help the researchers to make recommendations to hospital management on how to improve Infection Prevention at the Hospitals under study.

1.6 OBJECTIVES OF THE STUDY

An objective is something that you plan to achieve (Walter, 2005).

1.6.1 GENERAL OBJECTIVE:

To determine knowledge, attitude and practice of Infection Prevention measures among the health care providers in Kafue, Lusaka and Chingola Districts of Zambia.

1.6.2 SPECIFIC OBJECTIVES:

1. To determine knowledge that Health Care Providers at KDH, MSMH and NSMH have on Infection Prevention.

2. To determine the attitude of Health Care Providers at KDH, MSMH and NSMH towards Infection Prevention.

3. To establish the practices of Health Care Providers at KDH, MSMH and NSMH regarding Infection Prevention.

4. To make recommendations to hospital management on how to improve Infection Prevention at the Hospitals.

1.7 HYPOTHESIS:

Hypothesis is a tentative explanation for a phenomenon used as the basis for further investigation (Encarta, 2009). A formal statement of expected relationship between two or more variables in a specific population.

1.7.1 COMPLEX HYPOTHESIS:

As knowledge about infection prevention increases, attitude will become positive and Infection Prevention practices will improve among Health Care Providers.

1.8 CONCEPTUAL DEFINITIONS

Concepts are abstract or ideas and so can not be measured. Therefore conceptual definitions are much like dictionary definition, conveying the general meaning of a concept. However, the conceptual definition goes beyond the general language meaning found in the dictionary by defining the concept as it is rooted in the theoretical literature (Wood and Haber, 2006).

1.8.1 Knowledge

The information, understanding and skill that one gains through education or experience (Oxford, 2010).

1.8.2 Attitude

Refers to someone's negative or positive opinions or feeling about something especially as shown by their behavior (MacMillan, 2006).

The way that you think and feel about somebody or something; the way that you behave towards somebody or something that shows how you think and feel (Oxford, 2010).

1.8.3 Practice

According to oxford (2010), practice is defined as a way of doing something that is the usual or expected way in a particular organization or situation.

1.8.4 Infection Prevention

Are measures that do not only prevent the occurrence of disease, such as risk factor reduction, but also arrest its progress and reduce its consequences once established (WHO, 1984).

1.8.9 Infection

The invasion and multiplication of microorganisms such as bacteria, viruses, and parasites that are not normally present within the body (Webster, 2008).

1.9 OPERATIONAL DEFINITIONS

In order to measure the above concepts, they need to be taken to a lower level of abstraction. They need to be operationalised so that they can be measured at the operational level by asking questions.

Operational defination is the definition of concept or variable in terms of the operations or procedures by which it is to be measured for the purpose. For the purpose of this study the following terms have been operationally defined as will be used in this study.

1.9.1 Knowledge:

Having facts about the causes ofinfection, the importance of applying the standard precautions and the consequences of not observing infection prevention measures.

TABLE 1: VARIABLES AND CUT OF POINTS

VARIABLE	INDICATORS	CUT OFF POINTS	QUESTION NUMBERS
INDEPENDENT VARIBLES			
KNOWLEDGE	**High level** When the respondent is able to define Infection Prevention, state the universal precautions, mention the advantages of infection prevention, list some items that are required for IP and mention the colour codes of bin liners in relation to refuse disposal.	A score of 23-32 correct responses out of 22 knowledge questions.	8-29
	Moderate When the respondent is able to define Infection Prevention, state few universal precautions	Score of 11-22 correct responses out of 22 knowledge questions	

	Low level When the respondent is not able to define Infection Prevention, state few universal precautions	Score of 0-10 correct responses out of 22 knowledge questions	
ATTITUDE	**Positive** If the respondent is able to follow 50-100% of the laid down guidelines on IP and considers IP practices as beneficial to the patient, him/herself and the environment.	Score of 6-12 correct responses out of 10 attitude questions.	30-39
	Negative If the respondent does not view IP practices as beneficial and does not realise the effect of infections on the patient, the environment and him/herself.	A score of less than 50% Correct responses to questions or a Score of 0-5 out of 10 attitude questions.	
DEPENDENT VARIABLE			
PRACTICE	**Excellent** If the respondent follows	Score of 13-18 correct	40 -48

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature review is a critical summary of research on a topic of interest, often prepared to put a research problem in context or as the basis for an implementation project (Polit and Hungler, 1995).

The focus of this literature review is based on the previous studies conducted to determine the Knowledge, Attitude and practices of IP among Health Care Providers in health care setting. The review further brought out most of the studies on IP practices which have been conducted in both developed countries and developing countries. Literature Review indicates that, few studies have been conducted in developing countries as compared to developed countries on IP practices in the health care setting. The available literature still provides the general understanding on IP practices and some lesson that can be drawn from experiences from other countries.

2.2 Knowledge IP

Coughlan et al, (1996), indicated that many national bodies throughout the world had developed recommended standards for practicing Infection prevention in USA, Australia and the UK. This same report further indicated that, Worldwide, Health Care Providers are paying much attention on managing the risks related to health care delivery. The major risk faced was due to nosocomial infections. The report on the National Prevalence Survey that was done in UK in 1993 showed infection rates in hospitals to have changed little since the original National prevalence survey which was conducted in 1980.

Surveillance systems exist in some developed countries and provide regular reports on national trends of endemic HAI, such as the National Health Care Safety Network of the United States of America or the German hospital infection surveillance system. The Germany provided a general overview of the endemic burden of HAI in Africa based on the information available in the scientific literature. It also identified information gaps, examined differences in HAI epidemiology between developed and developing countries and highlighted the possible role of the World Health Organization (WHO) in preventing HAI.

Another study that was done in the United States on Nosocomial Infection Control found that about one third of all nosocomial infections could be prevented when effective infection control measures were put in place. A breach in infection prevention measures promotes the

transmission of infection from patients to the health care providers and to other patients (Smeltzer and Bare, 2000).

A Welsh study evaluating hospital cleaning regimes and standards argues that there is no doubt that environmental surface can act as a source of pathogens which can give rise to nosocomial infections. The research demonstrated that there is need to have rigorous standards for cleaning, to control infections in the health care facilities.

A report released by Britain's National Audit Office also revealed that infections in hospitals affect 100,000 people each year, costing the National Health Service (NHS) approximately £1 billion to treat. These hospital-acquired infections are primarily responsible for killing 5000 patients per year and are a substantial factor in 3% or 15,000 deaths per year. Additionally, the report found that approximately one-third of hospital-acquired infections may be preventable and concluded that infection control expenditures play an important role in improving patient care and reducing costs (Murphy, 2002).

In the United States of America, a Chicago Tribune investigative report purported that in 2000, an estimated 103,000 patients' deaths were linked to hospital acquired infections and 75% causes of these infections were as a result of poor sanitary facilities, poor hand washing and unsterilized instruments which could be preventable. The Tribune also cites a US Federal Centers for Disease Control and Prevention report that deaths linked to hospital germs represent the fourth leading cause of mortality among Americans. In addition, Tribune investigators found that hospital cleaning staffs were inadequately trained and that cleaning budgets had been steadily cut by 15-20% each year, resulting in overwhelmed and overworked staff (Murphy, 2002).

Similarly, researchers in France found that environmental objects (water taps, dry surfaces, patients' mattresses) have been a major risk factor for *A. baumannii* acquisition. The *A. baumannii* outbreak was controlled by application of hygienic measures (hand washing, meticulous cleaning of the ICU and environmental controls).

Researchers from the National Institute of Infectious Disease (Spain) also found that understaffing increases the risk of patients becoming infected in hospital with the *hepatitis C virus.* Other risk factors for the spread of hospital-acquired infections such as *Methicillin*

Resistant Staphylococcal Aureas are staff shortages, patient over-crowding, inadequately trained and supervised staff, and frequent transfers of patients and staff between wards and hospitals. Britain's General Auditor reported that about 30% of hospital acquired infections might be preventable (Murphy, 2002).

In a survey to determine the level of knowledge, beliefs and actual practice of neonatal ICU HCP regarding nosocomial infections in Chicago, 31% of respondent knew the recommended duration for hand washing. Most (99%) HCP knew that hand washing prevents nosocomial infection .Majority of the respondents (76%) reported wearing gloves, 81% reported routine hand washing. Most of the respondent, (93%) believe HCP can affect the outcomes of patients with nosocomial infections. Their results support the notion that high levels of knowledge and belief did not necessarily lead to optimal infection control practices in that population (Kennedy et al,2004).

In a study by Elaziz and Bakr (2009), an assessment of KAP of hand washing among HCP Ain Shams University Hospital in Cairo, A cross sectional descriptive and observational study was conducted for 6 months from June till November 2006. Knowledge and attitude of HCP towards hand hygiene was done through self-administered question to HCP in 10 different departments. The total opportunities observed were 2189 opportunities. The knowledge score was higher in nurses compared to doctors (43% versus 39%).

Malan (2009) conducted a study to explore and describe the knowledge of registered nurses in two private hospitals in the Nelson Mandela Metropole in South Africa related to infection control and sterile technique principles in the operating room complex. Results showed that 89% of registered nurses had adequate knowledge on Infection Prevention measures while 11% did not have. The researcher then made recommendations for changes to be made to the existing infection control guidelines in the operating room complex.

In a study conducted by kawanje (1995) on the factors influencing infection control at UTH by Hospital Auxiliary Workers, it was found that knowledge contributed to understanding of the importance of infection control. Among those that did not have any formal education only 2% knew that importance of infection control was to prevent transmission of infection to the fellow workers, while 69% of those who had primary education had some basic understanding of the importance of infection prevention.

that majority (74%) of respondents had negative attitude towards infection prevention practices while only 26% had positive attitude.

2.4 Practice

Practice is the actual doing of something (Quirk, et al 1987).This section looks at how health workers practice IP. This section also looks at studies done by people on how health workers practice IP.

Nichols (2007), stated that owing to the fact that wound infection may be induced, such as, by not applying infection control and sterile technique principles in the operating room complex, it is imperative to implement infection control principles and apply sterile technique principles. Infections are a major source of morbidity and cause of mortality during the post-operative phase for patients. Wound infections are the second most commonly encountered type of nosocomial (hospital-acquired), infection in the United States. The researcher noticed that some of the sterile technique principles were not carried out in the operating room complex which lead to the necessity to assess the knowledge of registered nurses' regarding the implementation of infection control and sterile technique principles.

An article entitled historical perspective on hygiene (WHO,2009), says that in 1984 Ignaz Semmelweiss became the first doctor to give specific orders to all students to scrub their hands in chlorinated lime before every patient contact and particularly after leaving the autopsy room. He believed that disinfection of hands could break the transmission of diseases from cadaver to pregnant women. Following the implementation of this measure, the mortality rate fell drastically from16% to 3% in the clinic most affected and remained low thereafter.

Philip et al (2008) states in a study that was conducted in the United States of America on the Efficacy of Nosocomial Infection Control revealed the effectiveness of a hospital
Infection control program that applies standard surveillance and control measures. The major elements leading to a hospital acquired infections are the infectious agent, a susceptible host, and a means of transmission. These elements are present in Long Term Care Facilities (LTCFs) as well as in hospitals.

Some studies of facilities from Maryland and New England in the mid-1990s and Michigan in 2005 noted increasing gains in time spent on infection control activities from 1994 to 2005. In New England, 98% of facilities had a person designated to do infection control, 90% were registered nurses, and 52% had formal training in infection prevention practices.

Following an intervention to prevent HAI, an Algerian study reported a decrease in HAI prevalence from 9.0% in 2001 to 4.0% in 2005. In this study, surgical site infection was the most common type of HAI from 2002 to 2004, whereas urinary tract infections and hospital-acquired pneumonia were the most common HAIs in 2001 and 2005, respectively. In a study from Nigeria, the implementation of an infection control programme in a teaching hospital succeeded in reducing the rate of HAI from 5.8% in 2003 to 2.8% in 2006 (Nejad et al, 2011).

Studies that were conducted in Africa specifically in Egypt, Malawi, Mozambique, and South Africa on infection control guidelines and effectiveness of multifaceted infection control measures revealed high rates of HAI. This was associated with bad antibiotic prescribing practices, poorly functioning laboratory services, lack of surveillance data, overcrowding of facilities, insufficient numbers of HCP, increased bed numbers, nurse to patient ratios, sub-optimal design or construction of buildings, poor water and sanitation systems (Hussein et al, 2011).

Another study was done by Chanda (1995) on the role of Operational Research in Needle – Stick Prevention at the University Teaching Hospital in Lusaka, revealed that the magnitude of sharp injuries is quite high in the institution. A total of 59% of the interviewees had sustained needle-stick injuries within the year. Injuries were common among those who recapped the needles. About 82% Doctors and more than 67% nurses who recapped the needles sustained needle-stick injuries. 39% out of 33 Porters and Maids sustained injuries from needles and blades. This indicates that good practice is important in prevention of infection.

Munganga (2007), quoting Muchemwa (1996) on the study done at Kitwe Central Hospital to examine the practice of Nurses towards IP practices revealed that all the nurses both experienced and inexperienced had some basic understanding of the IP practices. The study also revealed that majority of the experienced nurse's practiced correct IP practices than those who were less experienced. It also revealed that 74% of the respondents had a positive attitude towards IP practices while 26 % had a negative attitude. This study further revealed

that out of the 74% respondents with a positive attitude 42% practiced the correct IP practices and 32% did not. Out of the 26% respondents with negative attitude 18% practiced incorrect IP practices while 8% practiced the correct IP practices. The statistics shows that negative attitude towards work affect the standard of practice.

The above study is supported by Miyanda (2009) in Mongu, on Knowledge, Attitude and Practice among Traditional Birth Attendants revealed that 36% of the respondent had moderate knowledge, 40% had negative attitude and 60% had poor practice.

2.5 Conclusion

It can be seen from the literature review that knowledge is important when it comes to IP practices. Although many health care providers have the knowledge on IP, they are not practicing as they are supposed to due to various reasons. Different categories of health care providers are likely to practice IP differently. Most of the health care providers seem to have a positive attitude as far as IP is concerned. HCP practising of IP does not collerate with the information they have as it is reported that their IP practice is low.

It is therefore the duty of all management personnel in health care setting facilities to ensure that HCP working in health facilities are sensitised on the importance of hand hygiene as well as providing them with training in IP.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

Research methodology refers to the development, testing and evaluation of data collection instruments, or techniques used in research investigation (Wood and Haber, 2006). This study was aimed at determining knowledge, attitude and practices of infection prevention among health care providers at Kafue District Hospital, Nchanga South Mine Hospital and Maina Soko Military Hospital.

3.1 RESEARCH DESIGN

According to Burns and Grove (2009) research design is the blue print for conducting the study that maximises control over factors that could interfere with the validity of the findings. Descriptive study is one in which the data is collected to define or describe some group or phenomena, (Polit and Beck, 2008). In this study the data concerning the knowledge, attitude and practices of infection prevention among health care providers was systematically collected and then an analysis was carried out. The cross sectional type of descriptive study was used because it is cheap and it can be done within a short period of time.

3.2 RESEARCH SETTING

A research setting is the "physical location and conditions in which data collection takes place in a study" (Polit and Beck, 2008). The study was conducted at Kafue District Hospital, Nchanga South Mine Hospital and Maina Soko Military Hospital in Lusaka and on the Copper belt respectively.

Kafue District Hospital is situated in Lusaka Province, about 50 kilometers on the southern part of Lusaka city. It was built in between 1996 and 2002 by the Kafue community with help from various stakeholders. Upon completion, it was handed over to the Government of Zambia and the Ministry of Health took over the running of the hospital in october 2003.

The research was conducted from all the departments of the hospital. This is because the researcher wanted to have a wider selection of participants to meet the required target.

Nchanga south mine hospital is managed and funded by the Konkola Copper mines PLC (KCMPlc) in Chingola a town located on the Copper Belt province of Zambia with a population of more than 200,000 people. The hospital is privately owned and is one of the two

hospitals in Chingola, the other being Government owned. Although the hospital is privately owned by the mining company, it does offer services to the local population in addition to its employees. The hospital has approximately 200 bed capacity.

Nchanga South Hospital serves a catchment area of about 300,000 miners and their families. The facility is also open to non-miners who can access it at a fee. The research was conducted from maternity, Medical, Surgical, Pediatrics, Gynaecology, Laboratory, Physiotherapy, Radiology, Ophthalmic, Theater, Counseling and Testing Department where blood is drawn using needles. These departments were selected because patients stay longer and they are at a higher risk of contracting and transmitting nosocomial infection compared to other departments like X-ray were they spend few minutes.

Maina Soko Military Hospital (MSMH) is situated in woodlands area in Lusaka city. It is the referral hospital for Defence force. It caters for service personnel, their spouses and registered dependants from Zambia Army, Zambia Air Force (ZAF), Zambia National Service (ZNS), Senior Police Service Officials and Senior Government officials.Most of the health workers at MSMH are service personnel from Zambia Army, ZAF and ZNS with a few civilians under Ministry of Defence. The hospital has approximately 70 bed capacity. Research participants for KDH and MSMH were selected from all the departments of the hospital. This is because the researchers wanted to have a wider selection of participants to meet the required target.

The three hospitals offer Medical, Surgical, Gynaecological/Obstetrics and Paediatrics services. It also provides laboratory, radiological, ultra sound, physiotherapy and dental services. Other services include; Counseling, Testing and Care (CTC), HIV and AIDS, TB,STI /STI/ART prevention care and treatment. In addition, NSMH and MSMH offers Urology, Endoscopy, Haemodialysis and Ophthalmology respectively.

3.3 STUDY POPULATION

The term population refers to the entire number of units under study or the whole or all the inhabitants (CSO, 2010). The study comprised of all health care providers both professionals and non- professionals from Kafue District, Nchanga South Mine and Maina Soko Military Hospitals. This population was targeted because they were in contact with the majority of patients attended to at the institutions and their Infection Prevention practices could either minimize or perpetuate the transmission of nosocomial infections.

Some of the advantages of a using questionnaire include, a relatively simple method of obtaining data.

It is a rapid and efficient method of gathering information.

It is inexpensive to distribute.

Some of the disadvantages include:

Inability to probe on a topic and some items may be misunderstood. Also the printing of the questionnaire could be quiet expensive, especially if the questionnaire is lengthy. The study respondent may choose not to answer some questions.

The above disadvantages were minimised by reducing the length of the questionnaire, printing only a few copies then photocopying the rest of the questionnaires and giving clear instructions to the respondents.

3.7 DATA COLLECTION TECHNIQUE

This is the description of how data was collected. Polit and Beck (2008) define data collection technique as a procedure of collection of data needed to address a research problem. Before distributing it to the respondents the questionnaires were checked and tested for validity, reliability and completeness to ensure collection of correct data. In this study, questionnaires were administered by the investigator. The procedure was as follows:

1. We introduced ourselves to the respondents.
2. The purpose and instructions of the study was explained to the respondents.
3. Confidentiality and anonymity was assured to the respondents and that serial numbers were used on the questionnaires and not their names. This enabled them to participate in the study freely and without fear.
4. The questionnaires were collected within a period of two weeks
5. The study respondents were thanked for their time.

3.8 PILOT STUDY

According to Basavanthappa (2006), a Pilot study is a mini study conducted before the major study in order to detected flaws and make revisions in the methodology. The purpose of the pilot study was to obtain information for improving the instrument or assessing the feasibility of the study. The pilot study was done at Railway Clinic in Kafue District. A pre-test on the

data collection tools was also be done with the aim of determining practicability, reliability and validity of the data collection tools. The appropriateness and clarity of the language used in constructing the questionnaire and the duration for each interview was also determined.

No changes were made to the tool during and after the pilot study. A total of 15 respondents were selected which made 10% of the sample size of 150.

3.9 VALIDITY

Validity is the degree to which an instrument measures what is supposed to be measured (Polit and Beck, 2008). To evaluate the adequacy of the research design, internal and external validity were assessed. Validity in the study was upheld by using the same data collection instrument on all the respondents in the same way and the respondents were subjected to the same questions. This was done after pre-testing the questionnaire.

Internal validity

Internal validity concerns the extent to which solutions can be drawn about the causal effects of one variable on another. Internal validity is high if we are sure that our interventions rather than extraneous factors may have the desired effects. Same questions were asked to all respondents so as to ensure consistency.

External validity

This is concerned with the extent to which research findings can be generalised beyond the sample of research participants tested. External validity was used to generalize the findings of research to other Hospitals. In this study, validity was measured by conducting a pilot study at Railway clinic.

3.10 RELIABILTY

According to Polit and Beck (2008), reliability is the degree of the consistency or accuracy with which an instrument measures the attribute it is designed to measure. The two basic sources of inaccuracy that may be present are deficiency in the instrument and inconsistency in taking readings from the instrument. The reliability of the study was expected to be achieved by taking a pilot study at Railway clinic. This helped to test the degree of accuracy with which the tool can measure the knowledge, attitude and practice of infection prevention among health care providers in all the three study locations.

CHAPTER FOUR

4.0 DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 DATA ANALYSIS

Data analysis is the process of categorizing, scrutinizing and cross checking the research data (Basavanthappa, 2007). The purpose of data analysis, regardless of the type or underlying research tradition, is to organize, provide structure, and elicit meaning from the research data (Polit and Beck, 2006).

Data was collected from respondents using self administered questionnaire. A total of 150 respondents participated in the study. The study was conducted at MSMH, KDH and NSMH.

The interview schedules used were counted to ensure that the correct number was obtained. They were checked for accuracy, completeness and internal consistence. The data analysis method used was quantitative for the closed ended questions and qualitative for a few open-ended questions.

4.1.1 Quantitative data

Quantitative data is the information collected in the course of the study that is in a quantified or numeric form (Polit and Beck, 2006). The data was analyzed by creating codes that were entered on the spreadsheet using SPSS. The responses were counted and then aggregated and percentages were calculated using the SPSS into total numbers and percentages.

4.2 PRESENTATION OF FINDINGS

4.2.1 This chapter contains the findings of the study which are presented in the form of tables pie charts and bar charts.

4.2.2 The findings of the study from the quantitative data are presented using frequency tables, pie charts, bar charts and cross tabulation. The tables are suitable because they summarise the findings in meaningful ways which is easy to understand. The cross tabulation are helpful in showing the relationship between the knowledge, practice and attitude from which many inferences can be drawn. These were found to be more appropriate because they

are easy to interpret and they offer one with a rough idea and picture about the findings even before they read the findings.

The section consists of five areas. Section A looks at the demographic variables that were included in the study. Section B looks at the knowledge of respondents and responses are presented in different frequency tables, pie charts and bar charts. Section C looks at attitude of Health Care Providers towards infection prevention guidelines. While section D looks at practice of infection prevention measures among HCP. Section E (cross tabulations) looks at the relationship between the three variables, namely; Knowledge, attitude and practice. In total there are 23 frequency tables, 13 cross tabulations, 5 pie charts and 3 bar charts to highlight the data collected.

SECTION A

4.2.2 BACKGROUND INFORMATION ON RESPONDENTS

TABLE. 2: DEMOGRAPHIC DATA (n=150)

VARIABLE	FREQUENCY	RELATIVE FREQUENCES (%)
SEX		
Male	63	42%
Female	87	58%
TOTAL	150	100%
AGE		
18 - 29 years	19	12.7%
30 - 39 years	59	39.3%
40 -49 years	32	21.3
50 years and above	40	26.7%
TOTAL	150	100%
MARITAL STATUS		
Never Married	38	25.3%

Married	94	62.7%
Divorced	4	2.7%
Widowed	14	9.3%
TOTAL	150	100%
RELIGION		
Christian	150	100%
Muslim	0	0%
Hindu	0	0%
None	0	0%
Others	0	0%
TOTAL	150	100%
YEARS OF EXPERIENCE		
Less Than 1 Year	6	4%
1 - 5 Years	37	24.7%
6 - 10 Years	34	22.7%
More Than 10 Years	73	48.6%
TOTALS	150	150%
PROFESSION		
Doctor	5	3.3%
Nurse	94	62.7%
Para Medic	30	20%
CDEs	11	7.3%
Others	10	6.7%
TOTAL	150	100%

More than half, 58% (87) of respondents were females while 42% (63) were males.

Majority 39.3% (59) of the respondents were aged between 30-39 years, 26.7% (40) were 50 years and above, 21.3% (32) aged between 40-49 years and 12.7% (19) were aged between 18-29 years.

Most 62.7% (94) of respondents were married, 25.3% (38) were never married, 9.3% (14) were widowed, and 2.7% (4) were divorced.

All the 100% (150) respondents were Christians.

Almost half 48.6% (73) of the respondents had more than 10 years working experience, 24.7% (37) had 1-5 years, 22.7% (34) had 6-10 years and 4% (6) had only worked for less than 1 year.

Most 62.7% (94) were nurses, 20% (30) were paramedics, 7.3% (11) were Classified Daily Employees, 6.7% (10) were other professionals like psychosocial counsellors and 3.3% were Doctors.

SECTION B

KNOWLEDGE

FIGURE 1: SOURCE OF INFORMATION ON IP

(n=150)

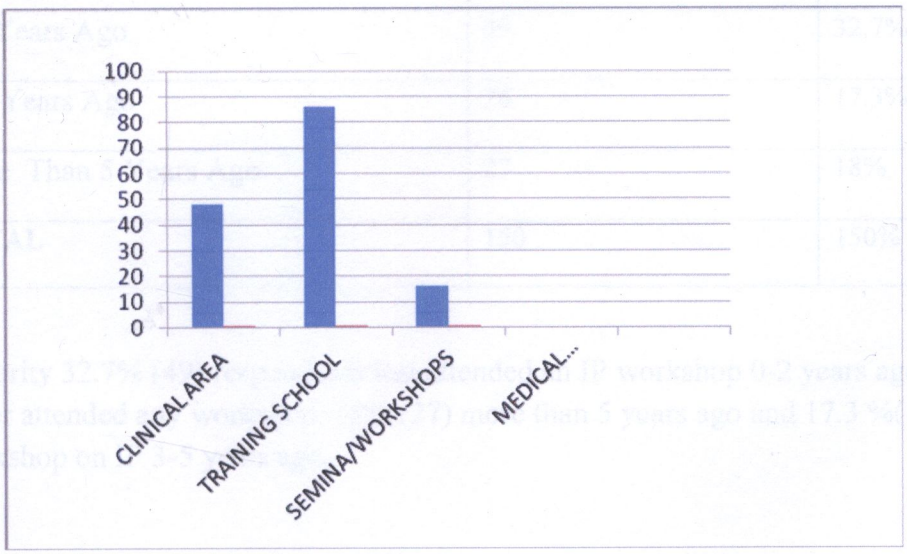


Figure 1 revealed that more than half 57.3% (86) of the respondents heard about IP from the training school, 32% (48) from the clinical area, 10.7% (16) from seminars/ workshops and none of the respondents heard about IP from medical books or journals.

TABLE 3: DEFINITION OF INFECTION PREVENTION (n=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Elimination of Infection	18	12%
Reduction of Infection	21	14%
Control of Infection	111	74%
Others	0	0%
TOTAL	150	100%

Almost three quarters 74% (111) of the respondents defined IP as control of infection, 14% (21) as reduction of infection and 12% (18) as elimination of infection.

TABLE 4: LAST ATTENDED WORKSHOP ON IP (n=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Never	48	32%
0-2 Years Ago	49	32.7%
3-5 Years Ago	26	17.3%
More Than 5 Years Ago	27	18%
TOTAL	150	150%

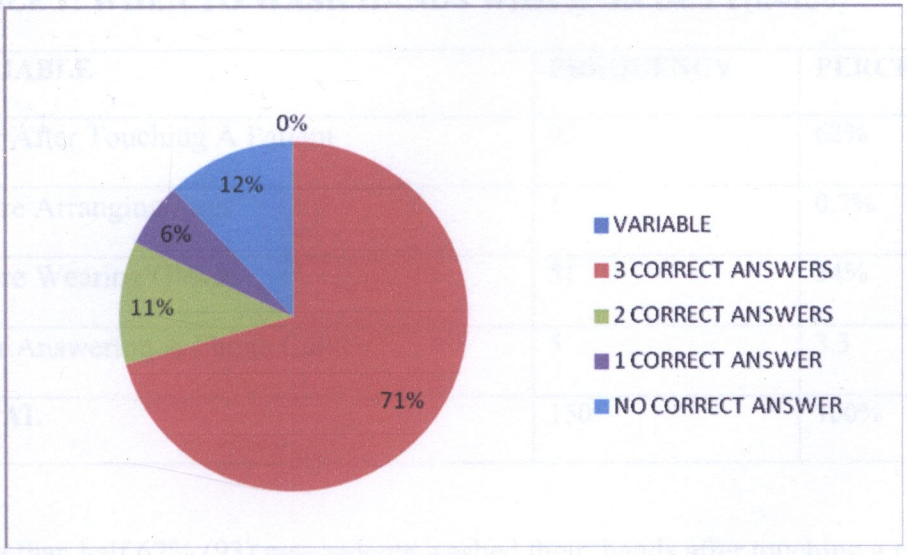
Majority 32.7% (49) respondents last attended an IP workshop 0-2 years ago, 32% (48) had never attended any workshop, 18% (27) more than 5 years ago and 17.3 %(26) last attended a workshop on IP 3-5 years ago.

TABLE 5: IP UNIVERSAL PRECAUTIONS (n=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Consider every person infectious	139	92.6%
Wash hand only when knocking off	6	4%
Wear a face mask when talking to patient	1	0.7%
Close and despose the sharpbox when it is full.	4	2.7%
TOTAL	150	100%

Most of the respondents 92.6% (139) consider every person infectious, 4% (6) wash hands only when knocking off, 2.7% (4) close and dispose the sharp box when it is full and 0.7% (1) wear mask when talking to a patient.

FIGURE 2: INFECTION PREVENTION ITEMS USED IN CLINICAL AREAS (n=150)



Majority 70.7% (106) of the study respondent gave 3 correct answers, 12% (18) gave 2 correct answers, 11.3% (17) gave 1 correct answer and 6% (9) gave no correct answer.

TABLE 6: AVAILABILITY OF INFECTION PREVENTION ITEMS USED IN CLINICAL AREAS (n=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Always	89	59.3%
Occasionally	58	38.7%
Never	3	2%
TOTAL	150	100%

More than half of respondents 59.3% (89) always had IP items , 38.7% (58) reported that they were available occasionally and 2% (3) indicated that IP items were never available in the clinical areas.

TABLE 7: WHEN TO WASH HANDS WHILE ON DUTY(n=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Only After Touching A Patient	93	62%
Before Arranging Files	1	0.7%
Before Wearing Gloves	51	34%
After Answering A Phone Call	5	3.3
TOTAL	150	100%

More than half 62% (93) respondents washed their hands after touching a patient, 34% (51) before wearing gloves, 3.3% after answering a phone call and 0.7% (1) before arranging files.

TABLE 8: DURATION OF HAND WASHING WHILE ON DUTY(n=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Less Than 1 Minute	22	14.7%
2 - 5 Minutes	93	62%
5 - 10minutes	8	5.3%
Don't Know	27	18%
TOTAL	150	100%

Majority 62% (93) washed their hands for 2-5 minutes, 18% (27) did not know how long they wash their hands, 14.7% (22) for less than 1 minute and 5.3% (8) for 5-10 minutes.

TABLE 9: WHEN TO WEAR GLOVES WHILE ON DUTY(n=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
When giving health education	0	0%
When coming in contact with body fluids	149	99.3%
When writing patients notes	0	0%
When openning the door to the ward	1	0.07%
TOTAL	150	100%

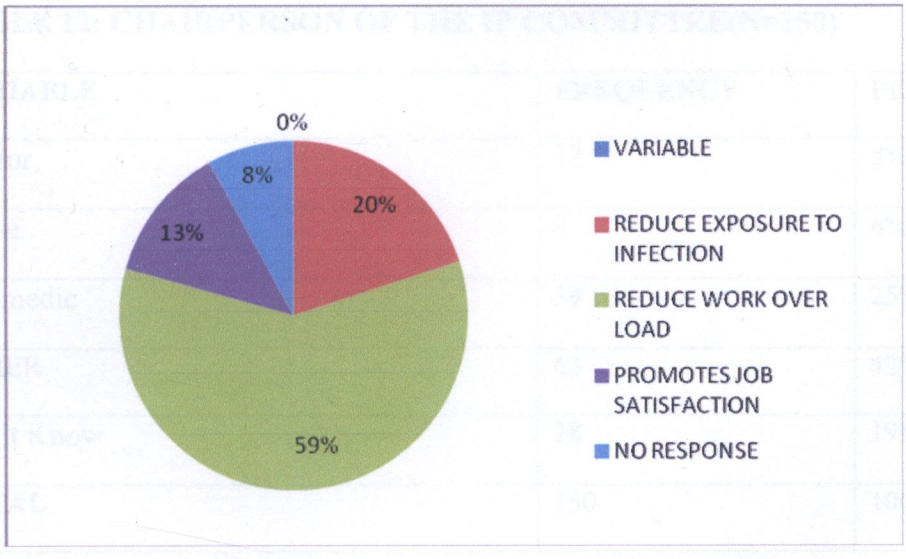
Almost all respondents, 99.3% (149) wear gloves when coming in contact with body fluids and 0.07% (1) when opening the door to the ward.

TABLE 10: ADVANTAGES OF IP TO CLIENTS (n=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Prevent nosocomial infection	32	22%
Reduce hospital stay	50	33%
Reduce mobidity and motality	44	29%
Other reasons	24	16%
TOTAL	150	100

Only 33% (50) of the respondents indicated that IP reduces hospital stay, 29% (44) indicated it reduces morbidity and mortality while 22% (32) indicated that it prevents nosocomial infection .

FIGURE 3: ADVANTAGES OF IP TO HCP (n=150).



More than half of respondents 59.3% (89) indicated that IP reduces work load, 20% (30) reduces exposure to infection, 12.7% (19) promotes job satisfaction and 8% (12) gave no response.

TABLE 11: ADVANTAGES OF IP ON THE INSTITUTION(150).44

VARIABLE	FREQUENCY	PERCENTAGE (%)
Reduce costs of drugs	76	51%
Improve quality of care provided	15	10%
Reduce infection rate	36	24%
No response	23	15%
TOTAL	150	100%

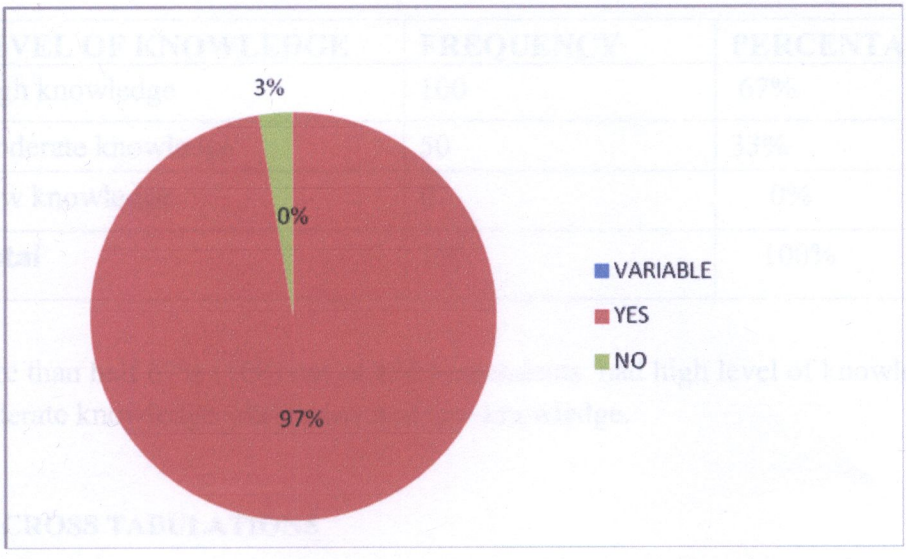
More than half of the study respondents 51% (76) gave the reason that IP reduces costs of drugs, 24% (36) indicated that it reduces infection rate, 15% (23) gave no response and 10% (15) indicated that IP improves quality of care provided.

TABLE 12: CHAIRPERSON OF THE IP COMMITTEE(N=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Doctor	12	8%
Nurse	9	6%
Paramedic	38	25%
OTHER	63	42%
Don't Know	28	19%
TOTAL	150	100%

Majority, 42% (63) indicated that IP Committee was headed by other departments such as safety, OPD, and administration among others, 25% (38) of respondents indicated that it is headed by paramedics,19% (28) did not know, 8% (12) indicated Doctors while 6% (9) gave the nursing department as the in charge of IP committee.

FIGURE 4: SUPPORT OF THE IP BY THE HOSPITAL MANAGEMENTS (n=150)



Almost all 97.3% (146) of the study respondents viewed that management supported the application of IP programme, while 2.7% (4) viewed management did not support the programme.

TABLE 13: HOW HOSPITAL MANAGEMENT SUPPORTS THE IP MEASURES (n=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
By Allocating Funds	64	42.7%
Buying Supplies	58	38.7%
Through Workshops	12	8%
Through Supervison	8	5.3%
Don't Know	8	5.3%
TOTAL	150	100%

Less than half 42.7% (64) of the respondents indicated that management supports IP allocation of funds to IP programmes,38.7% (58) through purchase of supplies, 8%(12) through other ways and 5.3%(8) through monitoring the IP programme, workshops and training respectively.

TABLE 14: MEASUREMENT OF LEVEL OF KNOWLEDGE

LEVEL OF KNOWLEDGE	FREQUENCY	PERCENTAGE	
High knowledge	100	67%	
Moderate knowledge	50	33%	
Low knowledge	0	0%	
Total	150	100%	

More than half 67% (100) out of 150 respondents had high level of knowledge, 33% (50) had moderate knowledge while none had low knowledge.

4.1 CROSS TABULATIONS

TABLE 15: KNOWLEDGE IN RELATION TO GENDER

LEVELS OF KNOWLEDGE	SEX		TOTAL
	M	F	
High knowledge	**41 (65%)**	**59 (68%)**	**100(67%)**
Moderate knowledge	**22 (35%)**	**28 (32%)**	**50 (33 %)**
Low knowledge	**0 (0%)**	**0(0%)**	**0(0%)**
TOTAL	**63 (42 %)**	**87 (58 %)**	**150(100 %)**

Majority 68% (59) out of 87 female respondents had high level of knowledge in IP and 32% (28) female respondents had moderate level of knowledge. 65% (41) out of 63 male respondents had high level of knowledge and 35% (22) male respondents had moderate level of knowledge.

TABLE 16: KNOWLEDGE IN RELATION TO NUMBER OF YEARS OF EXPERIENCE

LEVEL OF KNOWLEDGE	YEARS OF EXPERIENCE				TOTAL
	Less than 1year	1-5years	6-10years	More than 10 years	
High	**3(50%)**	**28(72%)**	19(56%)	50(70%)	100(67%)
Moderate	3(50%)	11(28%)	15(44%)	21(30%)	50(33%)
Low	0(%)	0(%)	0(%)	0(%)	0(%)
TOTAL	**6(4%)**	**39(26%)**	**34(23%)**	**71(47%)**	**150(100%)**

Majority 70% (50) out of 71 respondents with more than 10 years working experience had high knowledge levels and 30% (21) had moderate knowledge levels. 50% (3) out of 6 respondents with working experience of less than 1 year had high knowledge levels and the other 50% (3) of the same experience had moderate knowledge.

TABLE 17 : KNOWLEDGE IN RELATION TO PROFESSIONAL ATTAINMENT

LEVEL OF KNOWLEDGE	PROFFESSIONAL ATTAINMENT					TOTAL
	DOCTOR	NURSE	PARAMEDICS	CDEs	OTHERS	
High	03(60%)	64(68%)	19(63%)	07(64%)	07(70 %)	**100(67%)**
Moderate	02(40%)	30(32%)	11(37%)	04(36%)	03(30%)	**50(33%)**
Low	0(0%)	0(0%)	0(0%)	0(0%)	0 (0 %)	**(0%)**
TOTAL	05(3%)	94(63%)	30(20%)	11(7%)	10(7%)	**150(100%)**

Almost three quarters 70% (7) out of 10 respondents of other health care providers like counsellors , 68% (64) out of 94 nurses , 64% (7) out of 11 CDEs, 63% (19) out of 30 paramedics and 60% (3) out of 5 doctors had high knowledge.

SECTION C

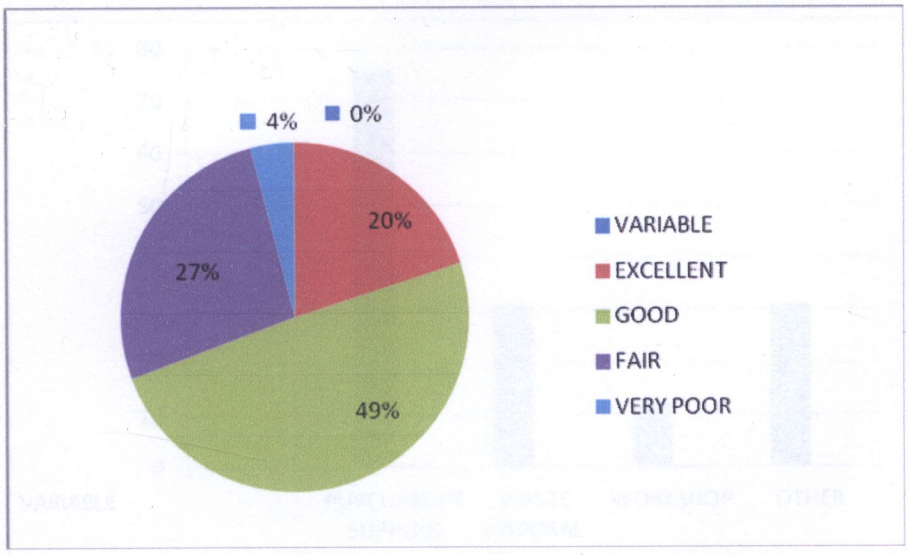
ATTITUDEs

TABLE 20: FEELINGS TOWARDS THE IMPORTANCE OF IP (n=150)

VARIABLE	FREQUENCY	PERCENTAGE (%)
Very Important	146	97.3%
Moderately Important	4	2.7%
Not Important	0	0%
TOTAL	150	100%

Majority, 97.3% (146) of the respondents felt IP was very important in the clinical area, 2% (3) felt it was fairly important while 0.7% (1) felt it was moderately important.

FIGURE 5: VIEWS OF MANAGEMENT OF IP AT RESEARCH SITES (n=150)



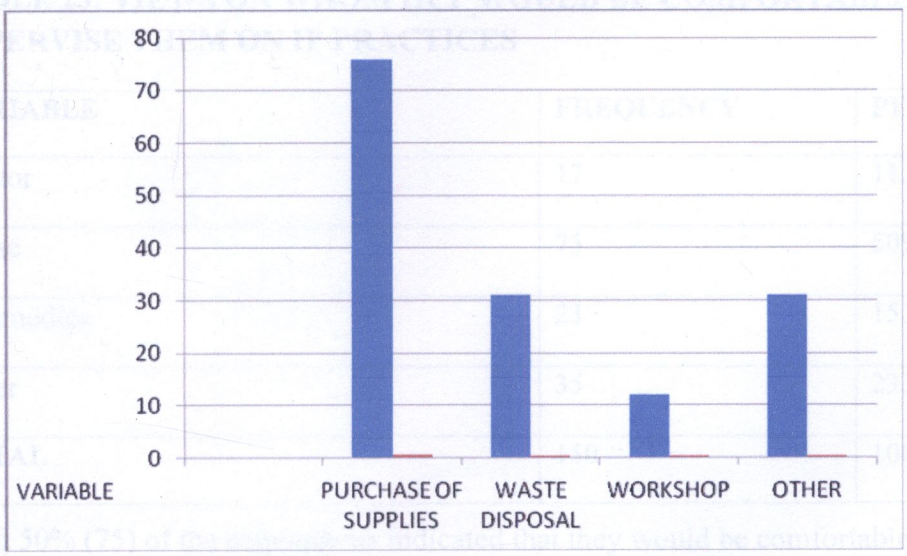
Almost half 49%(74) of the respondents viewed management of IP at their hospital as good, 27%(40) viewed it as fair, 20%(30) viewed it as excellent while 4%(6) viewed it as very poor.

TABLE. 21: REASONS FOR THE ABOVE RESPONSES

VARIABLE	FREQUENCY	PERCENTAGE (%)
Lack of Resources	63	42%
Lack of Supervision	6	4%
Adequate Supply	41	27.3%
Other	40	26.7%
TOTAL	150	100%

Majority, 42%(63) of the respondents indicated that lack of resources was the reason for their response to question 31, 27.3% (41) indicated that there were adequate supplies, 26.7% (40) indicated other reasons such as poor attitude, shortage of man power and poor waste management while 4% (6) gave lack of supervision as their reason to question 31.

FIGURE 6: AREAS OF IP WHICH NEED IMROVEMENT



Half 50% (76) respondents mentioned purchase of supplies as the area that needed improvement, 21% (31) mentioned waste disposal, another 21% (31) mentioned other areas such as theatre fumigation, provision of IP guidelines, isolation wards among others, 8% (12) mentioned that there was need for more IP training/workshops.

TABLE. 22 : REASONS FOR CONTINUING THE IP PROGRAMME

VARIABLE	FREQUENCY	PERCENTAGE (%)
Reduce On The Cost	6	4%
Reduce Motality Rate	69	46%
Improve Quality Of Care	61	41%
No Response	14	9%
TOTAL	150	100%

Table 22 showed that 46% (69) felt that reducing motality rate is a good reason for continuing the IP programme, 41% (61) felt it improved the quality of care, 9% (14) gave no response and 4% (6) felt it reduced on the costs of medical and surgical supplies.

TABLE 23: VIEWS ON WHOM HCP WOULD BE COMFORTABLE TO SUPERVISE THEM ON IP PRACTICES

VARIABLE	FREQUENCY	PERCENTAGE (%)
Doctor	17	11.4%
Nurse	75	50%
Paramedics	23	15.3%
Other	35	23.3%
TOTAL	150	100%

Half, 50% (75) of the respondents indicated that they would be comfortable to be supervised by a nurse, 23.3% (36) mentioned other professionals, 15.3% (23) paramedics, while 11.4% (17) mentioned doctor.

TABLE 24: MEASUREMENT OF LEVELS OF ATTITUDE

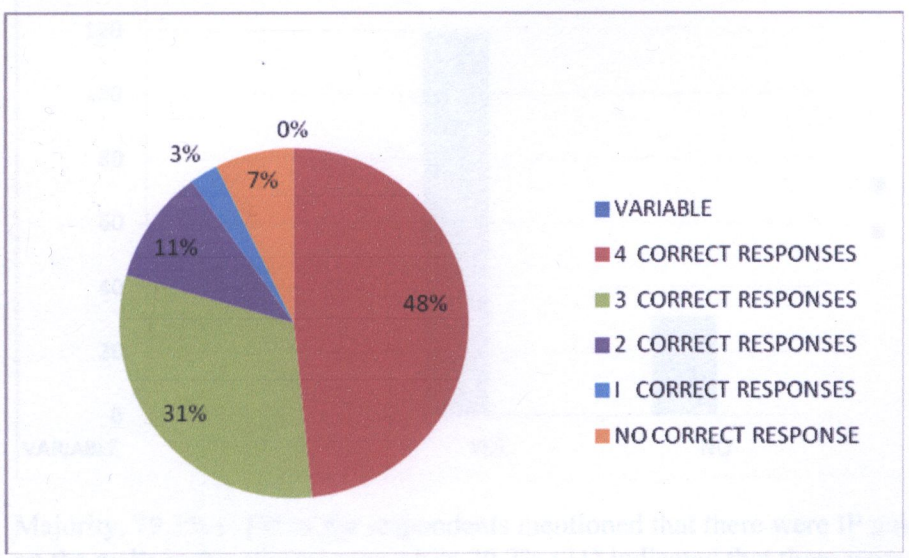
LEVELS	FREQUENCY	PERCENTAGE (%)
Positive Attitude	150	100%
Negative Attitude	0	0
TOTAL	150	100%

All 100% (150) respondents had positive attitude and none had negative attitude.

SECTION D

PRACTICE

FIGURE 7: HOW HCP APPLY IP MEASURES



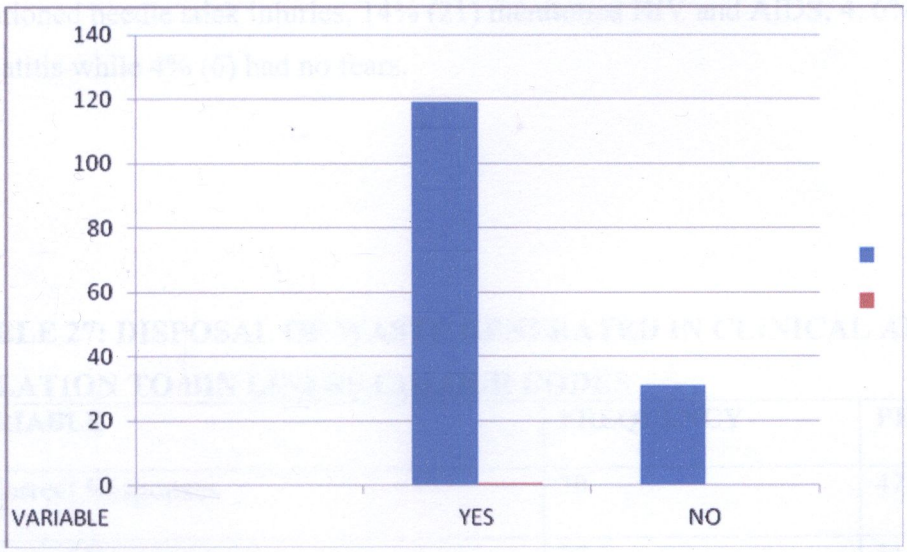
Less than half 48% (73)of the respondents gave four correct responses on ways of applying IP in the clinical area, 31.3% (47) gave three correct responses 28% (42) gave one correct response, 10.7% (16) gave two correct responses, 7.3% (11) gave no correct response and 2.7% (4) gave one correct response out of the required four.

TABLE. 25: HOW OFTEN THEY PRACTISE IP MEASURES

VARIABLE	FREQUENCY	PERCENTAGE (%)
All the time	117	78%
Occasionally	33	22%
Never	0	0%
TOTAL	150	100%

More than three quarters, 78% (117) of the respondents indicated that, they practised IP all the time, 22% (33) occasionally practised IP measures and none indicated that they never practice IP measures.

FIGURE 8: DISPLAY OF IP GUIDELINES ON THE WALLS IN CLINICAL AREAS.



Majority, 79.3% (119) of the respondents mentioned that there were IP guidelines displayed on the walls in the clinical area while 20.7% (31) indicated that there were no guidelines displayed.

TABLE. 26: GREATEST FEARS IN RELATION TO IP PRACTICE WHILE CARRYING OUT THEIR DUTIES

VARIABLE	FREQUENCY	PERCENTAGE (%)
Needle stick injury	31	20.7%
Nosocomial infections	85	56.7%
HIV/AIDS	21	14%
Hepatits	7	4.6%
None	6	4%
TOTAL	150	100%

Majority 56.7% (85) of the respondents mentioned nosocomial infections as their greatest fear in relation to infection prevention as they perform their duties on the ward, 20.7% (31) mentioned needle stick injuries, 14% (21) mentioned HIV and AIDS, 4. 6% (7) feared Hepatitis while 4% (6) had no fears.

TABLE 27: DISPOSAL OF WASTE GENERATED IN CLINICAL AREAS IN RELATION TO BIN LINERS COLOUR CODES

VARIABLE	FREQUENCY	PERCENTAGE (%)
3 Correct Responses	70	47.7%
2 Correct Responses	77	51.3%
I Correct Responses	1	0.7%
No Correct Response	2	1.3%
TOTAL	150	100%

More than half, 51.3% (77) of the respondents gave two correct responses on waste disposal in relation to colour codes, 47.7% (70) gave three correct responses, 1.3% (2) gave no correct response, while 0.7% (1) gave one correct response out of the required three.

TABLE. 28: HOW TO AVOID NEEDLE STICK INJURIES

VARIABLE	FREQUENCY	PERCENTAGE (%)
Recaping needle after use to protect CDEs	24	16%
Disposing sharps in sharp boxes	106	70.7%
Disconnecting needle from syringe after use	14	9.3%
Other	6	4%
TOTAL	150	100%

Majority,70.7% (106) of the respondents viewed needle stick injuries can be avoided by disposing sharps in sharp boxes,16% (24) by recapping needles after use to protect CDEs, 9.3% (14) by disconnecting needle from syringe after use, while 4% (6) indicated others ways.

TABLE. 29: MEASUREMENT OF LEVELS OF PRACTICE

LEVELS	FREQUENCY	PERCENTAGE
Excellent practice	4	3%
Good practice	116	77%
Poor practice	30	20%
Total	150	100%

Only 3% (4) out of 150 respondents had excellent practice, 77% (116) had good practice and 20% (30) had poor practice.

CROSS TABULATION –PRACTICE

TABLE. 30: IP PRACTICE IN RELATION TO PROFESSIONAL ATTAINMENT

LEVEL OF PRACTICE	PROFFESSIONAL ATTAINMENT					TOTAL
	DOCTOR	NURSE	PARAMEDICS	CDEs	OTHERS	
EXCELLENT	0 (0%)	3 (3 %)	1 (3 %)	0 (0%)	0 (0%)	4(2.6%)
GOOD	4 (80%)	75(80%)	19 (63%)	8 (73%)	10(100%)	116 (77.3%)
POOR	1 (20%)	16 (17%)	10(33%)	3(27%)	0 (0%)	30(20%)
TOTAL	5(3.3%)	94 (77.3%)	30(20%)	11(7.3%)	10(6%)	150(100%)

Majority 75 (80%) out of 94 nurses had good practice while 3 (3%) had excellent practice. 19 (63%) out of 30 paramedics had good practice, while 4 (3.4%) were doctors. Majority 16 (53.3%) of respondents who had poor practice were nurses, 10 (33.3%) were paramedics, 3 (10%) CDEs and 1(3.3%) was a doctor.

TABLE.31: PRACTICE IN RELATION TO SOURCE OF IMFORMATION ON INFECTION PREVENTION.

LEVEL OF PRACTICE	SOURCE OF INFORMATION				TOTAL
	Clinical Area	Training school	Seminars/workshop	0thers	
EXCELLENT	2(50%)	2 (50%)	0(%)	0(%)	4(2.6%)
GOOD	32(27.6%)	65(56 %)	19(%)	0(%)	116(77.4%)
POOR	7(23.3%)	16(53.3%)	7(23.3%)	0(%)	30(20%)
TOTAL	41(27.3%)	83(55.3%)	26(17.3%)	0(%)	150(100%)

More than half, (56%) 65out of 116 respondents with good practice of IP, gained knowledge from the training schools, 50% (2) of the respondents with excellent practice gained knowledge from the clinical area and 23.3% (7) with poor practice of IP gained their knowledge from clinical area and seminars.

TABLE. 32: SEX (GENDER) IN RELATION TO IP PRACTICE

SEX /GENDER	PRACTICE			TOTAL
	EXCELLENT	GOOD PRACTICE	POOR PRACTICE	
MALE	2(3.2%)	51(44%)	10(33%)	63(42%)
FEMALE	2(2.3%)	65(54%)	20(67%)	87(58%)
TOTAL	4(3%)	116(77%)	30(2%)	150(100%)

Majority 54% (64) out of 116 respondents with good practice of IP were female, and 44% (51) were males. Meanwhile, 67% (20) out of 30 respondents with poor practice were female. 50% (2) Females out of 4 respondents had excellent practice of IP .

TABLE. 33: IP PRACTICE IN RELATION TO WORKING EXPERIENCE

LEVEL OF PRACTICE	WORKING EXPERIENCE				TOTAL PERCENTAGE
	Less than 1year	More than 1-5 year	6-10years	10 and above	
EXCELLENT	0(0%)	2 (5.1%)	0 (0%)	2(2.9%)	4(2.7%)
GOOD PRACTICE	4(67%)	23 (59%)	29 (85.3%)	60(84%)	116 (77.3%)
POOR PRACTICE	2(33%)	14(36%)	5 (14.7%)	9 (12.8%)	30 (20%)
TOTAL	6(100%)	39(100%)	34(100%)	71(100%)	150(100%)

More than three quarters 84% (60) out of 71 respondents with 10 years and above working experience had good practice and 12.8% (9) out 71 respondents with the same work experience had poor IP Practice. There was no respondent with excellent practice with work experience ranging from 6-10 years.

TABLE.34: PRACTICE IN RELATION TO AGE

PRACTICE	AGE				TOTAL
	18- 29years	30-39years	40-49years	50 -59years	
Excellent practice	2(8%)	0(0%)	1(2%)	1(11%)	4(3%)
Good practice	16(62%)	54(79%)	40(85%)	6(67%)	116(77%)
Poor practice	8(31%)	14(21%)	6(13%)	2(22%)	30(20%)
TOTAL	26(17%)	68(40%)	47(31%)	9(6%)	150(100%)

0nly 11% (1) out of 9 respondents aged between 50-59 years had excellent practice and 8% (2) out of 26 were aged between 18-29 years. More than three quarters 85% (40) out of 47 respondents who were aged between 40-49years had good practice and 79% (54) were between 30-39 years. Less than half 31% (8) out of 26 respondents who were aged between 18-29 years had poor practice and 22% (2) were between 50-59 years.

SECTION E

CROSS TABULATIONS

TABLE 35: LEVEL OF KNOWLEDGE IN RELATION TO ATTITUDE

LEVEL OF KNOWLEDGE	ATTITUDE		TOTAL
	POSITIVE	NEGATIVE	
High	100(66.7%)	0(0%)	100(67%)
Moderate	50(33.3%)	0(0%)	50(33%)
Low	0(0%)	0(0%)	0(0%)
TOTAL	150(100%)	0(0%)	150(100%)

Majority 66.7% (100) out of 150 respondents with positive attitude towards IP had high knowledge level of IP, while 33.3% (50) out of 150 respondents with positive attitude had moderate knowledge level and none of the respondents had low knowledge levels.

TABLE 36: ATTITUDE IN RELATION TO PRACTICE

ATTITUDE	LEVEL OF PRACTICE			TOTAL
	EXCELLENT PRACTICE	GOOD PRACTICE	POOR PRACTICE	
Positive	04(2.7%)	116(77.3%)	30(20%)	150(100%)
Negative	0(%)	0 (%)	0(%)	0 (0%)
TOTAL	04(2.6%)	116(77.3%)	30(20%)	150(100%)

Majority 77.3% (116) out of 150 respondents with positive attitude had good IP practices, 20% (30) had poor, and 2.7% (4) had excellent IP practices.

TABLE 37: KNOWLEDGE IN RELATION TO PRACTICE

Knowledge	LEVEL OF PRACTICE			TOTAL
	Excellent practice	Good practice	Poor practice	
High knowledge	3(75%)	75(65%)	22(73%)	100 (67%)
moderate knowledge	1(25%)	41(35%)	8(27%)	50 (33%)
Low knowledge	0(0%)	0(0%)	0(0%)	0(0%)
TOTAL	4 (3%)	116 (77%)	30 (20%)	**150(100%)**

Three quarters 75% (3) out of 4 respondents with high knowledge had excellent practice, 65% (75) out of 116 with high knowledge had good practice and 73% (22) out of 30 had poor practice

CHAPTER FIVE

5.0 DISCUSSION OF FINDINGS AND IMPLICATIONS FOR THE HEALTH CARE SYSTEM

5.1 INTRODUCTION

The discussion of findings is based on data collected from a sample of one hundred and fifty (150) respondents. The respondents were health care providers who included doctors, nurses, paramedics, CDEs and others like psychosocio-counselors. The main objective was to determine knowledge, attitude and practice of infection prevention measures among health care providers at Kafue District Hospital, Maina Soko Military Hospital and Nchanga South Mine Hospital. Data was collected using a self administered questionnaire. The study revealed the characteristics of demographic data, the knowledge level, attitude and practice of infection prevention measures among health care providers.

5.2 DEMOGRAGHIC CHARACTERISTICS OF THE RESPONDENTS

The sample included doctors, nurses, paramedics, CDEs and others like counselors working at Kafue District Hospital, Maina Soko Military Hospital and Nchanga South Mine Hospital who work in clinical areas. Majority 39.3% of the respondents were aged between 30 and 39 years, 26.7% of the respondents were aged 50 years and above, 21.3% were aged between 40 and 49 years, while 12.7% of the respondents were aged between 18 and 29 years (table 2). More than half (58%) of the respondents were females compared to males (42%). The findings are similar to the study by Nawila (2010) in her study of knowledge, attitude and practice of on hand hygiene by health workers at Kabwe General Hospital where majority 64% of the respondents were females. Results are also similar to the study of Mulembwe (2012) in his study of knowledge, attitude and adherence of Nurses to infection prevention measures at Mansa General Hospital where 78% of the respondents in the study were female. This could be attributed to the fact that females are the majority in the health profession especially Nursing which was viewed as a feminine career globally. The other reason could be that more females are employed at hospitals as compared to males who are sent to rural areas, as majority of the females are married within town.

More than half 62.7% of the respondents were married, 25.3% were never married, 9.3% were widowed and 2.7% were divorced. This signifies the strong entrenched Zambian culture among HCP that regards marriage. This also shows that it is accepted as normal in Zambian

society. The divorced respondents were few because divorce is not accepted socially in Zambia.

All the respondents 100% were Christians because Zambia is predominantly a Christian Nation.

Majority 48.6% of the respondents had more than 10 years working experience, 24.7% had 1-5 years, 22.7% had 6-10 years and 4% had only worked for less than 1 year. Majority of respondents were in the category of those that had served for more than 10 years because during this period most of the HCP are settled in employment and there are very few who may like to get transferred out or resign to go for greener pastures.

The researchers observed that 62.7% were nurses, 20% were paramedics, 7.3% were CDEs, 6.7% were others which included counsellors and 3.3% were Doctors. The proportion of HCPs is in line with staff establishment which has seen an increase in the number of Nurses being employed in health institutions as compared to other disciplines. This could be due to the fact that more nurses are trained each year as there are many nursing schools.

DISCUSSION OF VARIABLES

5.3.1 Knowledge about infection prevention

Knowledge is information understanding and skills acquired through experience or education (Concise English Dictionary, 2006).

Knowledge is one of the factors that contribute to the HCPs' practice towards Infection Prevention measures.

The study revealed that all 100% of the respondents had heard about Infection Prevention, meaning that they had basic understanding of infection prevention. The study further indicated that the respondents who heard of IP had different sources of information on IP. Figure 1 further showed that majority of the respondents 57.3% heard about IP from the training school, 32% from the clinical area, 10.7% from seminars/ workshops and none of the respondents heard about IP from medical books or journals. HCP should read widely from books and journals to acquire broad knowledge on IP. Findings further revealed that 66% out of 83 who had training school as their source of information had high knowledge on IP while 34% had moderate knowledge (see table 18). This is in cotrast with Munganga (2007) who noted that only 10.3% out of 39 respondents with training school as their source of

information had high knowledge. The study further indicated that 68% out of 41 who had clinical area as their source of information had high knowledge on IP while 32% had moderate knowledge. The study also indicated that 65% out of 26 respondents who had their source of knowledge from seminar/workshop had high knowledge while 35% had moderate knowledge. Adequate knowledge about infection prevention is important because it helps the HCPs to reduce chances of contracting or spreading infections to others. This is in line with Katowa (2007) who indicated that, "*if health care workers have up to date information on the risk of infection transmission, training in safe injection and other infection prevention practices and adequate supplies to support these practices, they have the power to virtually eliminate the risk of transmission of HIV and other life threatening diseases that pose a threat to themselves, their patients and the surrounding communities*".

Regarding definition of IP, table 3 showed that majority 74% defined infection prevention correctly as the control of infection, 14% defined it as reduction of infection and 12% as elimination of infection. This showed that almost three quarters (74%) of the respondents were knowledgeable or had an idea of what IP was.

Table 4 revealed that majority 32.7% respondents last attended the IP workshop 0-2 years ago, 32% had never attended any workshop, 18% more than 5 years ago and 17.3 % last attended a workshop on IP 3-5 years ago. This shows that almost one third of the respondents had never attended any workshop on IP. This implies that there is need for in service training on IP.

Considering the participants level of knowledge in relation to experience, the study showed that 70% out of 71 respondents with more than 10 years working experience had high knowledge levels of IP and 30% had moderate knowledge levels. Half, 50% (3) out of 6 respondents with working experience of less than 1 year had high knowledge levels and the other 50% (3) of the same experience had moderate knowledge.

Majority 66.7% out of 150 respondents see table 35 with positive attitude towards IP had high knowledge level of IP, while 33.3% out of 150 respondents with positive attitude had moderate knowledge level and none of the respondents had negative attitude. This implies that there is need to continue training HCPs in order to maintain high level of knowledge in infection prevention. With adequate knowledge, HCPs develop positive attitude and consequently improve IP practice.

5.3.2 ATTITUDE TOWARDS INFECTION PREVENTION GUIDELINES

From the study, all 100% respondents had positive attitude towards infection prevention measures and none had negative attitude. The findings are in line with the study by Nawila (2010) on knowledge, attitude and practice of hand hygiene by health workers at Kabwe General Hospital where most of the respondents, 98% had positive attitude towards IP.In addition, findings are similar to that of Katowa (2007) and Mulembwe (2012) where the majority of the respondents had positive attitude towards IP. The reason could be that the respondent answered what they know academically and not what they felt or did or it could be that the attitude is truly positive. The findings, however, differ with that of Munganga (2007) in which 74% of the respondents had a negative attitude towards infection prevention. This could be due to the fact that doctors only stay with patients for a shorter period of time than other HCP like nurses.This study shows that HCP are improving their attitude towards IP as currenty study has proven this trend.

Majority, 97.3% of the respondents said IP was very important in the clinical area (see table **11**). This again is in line with the study by Katowa (2007) where 92.2% strongly agreed that IP was very important in the hospital. This means that if HCPs practice good IP measures, HAI would be reduced leading to quick recovery and discharge of patients from the hospital hence cutting down on hospital costs.

Half, 50% of the respondents said they would be comfortable to be supervised by a nurse, 23.3 % did not mind being supervised by anyone as long as that person is trained in IP, 15.3% mentioned paramedics, and 11.4% mentioned Doctor. Majority of the respondents opted for the nurse to supervise them possibly because they were the majority of the respondents. The other reason could be that nurses are the ones who are mostly in direct contact with the patients and deals with infection prevention matters in clinical care settings.

5.3.3 PRACTICE

Hand washing

Table 7 revealed that only 34% of respondents indicated correctly that they wash their hands before wearing gloves. This means that majority 66% of the respondents practised hand washing wrongly. According to the findings, 62% said only after touching a patient, 3.3% said after answering a phone call and 0.7% (1) before arranging files.

The findings are similar to the study by Creedon et al (2008) on hand hygiene compliance, by nurses in Ireland, where 43% of the respondents washed their hands before contact with the patients. This could be attributed to the perception by the respondent that their hands are considered clean as a result they see no need to wash their hands.

The above mentioned findings, however, are in contrast with that of Mulala (2006) where it was found that more than 72% of the study participants washed their hands before the procedure, 64% of the respondents washed their hands after the procedure. The difference in practice by HCPs indicates that there is variation and lack of understanding on hand washing from one person to the other.Therefore their is need to emphasise on the importance of hand washing.

The researchers observed that 64.7% out of 116 respondents who had good practice were nurses, 16.3% were paramedics, and 6.8% were CDEs and others while 3.4% were doctors.This relates to the study done by Pettit (2001) on health care workers in Egypt who stated that the average compliance to hand hygiene recommendations varied among professional categories of health-care workers.The findings can be attributed to the fact that nurses were the majority participants in the study.

The study showed that the majority 56% out of 116 respondents with good practice of IP, gained their knowledge from training schools. Only 2.6% out of 150 respondents had excellent practice. This finding signifies that despite IP measures being incorporated in the training school curriculums, there is still poor practice among some of the health care providers. This could be due to many factors such as lack of supervision, inadequate resources, and work overload among others.

The study revealed that 84% out of 71 respondents with 10 years and above working experience had good practice and 12.8% out 71 respondents with the same work experience had poor IP Practice. There was no respondent with excellent practice with work experience ranging from 6-10 years. This is in line with Munganga (2007) who stated that 75% of doctors with good practice had 10 years experience. Similarly, Reeves and Geeddes (1982) stated that, there is need for experience in carrying out effective hygienic practices. The findings support the hypotheses which indicate that the more experience health care providers have the better the IP practice.

5.4.2 Research

Even though standard precautions for infection prevention practices have been published with an evidence-based guideline, there are no standardized methods or tools for measuring adherence of these guidelines. Many health institutions rarely carry out routine IP investigations to identify the levels of infection rates and only do so when there is a crisis like an outbreak of wound infections in the institution. It is, therefore, important that further research is conducted at local level and results published through hospital clinical meetings. This will make the understanding of the IP guidelines by the HCP relevant as they will be able to relate research findings to the published guidelines.

5.4.3 Education

More than half (67%) of the respondents had high levels of knowledge and all the participants (100%) had positive attitude. This signifies that HCP are knowledgeable and their attitude is good but the practice poses a big challenge. This implies that a lot has to be done in order to have HCP with adequate knowledge and positive attitude be able to practice IP measures effectively. There is need to continue in- service training in IP for all health care providers. In clinical areas the in- charges and departmental heads should make every effort to ensure that infection prevention guidelines are followed by all health care providers. Only nurse-educators with certificates in IP should be allowed to teach it in all learning institutions. This certificate is very essential as the educators will teach the course in IP with the passion, knowledge, skill and attitude that the course deserves. These attributes will be transmitted to the learners, who will keep the light shining in their IP practices.

Since HCP are knowledgeable and have positive attitude, they should act as role models to others by putting their knowledge into good practice of infection prevention. This will help in reducing the rates of HAI in the health care settings. The major problem requiring greater reinforcement is provision of resources. In many hospitals, staff lack resources and this contributes to low morale and poor practice of IP. Poor staff fulfillment and underpinning of theoretical knowledge about infection control procedures in clinical practice drives the need for targeted education.

5.4.4 Administration

For IP programmes to succeed there is need for total financial support from management in terms of resource provision. Management should be able to allocate resources to the IP department ensure that all health care providers have adeqaute materials for practicing IP measures.

Management supports the implementation of IP guidelines and make IP a priority so that the workers can comply with the guidelines. Management support should involve all HCP in coming up with guidelines and protocols for infection prevention. In a situation where the guidelines are already formulated, all HCP should be oriented to the new procedures and protocols as a way of imparting a sense of ownership. This may result in improved practice of IP compared to a situation where management formulated the guidelines and expect HCP to implement.

Infection prevention commodities and supplies like protective materials and disinfectants should consistently be made available to avoid short falls which could lead to compromising of IP standards.

A cost centre for IP should be created for IP in the institution. In addition, a secretariat to oversee the IP activities should be made or formed and put a trained personnel in IP to be in charge.

5.5 CONCLUSION

The study was conducted to determine the knowledge, attitude and practice of infection prevention measures among health care providers at Kafue District Hospital, Maina Soko Military Hospital and Nchanga South Mine Hospitals. Data was collected from one hundred and fifty (150) respondents who were HCP using a non experimental self administered questionnaire.

The findings from the study indicated that the respondents had high level of knowledge and positive attitude towards infection prevention. The level of practice ranged from poor to good going by the majority of the respondents. The hospital IP committees have a big challenge in ensuring that HCP adhere to infection prevention guidelines in order to reduce the rates of nosocomial infection. The IP committees should be conducting spot checks in clinical areas in order to ensure that IP guide lines are strictly adhered to. In service training should be on

going in order to maintain the highest level of knowledge. this can be done through regular holding of in house meeting on IP, workshops and seminars.

CHAPTER 6

RECOMMENDATIONS

1. To the Government

The government should consider increasing grant allocation to hospitals for IP activities. In addition, the government should play a major role in providing and supervising of hospitals to ensure that they have IP equipment and facilities like sterilizers, autoclave machines, incinerators, waste disposal pits, adequate running water, elbow- operated taps, sinks for hand washing and ideal sluice rooms for instrument processing and bed pan washers.

The Government through Provincial Offices should supervise the hospitals during the performance assessment to ensure that all health care settings are adhering to the National Policies on infection Prevention. In addition, the Ministry of Health should facilitate holding of workshops on IP by lobbying from Non Governmental Organizations and co-operating partners. The MoH should consider introducing an establishment for IP officer who are being trained by the The University of Zambia to fill up the position in all health care facilities. The results of this study suggest the need for a bigger study to cover all the hospitals in Zambia.

2. To the Hospital Managements

The findings of the study (see table 4) revealed that there is need for the Management of Kafue District Hospital, Maina Soko Military Hospital and Nchanga South Mine Hospital to conduct trainings in IP for health care providers.This can be done through the In-service Department in order to acquaint the HCP with the knowledge in infection prevention in the delivery of quality health care. There should be equity of access to refresher courses without segregating some category of health care providers like CDEs.

Hospital policy on IP need to be formulated and discussed with the IP committees to ensure that all HCP have guidelines to follow in order to improve and enhance the implementation of infection prevention guidelines.

Hospital Managements should ensure that health care providers are provided with adequate IP supplies for them to effectively implement infection prevention programmes.

3.To the Infection Prevention Committee

Infection Prevention Committees should comprise of members from different departments in the hospital set up and not Heads of Departments alone as they are committed with

administrative duties most of the times. For example, the suggestion that the IP committee should be headed by the In-charge of Microbiology Department may fail the IP program because of the busy schedule of the officer.

The IP committee should be empowered to investigate and report to management any members of staff who contravenes the IP guidelines. The committee in addition should formulate and once in a while review local IP guidelines to suit the prevailing hospital situation.

5.7 DISSEMINATION OF FINDINGS

Dissemination of findings entails the measures that would be undertaken to make information known to the relevant authorities and study subjects on what the study has measured. A copy of the research report will be given to the Hospital Management, the District and the Provincial Health Offices of the three research centres. A clinical meeting will be organized for all members of staff at KDH, NSMH and MSMH.

A copy of the findings will also be sent to the interested parties such as the General Nursing Council of Zambia (GNC), and the Ministry of Health (MoH) who are the policy makers to improve infection prevention practice in the hospitals. The University of Zambia will also be given a copy through the School of Medicine library and another copy will be given to Department of Nursing Sciences.

5.8 LIMITATION OF THE STUDY

- Due to inadequate resources to engage research assistants, the study was narrowed to a self administered questionnaire approach.
- It was not possible to conduct the study on a large scale with a large sample size due to limited resources and time in which the study was to be completed and submitted to the University of Zambia, School of Medicine.

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THE UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF NURSING SCIENCE

QUESTIONNAIRE NUMBER : _____

TOPIC: A STUDY TO DETERMINE THE KNOWLEDGE, ATTITUDE AND PRACTICE OF INFECTION PREVENTION MEASURES AMONG HEALTH CARE PROVIDERS

City/ District : _____

Date of interview : _____

INSTRUCTIONS

1. Introduce yourself to interviewee.
2. Explain the purpose of the interview.
3. Get verbal consent from the interviewee.
4. Assure the interviewee of confidentiality and anonymity.
5. Do not write the name of the respondent on the schedule to ensure anonymity.
6. Write the appropriate responses in the appropriate boxes provided.
7. Write the responses in the space provided.
8. Write the responses in the space provided for open ended questions.

SECTION A: DERMOGRAPHIC DATA

1. Sex
   a. Male [ ] [ ]
   b. Female [ ]
2. How old were you on your last birthday?

   _____

3. What is your marital status?
   a. Never married [ ]
   b. Married [ ] [ ]
   c. Divorced [ ]
   d. Widowed [ ]
4. What is your religion?
   a. Christian [ ]
   b. Muslim [ ] [ ]
   c. Hindu [ ]
   d. None [ ]
   e. Others (specify).....
5. a. When did you start work as a Health Care Provider?

   Year Month Date

				/			/			[ ]

   b. State the name of your health care institution

   .....

   .....

6. How many years have you worked as a Health Care Provider?
   a. Less than 1 year [ ]
   b. 1 – 5 years [ ] [ ]
   c. 6 – 10 years [ ]
   d. More than 10 years [ ]
7. What is your profession?

a. Doctor [ ]

b. Nurse [ ] [ ]

c. Paramedic [ ]

d. CDE [ ]

e. Others (specify).....

SECTION B: KNOWLEDGE

8. Have you ever heard about Infection Prevention?

a. Yes [ ] [ ]

b. No [ ]

9. If yes to question 8, where did you hear about Infection Prevention?

a. Clinical area [ ]

b. Training school [ ] [ ]

c. Seminars/workshops [ ]

d. Medical books/journals [ ]

10. What does Infection Prevention mean?

a. Elimination of infection [ ]

b. Reduction of infection [ ] [ ]

c. Control of infection [ ]

d. Others (specify) _____ [ ]

11. When did you last attend a workshop/seminar on Infection Prevention?

a. Never [ ]

b. 0 – 2 years ago [ ] [ ]

c. 3 – 5 years ago [ ]

d. More than 5 years ago [ ]

12. Do you know the term universal Infection Prevention measures or Standard Precautions?

a. Yes [ ] [ ]

b. No [ ]

13. Which one of the following statements is a universal Infection prevention measure or standard precaution?

a. Consider every person as infectious. [ ] [ ]

b. Wash hands only when knocking off. [ ]

c. Wear a face mask when talking to a patient. [ ]

d. Close and dispose the sharp box when it is full. [ ]

14. List any three (3) items in your clinical area that is needed for the observation of Infection Prevention measures.

_____

_____ [ ]

_____

15. Do you have all the above listed items in your clinical area?

a. Always [ ]

b. Occasionally [ ] [ ]

c. Never [ ]

16. Do you have hand washing soap and running water in your Clinical area?

a. Always [ ]

b. Erratically [ ] [ ]

c. Never [ ]

17. When should you wash your hands with soap under running water While on duty?

a. Only after touching a patient [ ]

b. Before arranging files [ ] [ ]

c. Before wearing gloves [ ]

d. After answering a phone call [ ]

18. According to Infection Prevention guidelines, how long

should you take to wash hands while on duty?

a. Less than 60 seconds [ ]

b. 2-5 minutes [ ]

c. 5- 10 minutes [ ] [ ]

d. I don't know [ ]

19. When do you wear gloves while on duty?

a. When giving health education [ ]

b. When coming in contact with body fluids [ ]

c. When writing patients notes [ ] [ ]

d. When opening the door to the ward [ ]

20. Do you have sterile packs in your department?

a. All the time [ ]

b. Occasionally [ ]

c. Never [ ] [ ]

d. Not applicable [ ]

21. What are the advantages of Infection Prevention to your client?

_____

_____ [ ]

_____

22. What are the advantages of Infection Prevention to you as a Health Care Provider_____

_____ [ ]

_____

_____ [ ]

23. What are the advantages of Infection Prevention to the Health Care facility?

_____

_____ [ ]

_____

24. Is there an Infection Prevention Committee in your Hospital?

a. Yes [ ]

b. No [ ] [ ]

25. If yes, what department heads the infection prevention committee at Your institution?

_____ [ ]

26. Does the Hospital Management support the application of Infection Prevention measures at your institution?

a. Yes [ ]

b. No [ ] [ ]

27. If your answer to question 26 is yes, state the ways in which the Hospital Management supports the application of Infection Prevention measures.

_____

_____

_____ [ ]

_____

28. Do you know the dangers that are associated with Hospital Acquired Infection.

a. Yes [ ]

b. No [ ] [ ]

29. If your answer to question 28 is yes, mention one (1) of the dangers.

_____

_____ [ ]

SECTION C: ATTITUDE

30. How important is the role of Infection Prevention in the clinical area?

a. Very important [ ]

b. Moderately important [ ]

c. Fairly important [ ] [ ]

d. Not important [ ]

31. As a Health Care Provider, what do you think about the management? of Infection Prevention in this Hospital.

a. Excellent [ ]
b. Good [ ] [ ]
c. Fair [ ]
d. Very poor [ ]

32. What reason do you have for your answer in question 31?

_____
_____ [ ]
_____

33. In your own opinion, are there any areas of Infection Prevention? that needs to be improved?

a. Yes [ ] [ ]
b. No [ ]

34. If yes to question 33, what areas should be improved?

_____
_____ [ ]
_____

35. Do you think the hospital should continue with the Infection Prevention program?

a. Yes [ ] [ ]
b. No [ ]

36. Give reasons for your answer.

_____
_____ [ ]
_____
_____

37. Do you wear personal protective equipment, such as gloves, aprons, masks and gowns when in direct contact with the patient?

a. Yes [ ] [ ]

b. No [ ]

38. If No to question 37, give reasons.

_____

_____ [ ]

_____

_____

39. As a Health Care Provider, who would you be comfortable with to supervise you on Infection Prevention practices?

a. Doctor [ ]

b. Nurse [ ] [ ]

c. Paramedics [ ]

d. Other (specify) _____

SECTION D: PRACTICE

40. List four ways (4) in which you apply Infection prevention Measures in your clinical area?

_____

_____ [ ]

_____

_____

41. How often do you practice the Infection Prevention measures?

a. All the time [ ]

b. Occasionally [ ] [ ]

c. never [ ]

42. a. Are there Infection Prevention guidelines displayed on the walls in your department for all to see and observe?

a. Yes [ ] [ ]

b. No [ ]

42. b. Do you follow policy/guide lines in your practice?

a. Yes [ ]

b. No [ ]

43. What is the greatest fear, in relation to Infection Prevention as you perform your duties in the ward?

_____

44. List the colour coded bin liners that you have in your clinical area.

_____

_____ [ ] [ ]

_____

45. In relation with the above colour codes, state how you dispose of the waste generated in your clinical area.

_____

_____ [ ]

_____

46. Have you ever sustained a needle stick injury in your practice?

a. Yes [ ]

b. No [ ] [ ]

47. If yes, what did you do after sustaining a needle stick injury?

_____ [ ]

_____

48. The needle stick injuries can be avoided by

a. Recapping needles after use to protect CDEs [ ]

b. Not recapping needles after use [ ] [ ]

c. Disposing sharps in the sharp boxes [ ]

d. Others (specify) _____

THANK YOU FOR ANSWERING THE QUESTIONS

MARKING KEY FOR THE STUDY VARIABLES

SECTION B: KNOWLEDGE.

Question number	Question	Answer	Score
8	Have you ever heard of infection prevention	a. Yes b. No	1
9	If yes where did you hear about Infection Prevention?	a. Clinical area b. Training school c. Seminars/workshops d. Medical books/journals	4 (1 mark for each response)
10	What does Infection Prevention mean?	c. Control of infection	1
11	When did you last attend workshop/seminar on Infection Prevention?	a. Never b. 0 – 2 years ago c. 3 – 5 years ago d. More than 5 years ago	4 marks (1 mark for each response)
12	Do you know the term universal Infection Prevention measures or Standard Precautions?	a. Yes	1
13	Which one of the following	a. Consider every person as infectious.	1

	statements is a universal Infection Prevention measure or Standard Precaution?		
14	List any three (3) items in your clinical area that is needed for the observation of Infection Prevention measures.	a. Running water and soap. b. Peddle bin with liners c. Disinfectants d. Sharp boxes	3
15	Do you have all the above listed items in your clinical area?	a. Always b. Occasionally	2 marks (1 for each)
16	Do you have hand washing soap and running water in your clinical area?	a. Always	1
17	When should you wash your hands with soap under running water while on duty?	c. Before wearing gloves	1
18	According to Infection Prevention guidelines, how long should you take to wash hands while on duty?	b. 2-5 minutes	1
19	When do you wear gloves while on duty?	b. When coming in contact with body fluids	1
20	Do you have sterile packs in your department?	a. All the time b. Occasionally c. Not applicable	4 marks (1 mark each)

		d. Never	
21	What are the advantages of Infection Prevention to your client?	a. Reduces Hospital stays. b. Reduces risk of acquiring nosocomial infections.	2
22	What are the advantages of Infection Prevention to you as a Health Care Provider?	a. Reduces/ minimizes risk of acquiring nosocomial infections b. Reduces work overloads	2
23	What are the advantages of Infection Prevention to the Health Care facility?	a. Reduce Hospital costs b. Reduces congestion of patients c. Reduces mortality rate d. Improves quality of care	4
24	Is there an Infection Prevention Committee in your Hospital?	a. Yes	1
25	If yes, what department heads the infection prevention committee at your institution?	a. Doctor b. Nurse c. Paramedics d. Others	4 (1 mark for each response)
26	Does the Hospital Management support the application of Infection Prevention measures at your institution?	a. Yes	1
27	If your answer to question 26 is yes, state the ways in which the Hospital Management supports the application of Infection Prevention measures.	a. Allocation of funds b. Purchase of supplies c. Workshops/ Training d. Monitoring	2

28	Do you know the dangers that are associated with Hospital Acquired Infection?	a. Yes	1
29	If your answer to question 28 is yes, mention one (1) of the dangers.	a. Prolonged Hospital stay b. Drug resistance c. High mortality rate d. High re-infection rate e. Lowered immunity system	5 marks (1mark each)
TOTAL			

KEY

High knowledge.....23-32

Moderate knowledge.....11-22

Low knowledge.....0-10.

	SECTION C: ATTITUDE		
30	How important is the role of Infection Prevention in the clinical area?	a. Very important b. Moderately important c. Fairly important d. Not important	3 2 1 0
31	As a Health Care Provider, what do you think about the management of	a. Excellent b. Good	4 (1 mark for each

	Infection Prevention in this Hospital?	c. Fair d. Very poor	response)
32	What reason do you have for your answer in question 31?	a. Adequate supplies b. Inadequate supplies c. No training d. Shortage of manpower e. Poor wastage management f. Others	1
33	In your own opinion, are there any areas of Infection Prevention that need to be improved?	a. Yes b. No	2 (1 mark for each)
34	If yes to question 33, what areas should be improved?	a. purchase of supplies b. waste disposal c. Isolation wards d. Provide policies/guide lines e. Training f. Others.	1
35	Do you think the hospital should continue with the Infection Prevention program?	a. Yes b. No	1
36	Give reasons for your answer.	a. prevent HAI b. To reduce work overload c. To reduce number of patients d. To reduce on the costs	1

37	Do you wear personal protective equipment, such as gloves, aprons, masks and gowns when in direct contact with the patient?	a. Yes b. No	2 (1 mark for each response)
38	If No to question 37, give reasons.	a. Not always available b. Only when necessary	2 (1 mark for each response)
39	As a Health Care Provider, who would you be comfortable with to supervise you on Infection Prevention practices?	a. Doctor b. Nurse c. Paramedics d. Other (specify)	4 (1 mark for each response)
TOTAL			12

Key

Positive Attitude.....6-12

Negative Attitude.....0-5

40	**SECTION D: PRACTICE** List four ways (4) in which you apply Infection prevention measures in your clinical area?	a. Hand Washing b. Wearing PPES c. Disposing Sharps in Sharp boxes. d. Autoclaving instrument e. Isolating infectious cases f. Reducing traffic g. Opening windows.	4
41		a. All the time	2

	How often do you practice the Infection Prevention measures?	b. Occasionally c. Never	1 0
42 a	Are there Infection Prevention guidelines displayed on the walls in your department for all to see and observe?	a. Yes b. No	1 0
42 b	Do you follow policy/guide lines in your practice?	a. Yes b. No	1 0
43	What is your greatest fear, in relation to Infection Prevention as you perform your duties in the ward?	a. HIV/AIDS b. Hepatitis c. Needle pricks d. Nosocomial infections	4 (1 mark for each response)
44	List the colour coded bin liners that you have in your clinical area.	a. Black b. Yellow c. Red	3
45	In relation with the above colour codes, state how you dispose of the waste generated in your clinical area.	a. Black for domestic wastes b. Yellow for clinical wastes c. Red for biohazards wastes	3
46	Have you ever sustained a needle stick injury in your practice?	a. Yes b. No	2 (1 mark for each response)

47	If yes, what did you do after sustaining a needle stick injury?	a. Washed under running water/squeezed or used spirit then reported to supervisors.(PEP given) b. Nothing it was long before PEP was established.	1
48	The needle stick injuries can be avoided by	c. Disposing sharps in the sharp boxes	1
TOTAL			18

KEY

Excellent practice.....13-18

Good practice.....7-12

Poor practice.....0-6

	ITEMS	QUANTITY	UNIT COST (ZMK)	TOTAL COST (ZMK)
1	STATIONERY			
a	Reams of paper	15	30,000	450,000
b	Ball pens (box)	3	15,000	45,000
c	**Erasers**	9	1,000	9,000
d	Note books (each)	9	5,000	45,000
e	Tipex (box)	6	10,000	60,000
f	Stapler	3	50,000	150,000
g	Perforator	3	80,000	180,000
h	Scientific calculator	3	100,000	300,000
i	Flip charts	6	50,000	300,000
J	Markers	30	5,000	150,000
K	Staples (box)	3	10,000	30,000
l	Box files (each)	6	30,000	180,000
m	Small folders	30	1,000	30,000
n	Field bags	3	150,000	450,000
o	Folder clips	30	500	15,000
p	Paper glue	3	15,000	45,000
q	Bosticks	6	15,000	90,000
r	Disks (CD-ROM)	24	5,000	120,000
s	Memory sticks 2G	3	80,000	240,000
T	Diaries	3	50,000	150,000
u	Manila paper	12	1,000	12,000
	SUBTOTAL:			**3,051,000**
2	**SECRETARIAL SERVICES**			
a	Questionnaire Typing	12 pagesx3	2,000	72,000
b	Check list typing	10 pages x3	2,000	60,000
c	Research proposal typing, printing and binding	3	300,000	900,000
d	Research Report script	3 x 60 pages	3,000	540,000
e	Questionnaire printing	3 x 12 pages	1,500	54,000
f	Check list typing	3 x 10 pages	1,500	45,000
g	Binding of final Report	18 copies	150,000	2,700,000
h	photocopying	18 x 60 pages	500	540,000
	SUBTOTAL:			**4,911,000**
3	**PERSONNEL**			
a	Transport allowance- Researchers	25 days x 3	20,000	1,500,000
b	Lunch allowance- researcher	75	50,000	3,750,000
4	**IMFORMATION DISSEMINATION**			
a	Dissemination workshop			6,000,000
	SUBTOTAL			11,250,000
	TOTAL			**19,212,000**
	CONTIGENCY 10%			1,921,200
	GRAND TOTAL			K**21133200**

BUDGET JUSTIFICATION

Stationery

The reams of paper will be used for printing and photocopying of the research proposal, questionnaires, draft report and the final research reports. The pens and pencils will be used for writing while the correction fluid and eraser will be used for correcting mistakes. The disks and memory sticks will be used for storage of data. Staplers, staples and perforators will be used for attaching papers. Files, folder clips and field bags will be used for storing questionnaires during data collection. Scientific calculator will be used for analyzing data. The flip charts and markers will be used for drawing up the data master sheets as well as dissemination of information.

Secretarial Services

Secretarial services will be out sourced and thus the need for funds to pay for typing, printing, photocopying and binding services.

Field Travel Expenses

Data collection will be done throughout the day hence the need for lunch allowance for Researchers. 10% of the total budget is for the unseen circumstances and for possible inflation. Transport allowance will be required because Researchers will be commuting from their homes to the hospitals where data collection will be done.

Dissemination

The Researchers will have to disseminate the findings through workshops, hence the need for funds to cater for logistics.
This budget will cater for all the three Researchers.

WORK PLAN

	TASK TO BE PERFORMED	DATE	PERSONNEL	PERSON DAYS
1.	Developing research proposal	June to September, 2012.	Researchers and research supervisor	315days
2.	Literature review	continuous	Researchers and research supervisor	
3.	Compiling Research Proposal	1st to 30th September, 2012.	Researchers and research supervisor	90 days
4.	Clearance from School	27th septembe,2012r	Researchers	3 days
5.	Pilot study	28th September 2012	researchers	3 days
7.	Amendment tool	1st to 2nd October 2012	researchers	6 day
8.	Data collection actual study	3rd to 28th October 2012	researchers	75 days
9.	Data analysis	1st November to 6th January 2012	Researchers and research assistants	201 days
10.	Report writing	7th January to 8th February 2012	Researchers and research supervisors	93 days
11.	Draft report	4th February to 8th march 2012	Researchers and research supervisors	93 days
12.	Finalizing report	25th February to 29th March 2012	Researchers and research supervisors	96 days
13.	Dissemination of results	1st to 2nd April	Researchers	6 days
14.	Monitoring and evaluation	continuous	Researchers and research supervisors	

Appendix IV: Gantt Chart

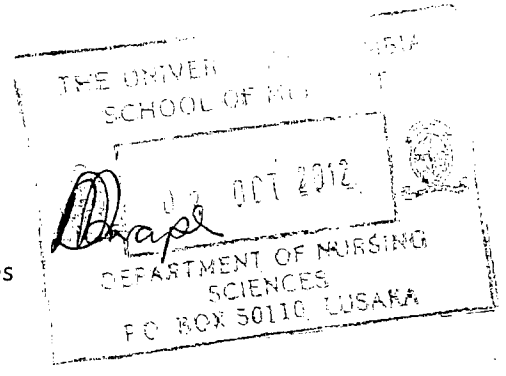
MONTHS		JUNE				JULY				AUG				SEPT				OCT				NOV				DEC				JAN				FEB				MAR				APR			
No. of weeks per month		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task to be performed	**Person responsible**																																											
Developing research proposal	**Researchers(3) Supervisor (1)**																																											
Literature review	Researchers(3) Supervisor (1)																																											
Compiling research proposal	Researches(3)r Supervisor (1)																																											
Clearance from school	Researcher(3)																																											
Pilot study	Researcher																																											
Amendments to the data collection tool	Researcher (3) Supervisor (1)																																											
Data collection	Researcher																																											
Data analysis	Researcher(3) Supervisor (1)																																											
Report writing	Researchers (3) Supervisor (1)																																											
Draft report to DNS	Researchers (3) Supervisor (1)																																											
Finalizing report	Researchers (3) Supervisor (1)																																											
Dissemination of results	Researchers (3)																																											
monitoring and evaluation	Researchers (3) Supervisor (1)																																											

Approved
Dr 08/10/12.
Ag/MOI

The University Of Zambia
School Of Medicine
Department Of Nursing Sciences
P.O.BOX 50110
LUSAKA.

25th September, 2012.

The Medical Superintendent,
Kafue District Hospital
P.O. Box 360025
Kafue.



UFS: The Head of Department
The University Of Zambia
School Of Medicine
Department Of Nursing Sciences
P .O.BOX 50110
LUSAKA.

Dear Sir,

RE: PERMISSION TO CONDUCT A PILOT STUDY

We are fifth year Students in the School Of Medicine at the University of Zambia pursuing a degree in Nursing Sciences. As part of our School requirements, we have to carry out a pilot study in our area of interest before we conduct the actual research study. We therefore, request for permission to carry out the study at Railway Clinic in your District.

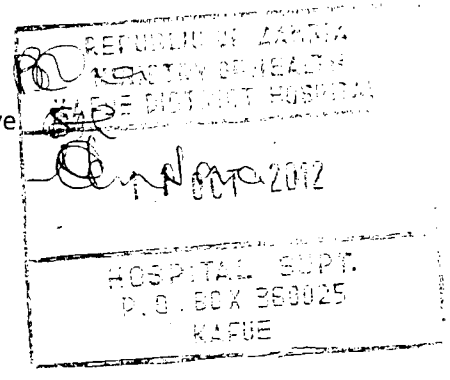
Our Research Topic is "**A study to determine knowledge, attitude and practice of infection prevention measures among the health care providers at Kafue District Hospital, Minasoko Military Hospital and Nchanga South Mine Hospitals**".We would like to sample 5 Health Care Providers and administer a structured questionnaire.

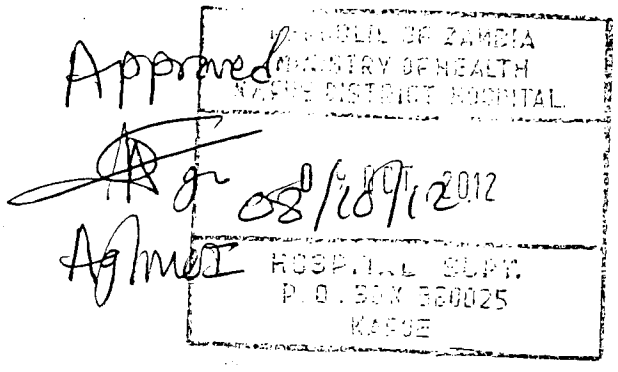
We intend to carry out this study on 8th October, 2012.

Thanking you in anticipation.

Yours faithfully

Bridget Chiboola.
Secunda M.Kalobwe
Evason Mandona.





The University of Zambia

School of Medicine

Department of Nursing Sciences

P.O. BOX 50110

LUSAKA.

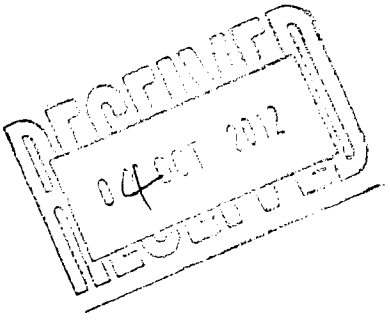
1st September, 2012.

The Medical Superintendent

Kafue District Hospital

P.O.BOX 360025

KAFUE



UFS: The Head of Department

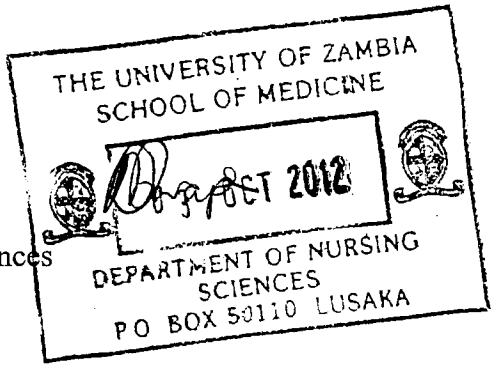
The University of Zambia

School of Medicine

Department of Nursing Sciences

P.O. BOX 50110

LUSAKA.



Dear Sir

RE: PERMISSION TO CONDUCT A RESEARCH STUDY

I am a fifth year student in the School of Medicine at the University of Zambia. As part of my school requirements, I have to carry out a research study in my area of interest. I, therefore, request for permission to carry out the study at your institution.

My research topic is "**A Study to determine knowledge, attitude and practice of infection prevention among Health Care Providers at Kafue District Hospital.**"

I intend to carry out the study in October, 2012.

Thanking you in advance.

Yours faithfully,

Bridget Chiboola.

RESTRICTED

The University of Zambia

School of Medicine

Department of Nursing Sciences

P.O Box 5110

Lusaka.

The Commandant

Maina Soko Military Hospital

P.O Box 320091

Lusaka

U.f.s Head of Department

Nursing Sciences

University of Zambia

Sir,

RE: REQUEST TO CONDUCT A RESEARCH AT MAINA SOKO MILLITARY HOSPITAL.

Reference is made to the above subject matter.

2. I am a registered midwife under Zambia Air Force currently pursuing a Bachelor's degree in Nursing at the University of Zambia, School of medicine in the Department of Nursing Sciences.

3. I am in my final year of study and one of the school requirements is to do a research. My research topic is **"knowledge, attitude and practices of Infection Prevention measures among Health Care Providers".**

4. I write therefore, to request permission to administer questionnaires to 50 health care providers at Maina Soko Military Hospital as part of my study.

Submitted for your consideration, sir.

CAPT S. M. KALOBWE

Capt S.M Kalobwe

13 October 2012

W/912384

RESTRICTED

A151/7/1

RESTRICTED

24

DEFENCE FORCE MEDICAL SERVICES

Telephone : 0211-250915
TELEFAX : 0211-251203
E-mail : dfms@zamnet.zm

DFMS Hqs
Ministry of Defence Building
P.O Box 320298
Lusaka- Zambia.

DFMS HQ/TRG 308/1

The Commandant
Maina Soko Military Hospital
P O Box 320091
LUSAKA

16 October 2012

FcHO 23

RESEARCH PROJECT
CAPT S N KALOBWE (W91234)

Reference:

A. Your letter MSMH/A151/5/1 dated 15 October, 2012.

1. Iam directed to inform that authority has be granted for the above named officer to carry out her research.

2. Submitted for your attention.

G KAWINA
Major
for/Director General
Medical Services

RESTRICTED

The University Of Zambia
School Of Medicine
Department Of Nursing Sciences
P.O.BOX 50110
LUSAKA.

25th September, 2012.

The Medical Superintendent,

Nchanga Mine South Hospital

Private Bag KCM 2000

CHINGOLA

UFS: The Head of Department

The University Of Zambia

School Of Medicine

Department Of Nursing Sciences

P .O.BOX 50110

LUSAKA.

Dear sir/Madam,

REF: PERMISSION TO CONDUCT A RESEARCH STUDY

I am a fifth year Student in the School Of Medicine at the University Of Zambia. As part of my School requirements, I have to carry out this study in my area ofinterest. I therefore, request for permission to carry out the study at your institution.

My Research Topic is **"A study to determine knowledge, attitude and practice of infection prevention measures among the health care providers at Nchanga South Hospital"**.

I intend to carry out this study in October, 2012.

Thanking you in anticipation.

Yours faithfully,

Evason Mandona.

0977418250