

**KNOWLEDGE, ATTITUDE AND PRACTICES OF NURSES ON PREVENTION
AND CONTROL OF HOSPITAL ACQUIRED INFECTIONS IN SOROTI
REGIONAL REFERRAL HOSPITAL**

BY

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DECLARATION

I OKWII MOSES, hereby declare to the best of my knowledge that this Research work on knowledge, attitude and practices of the nurses on prevention and control of Hospital acquired infections in Soroti Regional Referral Hospital is my own original work and has never been published in any University for any recognition or award.

Signature.....

Date:

OKWII MOSES

APPROVAL

I hereby accept that this research dissertation on knowledge, attitude and practices of the nurses on prevention and control of Hospital acquired infections in Soroti Regional Referral Hospital has been produced under my supervision.

Signature.....

Date

Ms. AGWANG AGNES

Supervisor

DEDICATION

This research work is dedicated to my family, friends and the entire Nursing fraternity of International Health Sciences University.

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OPERATIONAL DEFINITIONS

Cross infection: Transmission of the infection from one patient to another or from patient to staff or staff to staff.

Hand hygiene: A general term that applies to hand washing or surgical hand antisepsis that may include use of soap, disinfectants or alcohol based hand solutions.

Health facility: Any health center, hospital or a clinic that is registered and recognized by the district health office from where patients can obtain medical services.

Healthcare worker: Any medical trained worker such as nurses, nursing assistants, medical doctors, midwives, clinical officers and laboratory technicians whose activities involve contact with the patient or their blood or body fluids in the health setting. This definition excludes cleaners and other support staffs.

Hospital Acquired Infections: The infections that are neither present nor incubating when the patient enters the health facility but are acquired 48 hours during the patients stay in the health facility. This term is used interchangeably with **Healthcare Associated Infection or Nosocomial infections.**

Patient: A person who receives medical attention, care and treatment.

Sharps: Any pointed instrument that may cause physical injury. This include scalpels, needles, syringes, infusion sets, broken glasses and lancets.

Standard precautions: Those measures taken to prevent the transmission of infection during the provision of health care services including handling waste products that apply to all patients regardless of the diagnosis or presumed infection status.

LIST OF ABBREVIATIONS OR ACRONYMS

CDC	-	Centers for Disease Control
HAIs	-	Hospital Acquired Infections
Hbs	-	Hemoglobin
HBV	-	Hepatitis B Virus
HCAIs	-	Health Care Associated Infections
HCV	-	Hepatitis C Virus
HCWs	-	Health Care Workers
HWs	-	Health Workers
IC	-	Infection Control
OSHA	-	Occupational Safety and Health Administration
PPEs	-	Personal Protective Equipments
WHO	-	World Health Organization

ABSTRACT

Although nurses prevent and control infections they lack the necessary knowledge to practice infection prevention and control. There is low compliance to infection control precautions including hand hygiene, the use of gloves and sharps management as a result of limited knowledge, poor staff attitude towards infection control measures leading to prolonged stay of the patients in the hospital, functional disability or reduced quality of life, high resistance to antimicrobial agents, emotional stress, additional financial costs for both the patients and their families and finally unnecessary deaths. These infections are actually preventable. It was essential to explore the knowledge, attitude and practices of nurses toward their prevention.

Objective: The purpose of the study was to determine the knowledge, attitude and practices of the nurses on prevention and control of Hospital acquired infections in Soroti Regional Referral Hospital.

Methodology: This study was a descriptive, cross-sectional study which employed simple random sampling method and a semi structured questionnaire was used to collect data from nurses in Soroti regional referral hospital. The sample size of 88 participants was used. Data was analyzed and tables, graphs, pie charts and percentages were generated.

Study findings: The findings of the study revealed that 65.9% of the respondents were female while 34.1% were male. The diploma nurses constituted 48.9%, enrolled 29.5% and 21.6% of the respondents were graduates with degree award. Greater percentage of the respondents were diploma holder. Modal age group is 21-29 (48.9%, majority the respondents had experience of 1-5 years (58%). 51.1% of the respondents were very knowledgeable about hospital acquired infections, 37.5% of the respondents were quite knowledgeable about Hospital acquired infections. 81.8% of the respondents strongly agreed that every patient should be treated as if they carry blood borne. On the same note, 83.0% of the respondents said they always observe the infection control practices 90.9% of the respondents stated that they don't recap needles after use. 96.6% of the respondents said they place disposable sharps in safety box immediately after use. Results also indicate that, 96.6% of the respondents always use gloves when doing procedure while 3.2% of the respondents sometimes use gloves when doing procedure.

Conclusions. The respondents are more knowledgeable, having a positive attitudes towards but with low level of practices on prevention and control of hospital acquired infections.

Recommendations.

Health facilities should provide every nurse with guidelines on infection control measures, and should strictly supervise the nurses to ensure compliance.

Health facilities should provide adequate disposal material to the nurses.

Nurses should be given opportunities to upgrade and males also need to be encouraged to offer nursing course.

CHAPTER ONE: INTRODUCTION

This chapter consists of the study Background, Statement of problem, Objectives of study, Research questions about the knowledge, attitude and practices of the nurses on prevention and control of Hospital acquired infections in Soroti Regional Referral Hospital, Significance of the study and Conceptual framework.

1.0 Background of study

Hospital acquired infections (HAIs) also called nosocomial infections are infections obtained by the patient, 48 hours after admission at the hospital or a health facility for reasons which are not related to the infections or before admission to the facility, patient was not previously infected (Kelly et.al, 2012).

HAIs occur worldwide and affect hundreds and millions of people and they are related with high rates of morbidity and mortality among patients who are admitted in the hospitals or health facility and are a major problem to patients' safety and in settings where health care is to be made safe, their close watch and avoidance should be the top most priority (WHO, 2009). Health workers (HWs) are as well having an increased chances of getting these infections (Iliyasu et al, 2016).

Globally, over 1.4 million people are affected by HCAIs (WHO, 2010). The prevalence of patients affected by HAIs in developed countries is ranging from 5% to 10% and about 15% to 40% of the patients are in critical care units (CDC, 2010). The prevalence of Hospital Acquired Infections in Africa is varying from 2.5% to 14.8% in Algeria, Senegal, Burkina Faso, and Tanzania (WHO 2011). Bacteria, fungi, viruses, and parasites are the causative agents of HAIs (David McQuoid-Mason 2012).

The end results of HCAIs in accordance to WHO, 2009 and New York State Department of Health 2014, are the prolonged stay in the hospital, functional disability or reduced quality of life, high resistance to antimicrobial agents, emotional stress, additional financial costs for both the patients and their families and finally unnecessary deaths.

HCAIs have drawn a lot of attention of patients, government and other regulatory bodies including associations, because most of these HCAIs are actually preventable. According to MOH (2011), the spread of HCAIs like Human Immunodeficiency Virus, Hepatitis and other

blood microbes commonly occur through unsafe injections, contaminated hands, sharps injuries and other unsafe medical procedures.

Infection control measures reduce the spread of HAIs and they involve immediate hand washing after exposure to lessen on the danger of disease transmission, the utilization of personal protective Equipments to reduce contact with infectious objects, as well as proper disposal of sharps reducing needle-stick injuries CDC (2010). A violation in infection control customs assists in the spread of infections either from patient to patient, patient to health workers and health worker to patient and attendants or even among staffs therefore all the HWs, attendants, patients should strictly stick on Infection Control instructions (CDC, 2010).

Knowledge, attitude and practices of the nurses influence the prevention of Hospital Acquired Infections (Aftab et al, 2015).

Globally, the knowledge about prevention and control of Hospital Acquired Infections by nurses is rated high as compared to the Attitude, Practices and compliance which are low as a result of lack of resources and training opportunities and excessive workloads in Saudi Arabia and Italy as stated by Amin and Al Wehedy (2009) and Permegiani (2010) respectively.

In Africa, a study conducted in Ethiopia employing a cross – sectional design found out that the knowledge about hand washing was fair while practice was low (Admasu, 2008). In a study carried out in northern Nigeria 421 Health Care Workers were interviewed among them 77.9% described Universal precautions and infection control. A bout 70.1% always wear gloves before handling a patient or their property. 12.6% reportedly washed their hands before wearing gloves. 10.7% washed their hands after wearing gloves and 72.4% changed gloves after handling a patient (Iliyasu et al, 2016).

Meanwhile a survey conducted in Zambia revealed inadequacy of knowledge as well as low compliance as common among the nurses therefore need to step up educational programs to improve compliance with recommended infection control guidelines (Katowa P, 2008).

In Uganda, a study conducted in the surgical, medical and obstetrics wards at Mulago National Referral Hospital in Kampala show that almost all HCWs knew to wash their hands. Hand washing was valued more as a means of self-protection than as a means of preventing patient to patient transmission, consistent with the prevailing belief that infection control was important for occupational safety. Sinks were not readily accessible, and soap at sinks was uncommon throughout the medical and obstetrics wards but more commonly available in the

surgery wards. Alcohol gel was rarely available (Charles W. Acher et al. 2010).

In view of this background, this study was conducted in Soroti Regional Referral Hospital with the purpose of assessing knowledge, attitude and practices of nurses on prevention and control of hospital acquired infections.

1.1 Problem statement

Hospital acquired infections (HAIs) have worldwide occurrence both in developed and developing countries resulting in increased morbidity and mortality among hospitalised patients and they should be controlled, mandatory using the infection control measures (WHO, 2010). Although nurses try to prevent and control infections they lack the necessary knowledge to practice infection prevention and control (CDC, 2010). This has led to the prolonged stay of the patient in the hospital, functional disability or reduced quality of life, high resistance to antimicrobial agents, emotional stress, additional financial costs for both the patients and their families and finally unnecessary deaths. The national service provision assessment survey conducted by MOH showed that only 6 % of health facilities had all infection control items while supervisory visits to health facilities in Arua District in 2006 revealed that less than 60 % of the assessed facilities implemented the required infection control measures (Christine K. Nalwadda et al, 2014).

There is low compliance to infection control precautions including hand hygiene, the use of gloves and sharps management. Many reasons for noncompliance have been identified including limited knowledge, poor staff attitude towards infection control measures (WHO, 2010).

The Ministry of health (MOH) of Uganda has put five basic measures to prevent and control Infections within the health facilities. These include hand hygiene, adequate protective wear, proper sterilization, proper sharps disposal and safe waste management (MHO, 2011). Monitoring and supervision has also been done to determine adherence to the procedures to control hospital acquired infections (MHO, 2011).

Despite all the efforts in place, patients obtain infections during their course of care. Therefore the main purpose of this study was to determine the knowledge, attitude and practices on prevention and control of HAIs among nurses in Soroti regional referral Hospital.

1.2 Objectives of the study

General objective

To determine the knowledge, attitude and practices of the nurses on prevention and control of Hospital acquired infections in Soroti Regional Referral Hospital in June 2017.

Specific objectives

1. To determine the knowledge of nurses in Soroti Regional Referral Hospital on prevention and control of Hospital Acquired Infections in June 2017.
2. To establish the attitude towards prevention and control of Hospital Acquired Infections among nurses of Soroti Regional Referral Hospital in June 2017.
3. To determine practices of the nurses in Soroti Regional Referral Hospital regarding prevention of Hospital Acquired Infection in June 2017.

1.3 Research questions

1. What is the knowledge on prevention and control of Hospital Acquired Infection among nurses in Soroti Regional Referral Hospital in June 2017?
2. What is the attitude towards prevention and control of Hospital Acquired Infection among nurses in Soroti Regional Referral Hospital in June 2017?
3. What are the practices of nurses in Soroti Regional Referral Hospital on prevention and control Hospital Acquired Infection in June 2017?

1.4 Significance of the study

The results of this study are of great benefit to the following groups of people;

Nurses; this study will provide the nurses with the valuable information they need in infection control that will increase their capacities in increasing their compliance.

Patients; being one of the reasons of this study, they will definitely be assured of their safety and improved care thus quality of life is increased, medical care costs are reduced, and length of stay in the hospital is reduced.

The hospital administrators. This study will enable them gain better insight on the knowledge, attitude and practices of the nurses on Hospital Acquired Infections prevention and control and will able them evaluate on-going or completed programmes on infection control and this can also be replicated to other health facilities in the country. Policies can also be formulated and implemented to ensure that patients are protected from infections acquired as they visit hospital facilities for health care. The policies formulated may be national or institutional and they can be translated in to context appropriately. The external stakeholders such as donor community can be informed on where to allocate funding in order to benefit both the health workers and the patients.

Nursing research; this study will also act as the guideline and source of information for other researchers and can be used to validate the infection control guidelines to improve on the patients outcomes during care.

Academicians; this study will increase knowledge needs on the already known facts about prevention and control of hospital acquired infections. This study will avail the researcher with relevant information on the knowledge, attitude and practices of the nurses on prevention and control of Hospital acquired infections as a way of promoting infection control.

1.5 A Conceptual framework

The conceptual frame work below shows the relationship between the independent and dependent variables. The dependent variable is prevention and control of HAIs and the independent variables are the knowledge, attitude and practices of the nurses at Soroti Regional Referral Hospital.

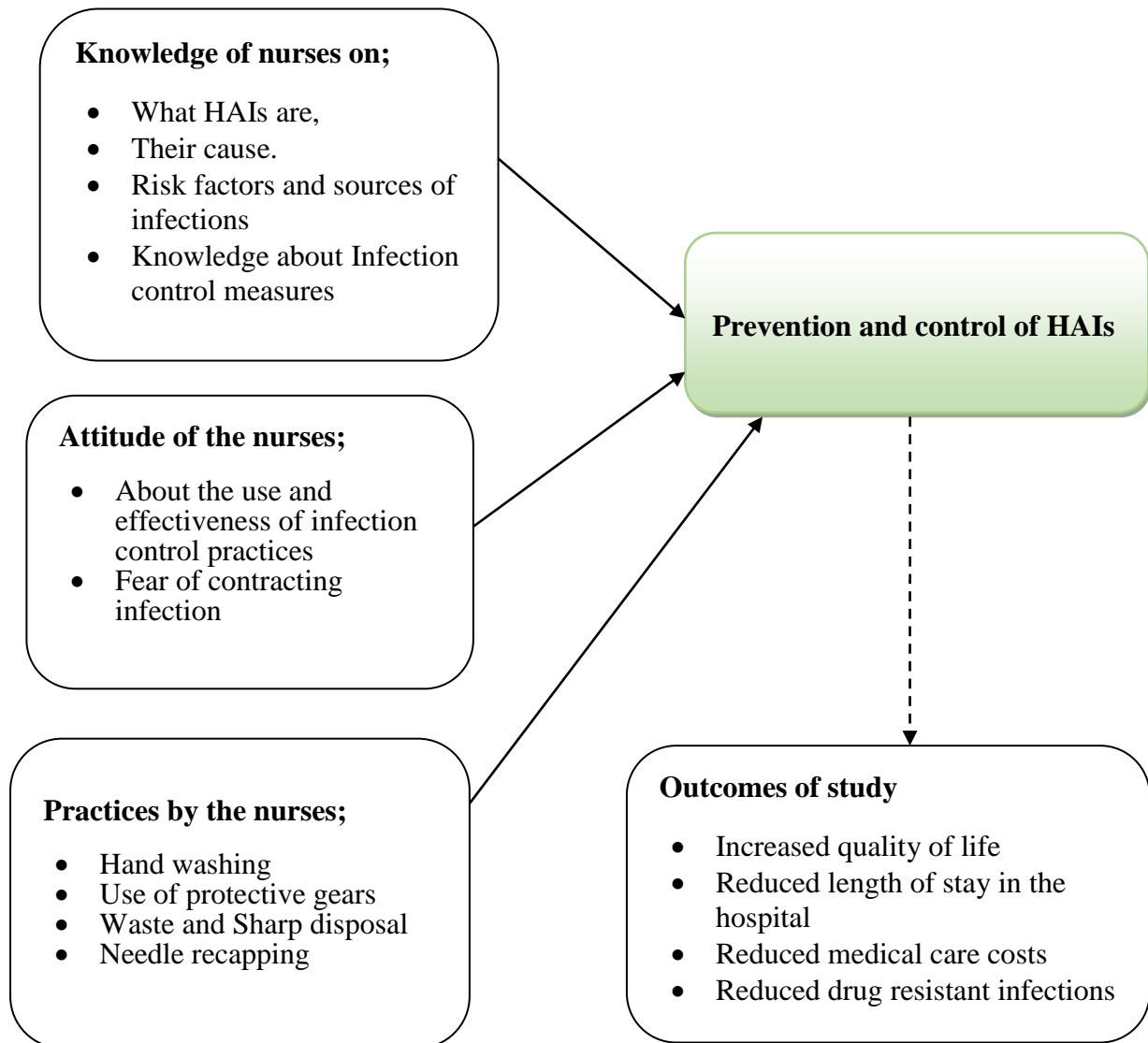


Figure 1: Conceptual frame work showing the relationship between the dependent variable (Prevention and control of HAIs) and the independent variables (knowledge, attitude and practices of the nurses).

CHAPTER TWO: LITERATURE REVIEW

2.0. Introduction

In this chapter the researcher reviews the literature that is written by other authors related to Hospital Acquired Infections. It will involve examining literature from text books, magazines, journals, dissertations, and use of data bases. The layout will be such that every objective is addressed using the available literature from previous researches, their objectives, findings and Conclusions will be discussed in this area. The International literature will be quoted first, then literature from Africa, in East Africa, Uganda and finally the regional literature on the topic of Knowledge, attitude and practices of nurses on prevention and control Hospital Acquired Infections.

HAIs occur worldwide and affect hundreds and millions of people and they are related with high rates of morbidity and mortality among patients who are admitted in the hospitals or health facility (WHO, 2009). Health workers (HWs) are as well having an increased chances of getting these infections (Iliyasu et al, 2016). Infection control measures reduce the spread of HAIs and they involve immediate hand washing after exposure to lessen on the danger of disease transmission, the utilization of Personal Protective Equipments to reduce contact with infectious objects, as well as proper disposal of sharps reducing needle-stick injuries (CDC, 2010). A violation in infection control customs assists in the spread of infections either from patient to patient, patient to health workers and health worker to patient and attendants or even among staffs therefore all the HWs, attendants, patients should strictly stick on Infection Control instructions (Yinka Vidal, 2015).

Knowledge, attitude and practices of nurses play an important role in prevention and control of HAIs and act as the pillars that make up the dynamic system of life (WHO, 2010).

2.1 Knowledge of nurses on prevention and control of HAIs.

The assessment of the knowledge of the nurses involves assessing knowledge concerning What HAIs are, their cause, risk factors and sources of infections, knowledge about infection control measures (Yatin Mehta et al, 2014).

2.1.1 Knowledge of nurses about what hospital Acquired Infections are;

Globally, a Knowledge, Attitude and Practices study conducted by Raka et al, 2012 showed that in Kawait, 16.8% of the nurses knew the definition of HAIs. The findings of the study done in Saudi Arabia showed that the level of knowledge is low regarding what HAIs are. This is attributed to lack of resources and training opportunities (Amin and Al Wehedy, 2009).

In a descriptive study conducted in two teaching hospitals of Zabol city in Iran, 170 nurses who worked in different wards such as medical, surgical, pediatric wards and dialysis units were randomly sampled to analyze the knowledge regarding standard precautions for prevention of HAIs. This study found out that 43% of the nurses involved in the study had poor knowledge regarding what HAIs are (Sarani H et al, 2014).

A cross-sectional study that was conducted to assess the knowledge, attitude, and practices of nurses regarding the prevention of HAIs at a tertiary hospital of Karachi in Pakistan using self-administered questionnaires showed a bigger gap between the knowledge concerning the spread of pathogens from fomites as well as infection control measures (Aftab HB, et al 2015).

In Africa, according to the study conducted to assess knowledge and attitude of healthcare workers (HCWs) and patients on healthcare associated infections (HAIs) in the central regional hospital in Ghana, out of 71 HCWs that were sampled 63 (88.7%) of HCWs were well informed about what HAIs are (Irene Ocran et al, 2014).

2.1.2 Knowledge of the nurses about the causes of Hospital Acquired Infections;

A total of 812 bacterial culture isolates were obtained from samples taken 48 hours and the fourth week after patient admission. In this research to investigate nosocomial infections in burns patients in Motahari Hospital, Tehran, Iran, it showed that the isolates, 40% were pseudomonas, 17% staphylococcus aureus and 27% other bacteria. Conclusively, bacteria were the predominant cause of nosocomial infections in these patients (Leila Azimi et al, 2010).

In a prospective study carried out in Intensive Care Unit (ICU) of a teaching and research Hospital, Istanbul, Turkey, it was found out that of all nosocomial infections acquired by patients, 68.8% and 27.6% of the isolates were Gram-negative and Gram-positive bacteria

respectively, and 3.6% were fungi. The most frequently isolated organisms were pseudomonas aeruginosa, followed by staphylococcus aureus, Escherichia coli and others (AK O et al, 2011).

A study carried out to assess knowledge of HWs on nosocomial infections in selected secondary health institution in Zaria, Nigeria, revealed that 57.5% of the participants knew nosocomial infection as the infections as those that manifest after 48 hours of Hospital admission and 75.9% cited bacteria as the most common cause of nosocomial infections (Samalia Ayuba Balarabe et al, 2010).

In another study conducted on the patients that had undergone operation at a Felege Hiwot Referral Hospital, Ethiopia, out of 294 patients, 10.9% were confirmed of bacterial nosocomial infections of which, staphylococcus aureus (26.2%) was dominant. In the same study, it was found that approximately 100% and 95.5% of Gram positive and negative bacterial isolates respectively showed resistance to two or more antimicrobial drugs (Wondemagegn Mulu et al, 2010).

2.1.3 Knowledge of the nurses about risk factors and sources of infections;

Nosocomial infection agents may be endogenous or exogenous, and transmitted from one source such as hands, medical devices and environment to susceptible hosts by more than one route (D.N.A Tagoe et al 2011). Some of the pathogens are transmitted by direct contact between the HWs and patients or by indirect contact with environmental surface and inanimate objects or by air (WHO, 2008).

A knowledge, Attitude and Practices study conducted by Raka et al, 2012 showed that in Kawait, 69% knew that contact is the commonest mode of transmission of this infections.

In a study involving 350 respondents to determine knowledge, attitude and practices of HWs in Kosovo Hospitals regarding nosocomial infections, 69% and 94% of the participants respectively knew that direct contact is the commonest mode of transmission of nosocomial infections and that instruments should be cleaned before sterilization and disinfection is the process of complete destruction of all form of microbial life. This study also revealed inadequacy (8.5%) of knowledge among HWs on risks of HIV transmission form one patient after needle strict injury (Raka L et al, 2006).

In a study conducted in Germany, early neonatal sepsis was found to be caused by pathogens from the maternal birth canal immediately prior to delivery. However late sepsis was associated with HWs utilization of intravascular catheters (Heeg P, 2006).

Materials used during the care of the patients such as stethoscopes, uniforms, gowns and gloves also contain pathogens. A study was conducted in Nepal to find out the level of contamination of 58 stethoscopes, to assess the practices of cleaning and disinfecting as well as suggest corrective measures for them. It was found out that 89.6% of the diaphragms, 65.5% of the bells and 72.4% of all earpieces were colonized by bacteria. It was therefore concluded that pathogenic or nonpathogenic bacteria are almost present on majority of stethoscopes used by HWs and may transmit nosocomial infections (Bhatta D.R et al, 2011).

In Africa, according to the study conducted to assess knowledge and attitude of healthcare workers (HCWs) and patients on healthcare associated infections (HAIs) in the central regional hospital in Ghana, out of 71 HCWs that were sampled 63 (88.7%) of HCWs were well informed about the sources of HAIs (Irene Ocran et al, 2014).

In a survey to determine knowledge and attitude of infection prevention and control among health sciences students at the university of Namibia, only 24.1% of all respondents were right on the environment (air, water, surfaces) as the major source of bacteria responsible for nosocomial infections (J Ojulong et al, 2013).

In Uganda, a study conducted in Lacor Hospital, showed that out of 410 patients surveyed, Nosocomial infection prevalence was 28%. It was further found out that, prevalence was more in surgery (47%) and less in Paediatrics (21%). Patients at risk were those with complications of a main disease and the most frequent infections were blood stream, surgical site and urinary tract infections respectively (Greco D and Magombe I, 2011).

2.1.4. Knowledge of nurses about Infection control measures.

Healthcare workers, especially nurses are exposed to disease causing microorganisms during the period of caring for the patients as a result they should be knowledgeable and strictly comply with use of infection control measures (Fashafsheh et al, 2015). The Practice of Infection control is so much important in reducing the acquisition of Nosocomial infections (CDC, 2010).

According to Emily R, (2011), infection control deals with factors associated with the transmission of infections either from patient to patient, patient to health workers and health worker to patient and attendants or even among staffs within the health care setting.

Infection Control includes prevention of the infections through washing of hands, use of personal protective Equipments, cleaning, disinfection and sterilization, vaccination of health workers and post exposure prophylaxis, proper waste management and safe injection practices (Yatin et al, 2014). The decisions about the level of precaution to use are based on the nature of the procedure to be done but not on the actual or assumed serological status of the patient (Elias C et al, 2016).

According to the study conducted by Sodhi K et al (2013), to assess the knowledge of 100 intensive care units nurses in Apollo Hospitals, Ludhiana, India about Infection Control measures, they stated that irrespective of advances done in the healthcare systems, the threat of HAIs is still continuing as a result of nurses lacking knowledge concerning Infection Control measures which in turn reduces compliance to their application.

Having much knowledge about the prevention of HAIs does not produce any results until when knowledge is put into practice therefore nurses should always practice the infection control measures (Yatin Mehta et al, 2014).

2.2. Attitude of nurses on prevention and control of hospital acquired infections.

Personal and organizational factors contribute to nurse's attitude both positively and negatively in relation to prevention and control of the HAIs (WHO, 2010). The in-depth assessment of the nurse's attitude involves assessing the attitude towards the effectiveness of infection control practices, and fear of contracting infection (J Ojulong, 2013).

2.2.1. Attitude of nurses towards the effectiveness of infection control practices.

Globally, there is good attitude towards the use of Personal Protective Equipments and hand hygiene before and after touching the patients. A study carried out by Ellison et al 2007 showed that 96-99% used gloves at least 95% of the time of their work. A national survey carried out in England showed out that 99% of HCWs routinely used gloves in trauma scenario but only 18-22% used face masks and eye protection respectively (Sudaram and Parkinson, 2007).

In a study carried out among 65 nurses and some physicians in intensive care units and surgical departments of 5 hospitals of varying size in the Netherlands, it was found out that hand washing was done when health workers perceived that previously had got in contact with the patient and it was done only for personal protection. It was also neglected by the senior staff who lacked role models in the hospital and convincing evidence that hand hygiene prevent cross infection (Erasmus V. et al 2009).

Health workers usually sustain injuries during the period of the patient's care some of which are not reported which contributes to negative attitude (Mondiwa, 2007). Approximately 42% of the 51% American trainee surgeons' sustained injuries during patients care (Makary et al, 2007). According to burke and madan (1997) 64% of the 91% of the UK doctors and 29% of the 54% UK nurses who got injuries was as a result of lack of time to care for patients which led to negative attitude toward post exposure prophylaxis use as they weighed time as being not important as compared to chances of getting HBV or other blood borne pathogens. Surgeons who had sustained injuries believed that the Personal Protective Equipments would have not protected them from that injury (Makary et al 2007).

According to the study conducted in Mulago Hospital, hand washing was valued more as a means of self-protection than as a means of preventing patient to patient transmission, consistent with the prevailing belief that infection control was important for occupational safety (Charles et al. 2010).

2.2.2. Attitude of fearing to contract infection by the nurses.

Nurses have the attitude of fearing to contract infections. A study conducted on the UK workers by stein et al (2003) revealed that 86% of HCWs treated individual patients as if they have blood borne pathogens. According to CDC (2002), 53.3% of nurses and midwives fear the occupational exposure most especially in contact with HIV positive patients, 93.4% were eager to know whether the patient is positive for HIV/HBV/HCV.

In Uganda, nurses suffered physical, psychological and spiritual symptoms as a result of their inability to provide optimal patient care due to moral distress. Overtime nurses lost the essence to practice and their professionalism was crippled by the constraints they encountered in their daily work (Harrowing and mill, 2010). Furthermore nurses may be knowledgeable about the universal precautions however the lack of resources is major challenge to implementing them resulting to negative attitude (Oliveira et al, 2009, Fournier et al, 2007, Mondywa, & Hauck, 2007).

A study conducted at Mulago National Referral Hospital found out that the knowledge on HCAs is high among health workers but practice is low (Charles W. Acher et al. 2010). Nurses may be forced to decide not to practice universal precautions when they have no resources at their disposal or when there is no practice guidelines this leads to a negative attitude to Ward the prevention of Hospital Acquired Infections (Nderitu, E. et al 2015).

2.3. Practices of nurses on prevention and control of HAIs.

Hospital environment or Healthcare facility act as a reservoir for many potential pathogens therefore in order to accomplish optimum prevention and control of HAIs as an organizational aim, majority of hospitals have recognized and come up with written measurable standards of prevention of this infections (Sarani, 2014). This is to eliminate and resolve the fundamental causes and prevent the transmission therefore it is an important element for quality management of patients. As part of caring for patients, nurses have the responsibility to prevent the occurrence of nosocomial infections at all times during the patients care (Yatin et al, 2014).

Practice means contemplation of the rules and knowledge that lead to action. Thus, right knowledge, a positive attitude and good practice are imperative to guide and serve the patients (WHO, 2010).

2.3.1 Hand washing practices by the nurses.

There is a connection between the transmission of HAIs and hands of HWs (WHO, 2011). The hands of health workers are the most common mode through which microorganisms are spread between patients therefore adherence to hand washing decreases the chances of spread of infections (Purva Mathur, 2011). In infection control, frequently washing hands remains the most important intervention (Amy S. Collins, 2008).

Globally, according to Lau Chun Ling (2012), hand Hygiene practice is defined as any act of hand sanitization to diminish hand colonization with temporary microbes. According to CDC, (2010) and the hand hygiene guidelines from WHO (2009), hand hygiene obedience includes hand washing, hand antiseptics, and the use of gloves followed with hand washing at the “Five moments for hand hygiene”, that is to say before touching a patient, before a procedure, after a procedure or exposure to body fluids like blood, secretions and excretions, after touching an infectious patient and after touching an infectious ambience.

In the United States, employers are required by Occupational safety and health administration (OSHA) standards to avail hand hygiene equipments such as water, soap for their employees so that they can wash their hands, mucous membrane and any other skin as soon as feasible after being in contact with blood or any other bodily fluid or contact with the patients soundings.

In reference to Pratt et al (2007), efficient hand washing procedure requires three very important steps such as preparation, washing and rinsing and the finally drying. Preparation entails soaking hands under lukewarm running water before applying any suggested amount of liquid soap or an antimicrobial preparation. The hand wash solution must get into contact with all surfaces of the hands. The hands must be massaged together for a minimum of 10-15 seconds paying particular attention to the tips of the fingers, the thumbs and the areas between the fingers. Hands must then be rinsed carefully before drying with a hand washing towel.

In Africa, a study conducted in Ethiopia physicians reported performing hand hygiene 7% and 48% before and after patient contact, respectively. Barriers for performing hand hygiene include lack of hand hygiene agents (77%), sinks (30%), and proper training (50%) as well as irrigation and dryness (67%) caused by hand sanitizers made in accordance with the WHO formulation (Admasu, 2008). In a study carried out by African Health Sciences (2005), Makerere Medical School on promotion of hand washing as a measure of quality of care and prevention of hospital acquired infections in Eritrea, the objective was to assess the quality of care with respect to hand washing practice as a routine measure of infection in Keren hospital. Semi-structured interviews and focus group discussions were held with 34 members of the hospital staff; and a total of 30 patients in the medical, surgical and obstetric wards were interviewed. Direct observation of hand washing practice and facilities were also employed. Only 30% of health workers routinely washed their hands between patient contacts. They concluded that Hospital-based health workers' hand washing practice needs to improve globally. There is no room for complacency, particularly with respect to women and childbirth.

In Uganda, According to Ministry of Health (MOH, 2013), hygiene is the only one most vital way of preventing the nosocomial infections in the hospital or any other health facility and that when there is good or proper hygiene in the health facility, the levels of contamination is reduced by 70 percent. In addition, hygiene in the health facility could be in the form of personal hygiene which involves general cleanliness of the whole body, facility hygiene

which also entails clean environment to reduce the amount of microbes and as well reducing the transmission of infection in the hospital, instrument hygiene which is the cleaning of all the equipments that have been used in the management of all the patients and finally hand hygiene which acts as the most effective way of avoiding the transmission of infection between the health workers and their patients in the hospitals.

A study conducted in the surgical, medical and obstetrics wards at Mulago National Referral Hospital in Kampala showed that almost all HCWs knew to wash their hands that is they followed the hand washing steps. Sinks were not readily accessible in facility, and they used the recommended type of soap by the Ministry of Health guidelines but it was uncommon at sinks throughout the medical and obstetrics wards but more commonly available in the surgery wards and alcohol gel was rarely available in all the wards under study (Charles W. Acher et al. 2010).

2.3.2 Use and frequency of use of Personal protective equipments by the nurses.

Personal protective equipments are items that protect a worker from any form of hazard. In healthcare environment, the hazards are getting in contact with body fluids such as blood, saliva, urine and other body fluids as well as exposure to aerosols that may carry disease causing pathogens. Personal Protective Equipments including Gowns, gloves, goggles, face shields, surgical masks, CPR masks, bonnets, respirators and shoe covers create a physical barrier that prevents direct contact of health worker with a potentially infectious material therefore the health workers should always wear this equipments (Subash Vijaya Kumar et al, 2012).

In order to avoid cross infections as well as difficult or high costs of disinfecting this equipments, most of the equipments are disposable therefore they should be immediately removed, disinfected or disposed before the health worker leaves the area of work where he or she was exposed to pathogens (United States, OSHA).

A study conducted by Garretson et al 2004 and Chen et al, 2003 showed that lack of proper equipment and surveillance systems for the monitoring of infections further increased the episodes of nosocomial infections.

One of the factors alleged as barrier to practice of infection control actions is the lack of Personal Protective Equipments available such as masks and gloves and other supplies. In Reference to a study by WHO (2009), participants acknowledged that they often came across

circumstances where they must use PPE, but was not possible due to unavailability of such equipments.

A national survey throughout England found out that 99% of HCWs routinely used gloves in trauma scenario but only 18-22% used face masks and eye protection respectively (Sudaram and Parkinson, 2007).

In Africa a cross-sectional descriptive survey conducted on 115 nurses at the Lome Campus Teaching Hospital in Togo to assess the knowledge, the attitudes, and the practices of hospital nursing staff in relation to the infectious risks of the hepatitis B and C viruses, revealed that 75.5% did not use gloves regularly, 34.8% of the nurses had a needle-stick injury, but only 8.8% reported this injuries (Bagny A et al, 2013).

In Uganda, a study conducted at Kabuyanda health centre four by Ann Lolordo (2008), showed that the staff didn't wear personal protective gears like safety goggles, gloves and masks when examining and waste disposal wasn't segregated and disposed.

2.3.3 Waste and Sharp disposal by the nurses.

Waste reduction, segregation and disposal are all crucial in sustaining a healthy environment and reducing subsequent public health implications and financial costs such as additional costs related to the disposal of wastes if not segregated appropriately (RCN, 2011). In the hospital setting, the problem of waste management is improper segregation of infectious and non-infectious wastes (Sarani, 2014). Hospital wastes must be segregated at their point of origin in order to prevent the occurrence of hospital acquired infections (Tirthankar, 2013).

In across sectional study conducted by a pre-tested semi structured questionnaire and observational technique one hundred and twenty HCWs 70 hospital staff including the nurses and technicians at the two Government District Hospitals Mangalore India, Yamani and colleagues found out that of the 120 participants, the majority (85.8%) was aware of disposing used needles and syringes in puncture-resistant containers but only 55.7% were actually practicing it. Three-fourth (75.8%) of the participants were aware of not recapping the needles after use but on observation, only 35.4% were practicing this. All health workers were aware about the indication for using masks and gloves handling patients, while handling patients, while only 76.1% were using them. They also found out that only 61.8% washed their hands after attending to every patient, 94.3% cleaned their area with sterile swab before giving injections and only 35.7% of the labs/ wards/ operation theatres had three colored

bags. Few (11.7%) of the workers have already been exposed to infectious blood samples and some (19.2%) are still not immunized against Hepatitis. The study concluded that there is need for improvement in the perception and practice of infection control measures among health workers for both self and patient's protection.

In a study carried out in Lao, Tokyo, Japan to investigate health care waste segregation and factors influencing its management, a high proportion of incorrectly segregated medical waste was found at each level of health care facility. It was revealed on re segregation that 39%, 62%, 57% and 37% of the waste at national, provincial and district hospitals and health center level, respectively was poorly segregated (Phengxay S et al, 2005).

According to Kevin Pudussery, 2011, in a research carried out on the medical waste management in university hospitals of Norfolk and Norwich, it was revealed that, an onsite incinerator with an actively functioning waste management program was important in any hospital to reduce on waste accumulation thus decrease on the occurrence of Nosocomial infections. It was found out that the administrators of only one fourth of the eight participating hospitals in a study to assess the current practices of waste management in Karachi provided its waste handlers with protective gears. It was further identified that 62.5% of the hospitals had waste storage areas, 62.5% incinerated their wastes, 12.5% without any treatment burnt their wastes in the open and 25% publically disposed off their wastes (shahida Rasheed et al, 2005).

In Uganda, on average 92 Kg of waste is generated in hospitals per day, 40 percent of which is hazardous, a health center level IV generates average of 42 Kg per day while level III and level II health centers generate 25 Kg and 20 Kg per day respectively (MOH, 2011).

Another study conducted on management and generation of health care wastes in two hospitals in Kampala found that infectious waste from Nsambya hospital was 0.23Kg per patient per day and 0.25Kg per patient per day in Mulago hospital (Mugembe et al, 2011).

According to the study conducted at Kabuyanda health centre four by Ann Lolordo (2008), it was reported by Dr. Bihamizo that facility staff left syringes and sharps on the table in an examination room instead of disposing them in a puncture resistant container simply because the containers were full or out of rich. The staff didn't wear personal protective gears like safety goggles, gloves and masks when examining and waste disposal wasn't segregated and disposed

The study conducted in Soroti Regional referral hospital revealed poor waste management that was associated with poor segregation of waste, lack of waste management plan, inadequate waste management and coordination structure, ineffective and inefficient incineration equipment and lack of comprehensive waste management policies and guidelines (Enyenu Eyoku et al, 2014).

2.3.4 Needle recapping by the nurses.

According to a study conducted in India, 90% of the doctors and 88% of nurses, and laboratory staff disposed their sharps well and 60% of doctors and 38% of nurses, laboratory staff never recapped (Kotowal and taneja 2010).

According to Sadoh et al (2006) and Iaraquid et al (2009) the practice of recapping of needles was found to be still common in health settings, 31.9% of Nigerian nurses, doctors, anesthetists and laboratory scientists, 47.3% of Moroccan nurses, nurse assistants and supporting staffs recapped used needles. A study conducted in Nigeria showed only 32.9% of HCWs didn't recap needles (Ibeziako and Ibekwe, 2006).

In Uganda the Ministry of Health in collaboration with WHO has ensured the availability of the Auto – disabling Syringes that are for single use and the sharps boxes for proper disposal of sharps.

A study conducted to determine the implementation of infection control in health facilities and determine predictors of hand washing among healthcare workers in Arua district, showed out high levels of needle recapping (34.4 %) observed at the health facilities. This finding was as a result of the lack of clear guidelines on needle recapping (Wasswa et al. 2015).

CHAPTER THREE: METHODOLOGY

3.0. Introduction

This chapter shows methodology that was used to obtain the data to answer the research questions on knowledge, attitude and practices of the nurses on prevention and control of Hospital acquired infections in Soroti Regional Referral Hospital. These methods include study design, the research area, the population, sample size determination, eligibility, study variables, sources of data, data collection technique, tool, data analysis plan, quality control, ethical considerations, limitations of study and plan for dissemination.

3.1. Study design.

This study was a descriptive cross-sectional study and it involved quantitative data collection methods on knowledge, attitude and practices of nurses on prevention and control of Hospital acquired infections. It was aiming at obtaining data on a representative sample of nurses at a specific period of time.

3.2. Study area.

This study was carried out at Soroti regional referral hospital in Soroti district in eastern Uganda. It is one of the 13 public regional referral hospital in the country located in Soroti town, approximately 291 kilometers (181 miles), by road, northeast of Kampala. It was opened as a syphilis treatment center in the mid-1920s, it became a district hospital in 1978, and was elevated to a regional referral hospital in 1996. It offers both general and specialized services to a population of approximately 2 million people from the districts of Soroti, Amuria, Kaberamaido, Kawakawa, Serere, Ngora, Kumi and Bukedea with a bed capacity of 251 beds. According to the hospital records, there are about 280 health workers and nurses are about 100 in number. The services offered include the following; maternal and child health care, dental care, medical, radiography, surgical, Ear Nose and Throat, HIV testing and counseling, and mental health services. This hospital was selected because it is among the regional hospitals.

3.3. Sources of data.

- a) **Primary:** The main source of data was through interview of the nurses about the prevention and control of hospital acquired infections in Soroti regional referral hospital.

b) **Secondary data:** These data was obtained from the prevalence rates reports from records department and quality control committee of Soroti regional referral hospital.

3.4. Study population

a) **Target population:**

The target population in this study included the nurses who care for patients.

b) **Accessible population:**

The exact population included the nurses who were available during the time of study.

3.5. Eligibility Criteria

Inclusion criteria

- i) Nurses who were officially employed by the hospital.
- ii) The nurses that were available on duty during the period of study.
- iii) The nurses who consented and accepted to respond.

Exclusion criteria

- i) Nurses who were off duty during the period of study.
- ii) Nurses who were around and are busy or engaged doing other work.
- iii) All the other health care workers who are not nurses and student nurses.

3.6 Sample size calculation

Yamane's formula was used to estimate the sample size.

$$n = \frac{N}{1 + N(e)^2}$$

Where; n - The sample size

N - The population size

e- The desired level of precision (0.05) at 95% confidence interval

Therefore;

$$\begin{aligned}n &= 100 / 1 + 100 (0.05)^2 \\n &= 100 / 1 + 100 (0.0025) \\n &= 100 / 1 + 0.25 \\n &= 100 / 1.25 \\n &= 80\end{aligned}$$

In addition, a 10% of the sample size was added to account for non-response and damaged questionnaires and other tools = 8

So, sample size was, n = **88** respondents.

3.7. Sampling procedure

A simple random sampling method was used to select participants for the study. The researcher approached the nurses who were accessible in the course of the study at the particular wards and the reason for conducting the study was explained to them and requested to participate. Nurses who wished to participate in the study were given a consent form to read and sign.

3.8. Study variables

3.8.1. Dependent variables

Dependent variable in this study was prevention and control of hospital acquired infections.

3.8.2. Independent variables

- a) **Knowledge of nurses on;** What HAIs are, their causes, risk factors and sources of infections, knowledge about Infection control measures.
- b) **Attitude of the nurses;** about the use and effectiveness of infection control practices, appropriate hand hygiene practices, and fear of contracting infection.
- c) **Practices by the nurses;** Hand washing, use and frequency of use of protective gears, waste and Sharp disposal, and needle recapping.
- d) **Expected Outcomes of study;** increased quality of life of the patients, reduced medical care costs for the patients, reduced length of stay in the hospital and reduced drug resistant infections for the patient.

3.9. Data collection techniques

The researcher used self-administered questionnaires to collect data. Rapport was created with the nurses then questionnaires distributed to eligible participants at various shifts. Completed questionnaires were retrieved immediately after completion which accounted for response rate. Data was collected in a period of 5days (Monday – Friday) to allow for coverage of the participants who were on shift duties. Data collection was for a period of four hours daily. The nurses would be got in their respective wards and on average about ten respondents were contacted daily.

3.10. Data collection tools

Data collection from the respondents was done using a self-administered and semi-structured questionnaire on knowledge, attitude and practices of nurses on Hospital acquired infections, and interview guides were used to collect data from key informants. The research instruments was divided into three sections in accordance to the objectives and also socio-demographic data was as well included.

3.11. Data management.

Data that was collected, checked for completeness and was kept under key and lock to ensure that no unauthorized person accessed it. Data was entered into Epidata software and exported to SPSS software where it was cleaned and analyzed.

3.12. Plan for data analysis

Data concerning knowledge, attitude and practices of nurses related to prevention and control of hospital acquired infections in Soroti regional referral hospital was analyzed and conclusions were made. The response from the participants were collected; every single questionnaire was checked entirely for legibility, mistakes and any missing data to ensure privacy. Information which is not clear was retrieved from the participants. The data was further analyzed using statistical computer package such as EPIDATA version 3.1, SPSS version 20.0, Microsoft excel, graphs, tables, pie charts and percentages were derived.

3.13. Quality control issues

Data was collected by a single researcher. The data was entered two times by two different people to make sure that data is correct in quality and uniformity. The pretest of the tool was done at Kumi Hospital, refining and evaluation was done among 5 nurses who work there. This helped provide clarity, validity, sequencing and insight on how much time would be required to administer each instrument. Changes were made according to the results. Great care was taken when coding, entering, verifying and cleaning data.

3.14. Ethical issues.

A competed research proposal was submitted to the supervisor for approval. Clearance was made by the finance and the Letter of introduction was issued which was presented at Soroti regional referral hospital for permission to conduct this study. All participants were required

to sign informed consent forms prior to answering the questionnaire. The objectives, nature and significance of the research study was explained to all participants with the emphasis on voluntary participation and the right to pull out at any given time from the study without being penalized. Participant's confidentiality was maintained, they took part in the study anonymously, and no names were put on the questionnaires.

3.15. Limitations to the study

Some health workers were so conservative with information, so finding information was not easy as they had limited interest.

3.16. Plan for dissemination.

The findings of the study will be presented to International Health Sciences University for the fulfilment of the requirements for the award of the bachelor's degree in nursing science and to be kept in the library as reference for other researchers and also to Soroti regional referral hospital to enable the hospital administrators gain better insight on the knowledge, attitude and practices of the nurses on Hospital acquired infections prevention and control as well as able them evaluate on-going or completed programmes on infection control.

CHAPTER FOUR: PRESENTATION OF RESULTS

4.0. Introduction

This chapter presents the results of the findings from the study on knowledge, attitude and practices of nurses on prevention and control of hospital acquired infection in Soroti regional referral hospital and the analysis of these results. A total of 88 participants from different wards were included in the study. The results are presented in accordance with the specific objectives of the study using tables, graphs and charts.

4.1. Socio demographic characteristics of respondents.

Table 1: Socio Demographic characteristics of the respondents.

Demographic characteristics	Frequency	Percent	
Gender	Male	30	34.1%
	female	58	65.9%
	Total	88	100.0%
Cadre	Enrollment	26	29.5%
	Diploma	43	48.9%
	Degree	19	21.6%
	Total	88	100.0%
Age	<20 years	13	14.8%
	21-29 years	43	48.9%
	30-39 years	17	19.3%
	40-49 years	7	8.0%
	>50 years	8	9.1%
	Total	88	100.0%
Speciality	Surgery	19	21.6%
	Paediatrics	23	26.1%
	Accident & emergency	19	21.6%
	Medical	27	30.7%
	Total	88	100.0%
Experience	<1 year	5	5.5%
	1 year	16	18.2%
	1-5 years	51	58.0%
	>5 years	16	18.2%
	Total	88	100.0%

As seen in the table 1, 65.9% the respondents were female while 34.1% of were male. The diploma nurses constituted 48.9%, enrolled nurses 29.5%, and 21.6% of the respondents were graduates with degree award. Greater percentage of the respondents were diploma holders.

Majority of the respondents (48.9%) were aged 21-29 years, 19.3% were aged 30-39 years, 14.8% were aged < 20 years while 9.1% were > 50 years and those who were aged 40-49 were 8.0% of the respondents. 30.7% of the respondents were from the medical ward, 26.1% were from Paediatrics, 21.6% from surgery, and 21.6% from Accident and emergency. 58.0% of the respondents were with experience of 1-5 years, 18.2% were with 1 year, 18.2% were with > 5 years, and 5.5% of the respondents were with < 1 year experience.

4.2. Knowledge of the Nurses on prevention and control of Hospital Acquired Infections

Table 2: Knowledge of the Nurses on prevention and control of Hospital Acquired Infections.

Knowledge on prevention and control	Response	Frequency	Percent
What do you understand by hospital acquired infections?	Very correct	45	51.1%
	Correct	33	37.5%
	Incorrect	5	5.7%
	No response	5	5.7%
	Total	88	100.0%
What are the organisms that commonly cause infections in hospital?	Very correct	2	6.4%
	Correct	50	56.8%
	Incorrect	1	1.1%
	No response	5	5.5%
	Total	88	100.0%
Name three potential infectious materials from patients that contribute to hospital acquired infections.	Very correct	47	53.4%
	Correct	31	35.2%
	Incorrect	10	11.4%
	No response	0	0%
	Total	88	100.0%
Are you aware of universal infection control?	Yes	78	88.6%
	No	10	11.4%
	Total	88	100.0%
If yes in above, can you name them	Very correct	41	52.6%
	Correct	29	37.2%
	Incorrect	8	10.2%
	Total	78	100.0%
The universal precautions to observed?	At all times	65	73.9%
	Sometimes	20	22.7%
	Not at all	3	3.4%
	Total	88	100.0%

Table 2, presents information regarding knowledge of the respondents on prevention and control of Hospital Acquired Infections. 51.1% of the respondents were very knowledgeable about what hospital acquired infections are that is to say infections obtained by the patient, 48 hours after admission at the hospital or a health facility, 37.5% of the respondents were quite knowledgeable, 5.4% of the respondents had no knowledge regarding what Hospital Acquired Infections are and 5.4 % of respondents did not respond.

As regards knowledge about the organisms that cause the infection in the hospital, the most correct answer was the following; bacteria, viruses, fungi and protozoa. 56.8% quite knew the correct answer (not all the above), 6.4% of the respondents gave the most correct answer that is all the above, while 5.7% had no idea about the organisms that causes this infections.

53.4% of the respondents stated very correctly the potentially infectious materials from patients, that is to say all the following; blood, urine, stool, vomit, sweat, pus, and sputum, 35.2% of the respondents stated correctly (some of the above) and 11.4% of the respondents stated incorrectly the potentially infectious materials.

On the other hand 88.6% of the respondents said they knew the universal infection control while 11.4% had no idea about universal infection control. Out of the 78 respondents who said they knew the universal infection control. 52.6% stated them all, 37.2% fairly stated them correctly and 10.2% failed to state the universal infection control correctly.

73.9% of the respondents accepted that the universal precautions to be observed at all times while 22.7% of the respondents agreed that they should be observed sometimes and 3.4% agreed that they should not be observed at all.

Table 3: Knowledge of nurses on prevention and control of hospital acquired infections.

Knowledge on prevention and control	Response	Frequency	Percent
The single most important measure for preventing HAI is hand washing.	Agree	77	87.5%
	Disagree	8	9.1%
	Uncertain	3	3.4%
	Total	88	100.0%
Hospital infections are caused by bacteria, viruses, fungi and protozoa	Agree	82	93.2%
	Disagree	5	5.7%
	Uncertain	1	1.1%
	Total	88	100.0%
HAIs are transmitted through body fluids, staff hands and reusable equipment	Agree	75	85.2%
	Disagree	12	13.6%
	Uncertain	1	1.1%
	Total	88	100.0%
Gloves do not protect the health workers from acquiring the infections	Agree	2	2.3%
	Disagree	85	96.6%
	Uncertain	1	1.1%
	Total	88	100.0%
Immunisation is not a universal precaution	Agree	75	85.2%
	Disagree	10	11.1%
	Uncertain	3	3.4%
	Total	88	100.0%
Sterilisation is a process of killing microorganisms spores	Agree	78	88.6%
	Disagree	7	7.9%
	Uncertain	3	3.4%
	Total	88	100.0%
Sterile technique is not necessary in nasogastric feeding	Agree	78	88.6%
	Disagree	8	9.1%
	Uncertain	2	2.3%
	Total	88	100.0%
HAI is synonymous to nosocomial infection	Agree	75	85.2%
	Disagree	12	13.6%
	Uncertain	1	1.1%
	Total	88	100.0%
Moisture enhances the transmission of microorganisms	Agree	81	92.1%
	Disagree	6	6.8%
	Uncertain	1	1.1%
	Total	88	100.0%
Alcohol is an effective disinfectant when rubbed in skin	Agree	80	90.9%
	Disagree	5	5.7%
	Uncertain	3	3.4%
	Total	88	100.0%

Table 3 above, shows information on knowledge of nurses regarding prevention of hospital acquired infections. 87.5% of the respondents agreed that the single most important measure for preventing Hospital Acquired Infections is hand washing while 9.1% disagreed and 3.4% were uncertain.

Regarding the cause of Hospital Acquired Infections, 93.2% of the respondents confirmed that hospital infections are caused by bacteria, viruses, fungi and protozoa while 5.7% of the respondents said these organism are not responsible for the cause of infections in the hospital while 1.1% of the respondents were uncertain.

On the question of transmission of Hospital Acquired Infections due to body fluids, staff hands and reusable equipment, 85.2% of the responded agreed that its true while 13.6% of the respondents said it's not true, it's because of others factors.

96.6% of the respondents disagreed on the question that gloves do not protect health workers from acquiring infections while 2.3% agreed that gloves do not protect health workers from acquiring the infections in the hospital.

85.2% of the respondents agreed that immunization is not a universal precaution, 11.1% of the respondents disagreed that immunization is not a universal precaution while 3.4% of the respondents were uncertain about whether immunization is not a universal precaution.

88.6% of the respondents agreed that Sterilization is a process of killing microorganism spores, while 7.9% of the respondents disagreed and 3.4% of the respondents were uncertain. 88.6% of the respondents agreed that sterile technique is not necessary in nasogastric feeding, while 9.1% disagreed and 2.3% were uncertain.

Majority of the respondents (85.2%), agreed that Hospital acquired infections is synonymous to nosocomial infection, while 13.6% disagreed and 1.1% were uncertain.

92.1% of the respondents agreed that moisture enhances the transmission of microorganisms, while 6.8% disagreed and 1.1% were uncertain.

Majority of the respondents (90.9%) agreed that alcohol is an effective disinfectant when rubbed in skin, while 5.7% disagreed and 3.4% were uncertain.

In general, the respondents are more knowledgeable about prevention and control of Hospital Acquired Infections as indicated by the results.

Table 4: Cross tabulation between demographic factors with knowledge.

		Experience of respondents					
	Response	<1 year	1 year	1-5 years	>5 years	Total	P value
What do you understand by HAIs?	Very correct	0(0%)	9(10.2%)	27(30.7%)	9(10.2%)	45(51.1%)	0.211
	Correct	5(5.7%)	5(5.7%)	16(18.2%)	7(8.0%)	33(37.5%)	
	Incorrect	0(0%)	1(1.1%)	4(4.5%)	0(0%)	5(5.7%)	
	No response	0(0%)	1(1.1%)	4(4.5%)	0(0%)	5(5.7%)	
	Total	5(5.7%)	16(18.2%)	51(58.0%)	16(18.2%)	88(100.0%)	
		Speciality of the respondents					
	Response	Surgery	Paediatrics	Accident & emergency	Medical	Total	P value
What are the organisms that commonly cause infections?	Very correct	10(11.4%)	10(11.4%)	3(3.4%)	9(10.2%)	32(36.4%)	0.046
	Correct	9(10.2%)	13(14.8%)	12(13.6%)	16(18.2%)	50(56.8%)	
	Incorrect	0(0%)	0(0%)	1(1.1%)	0(0%)	1(1.1%)	
	No response	0(0%)	0(0%)	4(4.5%)	1(1.1%)	5(5.7%)	
	Total	19(21.6%)	23(26.1%)	19(21.6%)	27(30.7%)	88(100.0%)	
		Cadre of the respondents					
	Response	Enrollment	Diploma	Degree	Total	P value	
Name three infectious materials from patients	Very correct	8(9.1%)	25(28.4%)	14(15.9%)	47(53.4%)	0.002	
	Correct	10(11.4%)	16(18.2%)	5(5.7%)	31(35.2%)		
	Incorrect	8(9.1%)	2(2.3%)	0(0%)	10(11.4%)		
	Total	26(29.5%)	43(48.9%)	19(21.6%)	88(100.0%)		

Cross tabulation between the socio-demographic factors such as experience, cadre and specialty of the respondents and knowledge was done to see whether there is a relationship between the two variables. As it's indicated in table 4, nurses with experience 1-5 years and above 5 years stated correctly what Hospital Acquired Infections are while nurses with experience of below and 1 year did not give the most correct answer. The P value of 0.211 is greater than the observed statistical value of 0.05 which means that the difference in knowledge regarding Hospital Acquired Infections among the nurses is not significant.

As regards specialty of the respondents, results indicate that, Surgery, Paediatrics and Medical are more knowledgeable about the common causes of infections while the Accident and Emergency specialists are less knowledgeable about the common causes of infection in the hospital. The P value of 0.046 which is less than 0.05 signifies that there is a significant difference in knowledge regarding common causes of hospital acquired infections among the respondents.

On the cadre of education of the respondents results indicate that diploma (28.2%) and degree holders (15.9%) are more knowledgeable about infectious materials from patients than the enrolled (9.1%). The P value 0.002 is less than 0.05 and this implies that there is significant

difference in knowledge about infectious materials from patients by the education level of the respondents.

Conclusively, cadre and specialty of the respondents influence their knowledge regarding the prevention and control of hospital acquired infections.

4.3. Attitude of the respondents towards prevention and control of Hospital Acquired Infections.

Table 5: Attitude of the respondents towards prevention and control of Hospital Acquired Infections

Attitude of the respondents towards control and prevention of HAIs	Response	Frequency	Percent
How do you perceive risk of getting infectious disease?	No risk	12	13.6%
	Moderately risky	24	27.3%
	Highly risky	52	59.1%
	Total	88	100.0%
Every patient should be treated as if he/she carries blood born disease	Stronly agree	72	81.8%
	Agree	16	18.2%
	Total	88	100.0%
How do you perceive risk of transmitting an infectious disease?	No risk	30	34.1%
	Moderately risky	26	29.5%
	Highly risky	32	36.4%
	Total	88	100.0%
Are you comfortable with the infetion control in this facility?	Very much	32	36.4%
	Somehow	41	46.6%
	No	15	17.0%
	Total	88	100.0%
When do you actually observe this practices	Always	73	83.0%
	Sometimes	15	17.0%
	Total	88	100.0%

Table 5, presents results regarding the attitude of respondents towards prevention and control of hospital acquired infections. On perceiving the risk of getting an infectious diseases 59.1% of the respondents perceived high risk of getting infectious disease, 27.3% stated moderate risk while 13.6% of the respondents stated no risk of getting infectious disease in the hospital.

81.8% of the respondents strongly agreed that every patient should be treated as if they carry blood borne pathogens while 18.2% agreed that every patient should be treated as if he/she carries blood borne pathogens.

As regards to the perception of risk of transmitting an infectious disease, 36.4% of the respondents conformed that it's very much risky, while 34.1% of the respondents said that it's not risky, and 29.5% of the respondents stated moderate risk.

Concerning the comfort with infection control of the facility, 46.6% of the respondents stated that they were somehow comfortable with infection control practices in the facility, while 36.4% stated they are much comfortable and 17.0% of the respondents said that they are not comfortable with the infection control practices in the facility.

On the same note, 83.0% of the respondents stated that they always observe the infection control practices while 17.0% stated that they observe them sometimes.

In general the majority of the nurses (83.0%) had positive attitude towards use and effectiveness of infection control measures while 81.8% had attitude of fearing to hospital acquired infections.

Table 6: Cross tabulation between demographic factors and attitude.

		Speciality of the respondents					
	Response	Surgery	Paediatrics	Accident & emergency	Medical	Total	P value
How do you perceive risk of getting infectious disease?	Not risky	3(3.4%)	0(0%)	5(5.7%)	4(4.5%)	12(13.6%)	0.000
	Moderately risky	4(4.5%)	15(17.0%)	1(1.1%)	4(4.5%)	24(27.0%)	
	Highly risky	12(13.6%)	8(9.1%)	13(14.8%)	19(21.6%)	52(59.1%)	
	Total	19(21.6%)	23(26.1%)	19(21.6%)	27(30.7%)	88(100.0%)	
		Cadre of respondents					
	Response	Enrollment	Diploma	Degree	Total		P value
Every patient should be treated as if they carry blood borne pathogens	Agree	24(27.3%)	33(37.5%)	15(17.0%)	72(81.8%)		0.250
	Diagree	2(2.3%)	10(11.4%)	4(4.5%)	16(18.2%)		
	Total	26(29.5%)	43(48.9%)	19(21.6%)	88(100.0%)		
		Experience of respondents					
	Response	<1 year	1 year	1-5 years	>5 years	Total	P value
Do you think infection control measures are worthy trying?	Worth trying	5(5.7%)	15(17.0%)	51(58.8%)	11(12.5%)	82(93.2%)	0.000
	Not worthy	0(0%)	1(1.1%)	0(0%)	5(5.7%)	6(6.8%)	
	Total	5(5.7%)	16(18.2%)	51(58.0%)	16(18.2%)	88(100.0%)	

A cross tabulation between socio-demographic characteristics of the respondents such as cadre of education, experience and specialty was done to determine whether there is any significant relationship. As indicated by the results on table 6, as regard specialty of the respondents, the Surgery, accident and emergency and medical have more positive attitude towards risk of getting infectious diseases than Paediatrics with low attitude. The P value is 0.000 which signifies that there is significant difference in attitude towards getting infectious diseases by the specialty of the respondents.

As regard to education cadre of the respondents, results show that, diploma nurses (37.5%) and enrolled nurses (27.3%) strongly agreed that every patient should be as if he/she carry blood borne pathogens while nurses who are degree holders (17.0%) had a low attitude towards that. The p value is 0.250 which shows that there is no significant difference in attitude towards treating every patient as carrying blood borne pathogens as regard education cadre of the respondents.

Results also indicate that nurses with experience of 1 and 1-5 years have positive attitude towards trying to practice infection control measures while nurses with experience of above 5 years seem to have negative attitude towards trying control measures.

In general, the experience of the respondents influences their attitudes towards trying infection control measures.

4.4. Practices of nurses on prevention and control of hospital acquired infections

Table 7: Practices of nurses on prevention and control of hospital acquired infections.

Practices of respondents regarding control and prevention of HAIs	Response	Frequency	Percent
Should you recap a needle after use?	Yes	8	9.1%
	No	80	90.9%
Is it necessary to categorise hospital wastes before disposal?	Yes	79	89.8%
	No	9	10.2%
How do you dispose infected materials from patients?	Waste segregation and incineration	14	15.9%
	Waste segregation	59	67.0%
	Incineration	3	3.4%
	Disinfect before disposal	9	10.2%
	Uncertain	3	3.4%
If you accidentally touch patient's blood, what do you do?	Wipe with cotton wool	15	17.0%
	Wash with soap and water	60	68.2%
	Wash under running water	13	14.8%
Do you wash hands between patients?	Yes	70	79.5%
	No	18	20.5%
Do you always use personal protective equipment?	Yes	77	85.5%
	No	11	12.5%
Do you place disposable sharps in safety box immediately after use?	Sometimes	3	3.4%
	Always	85	96.6%
Do you use gloves when doing procedure?	Sometimes	3	3.4%
	Always	85	96.6%

Table 7 above, shows results on practices of the respondents regarding control and prevention of hospital acquired infections. 90.9% of the respondents stated that they don't recap needles after use while 9.1% of the respondents said they recap needles after use.

89.8% of the respondents confirmed that they categorize hospital wastes before disposal while 10.2% said they do not categorize the wastes before disposal.

67.0% of the respondents stated that they dispose infected material from patients using only waste segregation, 15.9% of the respondents stated that they use both waste segregation and incineration as methods of disposing infected materials from patients, 10.2% disinfect first before disposal, 3.4% dispose infected material from patients by incineration alone, and 3.4%

of the respondents were not certain of the methods they use to dispose infected materials from patients.

In case one accidentally touches patient’s blood, 68.2% of the respondents stated that they wash the blood with soap and water immediately, 17.0% of the respondents said they wipe it with cotton wool, while 14.8% said they wash it under running water.

79.5% of the respondents confirmed that they wash hands between patients while 20.5% stated that they do not wash hands between patients.

85.5% of the respondents stated that they always use personal protective equipment during practice while 12.5% of the respondents said they do not use protective equipment during practice.

Majority (96.6%) of the respondents stated that they place disposable sharps in safety box immediately after use while 3.4% of the respondents stated that they sometimes place disposable sharps in safety box immediately after use.

Results also indicate that, 96.6% of the respondents always use gloves when doing procedure while 3.4% of the respondents sometimes use gloves when doing procedure.

Table 8: Ways to reduce transmission of hospital acquired infections.

		Responses		Percent of Cases
		N	Percent	
Ways to reduce transmission of hospital infections	Hand hygiene	62	23.0%	70.5%
	Adequate protective gear	39	14.4%	44.3%
	Proper sterilization	33	12.2%	37.5%
	Proper sharp disposal	21	7.8%	23.9%
	safe waste management	46	17.0%	52.3%
	proper bed spacing	19	7.0%	21.6%
	Proper ward ventilation	18	6.7%	20.5%
	Isolation	32	11.9%	36.4%
Total	270	100.0%	306.8%	

Table 8 presents results of multiple responses regarding ways to reduce transmission of hospital infections. 70.5% of the respondents stated that hospital acquired infections can be prevented through hand hygiene, 52.3% of the respondents said through safe waste management, 44.3% said through adequate protective gears, 37.5% said through proper sterilization, 36.4 stated through isolation, 23.9% believe that hospital acquired infections can be prevented through proper sharp disposal, 21.6% stated through proper bed spacing and 20.5% said that hospital acquired infections can be prevented through proper ward ventilation. See also figure 2 below.

In conclusion therefore, basing on the results, the level of practice of the respondents regarding prevention and control of hospital acquired infections is good.

Figure 2: A pie chart showing ways to reduce transmission of hospital acquired infections.

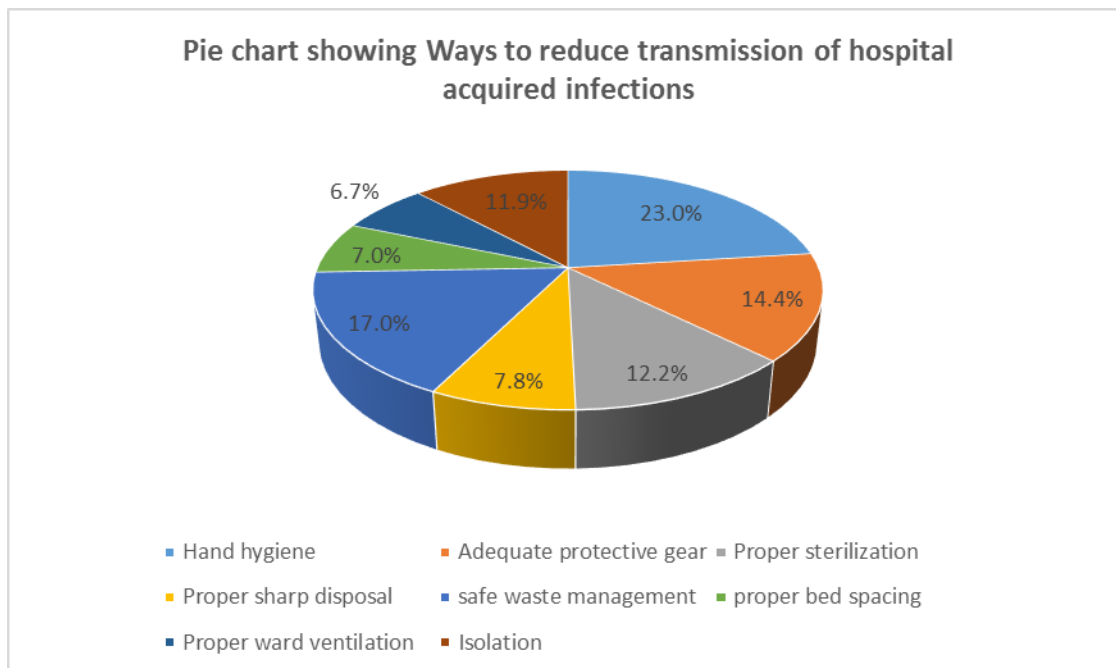


Table 9: Cross tabulation between demographic factors and Practice of respondents on prevention and control of hospital acquired infections.

Cadre of the respondents						
	Response	Enrollment	Diploma	Degree	Total	P value
Should you recap a needle after use?	Yes	6(6.8%)	1(1.1%)	1(1.1%)	8(9.1%)	0.012
	No	20(22.7%)	42(47.7%)	18(20.5%)	80(90.9%)	
	Total	26(29.5%)	43(48.9%)	19(21.6%)	88(100.0%)	

Specialisation of the respondents							
	Response	Surgery	Paediatrics	Accident & emergency	Medical	Total	P value
If you accidentally touch patient's blood, what do you do?	Wipe with cotton wool	2(2.3%)	7(8.0%)	6(6.8%)	0(0%)	15(17.0%)	0.001
	Wash with soap and water	17(19.3%)	13(14.8%)	12(13.6%)	18(20.5%)	60(68.2%)	
	Wash under running water	0(0%)	3(3.4%)	1(1.1%)	9(10.2%)	13(14.8%)	
	Total	19(21.6%)	23(26.1%)	19(21.6%)	27(30.7%)	88(100.0%)	

Experience of the respondents							
	Response	<1 year	1 year	1-5 years	>5 years	Total	P value
Do you place disposable sharps in safety box immediately after use?	Sometimes	2(2.3%)	0(0%)	0(0%)	1(1.1%)	3(3.4%)	0.000
	Always	3(3.4%)	16(18.2%)	51(58.0%)	15(17.0%)	85(96.6%)	
	Total	5(5.7%)	16(18.2%)	51(58.0%)	16(18.2%)	88(100.0%)	

Table 9, presents results for cross tabulation between socio-demographic factors of the respondents and practices regarding prevention and control of hospital acquired infections. As regard education cadre, more enrolled nurses (6.8%) recap needles after use as compared to diploma and degree (1.1%) and degree nurses (1.1%). The P value is 0.012 which implies that there is a significant difference in education cadres of the respondents as regard to recapping of needles after use. As regards to specialty of the respondents, medical and surgery have good practice in case of contact with patient's blood because they wash with soap and water immediately while those nurses in Paediatrics and accident and emergency wipe with cotton wool. The P value is 0.001 implies that there is significant difference in specialty of the nurses as regard what do when you get into contact with patient's blood.

As indicated by the results above, nurses (2.3%) with experience of one year have poor practice as regard where to place disposable sharps in safety box immediately after use because they do so sometime while a bigger percentage of the nurses (51%) with experience of 1-5 years and 5 years above always place disposable sharps in safety boxes immediately after use. The chi-square value 0.000 signifies that there is a significant difference in experience of the respondents as regard disposal of sharps after use.

CHAPTER FIVE: DISCUSSION OF RESULTS

5.0. Introduction.

This chapter attempts to discuss the results of the study on knowledge, attitudes and practices of nurses regarding control and prevention of Hospital Acquired Infections. To enrich the discussion, some of the literature will be used here.

5.1. Knowledge of the Nurses on prevention and control of Hospital Acquired Infections

Majority of the nurses were found to have high level of knowledge on different aspects on prevention and control of Hospital Acquired Infections. Overall, all nurses had adequate knowledge prevention and control of Hospital Acquired Infections. The assessment of the knowledge of the nurses involved assessing knowledge concerning what Hospital Acquired Infections are, their cause, risk factors and sources of infections, knowledge about infection control measures.

In this study, 51.1% of the respondents were very knowledgeable about what hospital acquired infections are, as infections obtained by the patient, 48 hours after admission at the hospital. 37.5% of the respondents were quite knowledgeable and 5.4% of the respondents had no knowledge regarding what hospital acquired infections are. However in a similar study done by Raka et al, (2012) in Kawait, nurses were found to have inadequate knowledge. The difference between the two studies could have been due to the difference in the level of education among the nurses involved in the two studies where by this study involved nurses with higher levels of education (diploma, 48.9% and degree, 21.6%) than those of the latter study.

This is consistent with another study by Irene Ocran et al, (2014) that showed that education cadre and various topics taught in continuous professional education increased knowledge of nurses on prevention and control of Hospital Acquired Infections. Formal education and training of nurses provides the necessary knowledge on prevention and control of Hospital Acquired Infections but continuous health education and discussions among nurses on prevention and control of Hospital Acquired Infections are necessary to revise and improve infection control measures.

As regard knowledge about the organisms that cause disease and infection in the hospital, 56.8% quite knew the correct answer that is to say this infections are caused by bacteria,

viruses, fungi and protozoa. This agrees with a prospective study carried out in Intensive Care Unit (ICU) of a teaching and research Hospital, Istanbul, Turkey, which was found out that of all nosocomial infections acquired by patients, 68.8% and 27.6% of the isolates were Gram-negative and Gram-positive bacteria respectively, and 3.6% were fungi. The most frequently isolated organisms were *Pseudomonas aeruginosa*, followed by *Staphylococcus aureus*, *Escherichia coli* and others (AK O et al, 2011).

53.4% of the respondents correctly stated the potential infectious materials. This included blood, urine, stool, vomit, sweat, pus, and sputum. This agrees with the study conducted by D.N.A Tagoe et al (2011) which stated that nosocomial infection agents may be endogenous or exogenous, and transmitted from one source such as hands, medical devices and environment to susceptible hosts by more than one route. Some of the pathogens are transmitted by direct contact between the Health workers and patients or by indirect contact with environmental surface and inanimate objects or by air (WHO, 2008).

It also corresponds with knowledge, Attitude and Practices study conducted by Raka et al, (2012) which showed that in Kawait, 69% knew that contact is the commonest mode of transmission of this infections.

Majority of the respondents (88.6%) stated that they knew the universal infection control. This include hand hygiene, adequate protective wear, proper sterilization, proper sharps disposal and safe waste management. However this is contrary with the findings of the study conducted by Sodhi K et al (2013), to assess the knowledge of 100 intensive care units nurses in Apollo Hospitals, Ludhiana, India about Infection Control measures, which found out that irrespective of advances done in the healthcare systems, the threat of HAIs is still continuing as a result of nurses lacking knowledge concerning Infection Control measures which in turn reduces compliance to their application.

The knowledge of nurses on prevention and control of Hospital Acquired Infections influences their practices in preventing this infections. According to the study conducted by Sarani H et al, (2014) two teaching hospitals of Zabol city in Iran, the level of knowledge of nurses was associated with educational cadre, post-qualification education and years of experience. This is seen in practice, the knowledge attained is applied differently and as a result knowledge if not put into practice it can easily be forgotten. Therefore, high level of knowledge on Infection control measures can contribute to better prevention and control of Hospital Acquired Infections.

5.2. Attitude of the respondents towards prevention and control of Hospital Acquired Infections.

Majority of the respondents (81.8%) had a positive attitude towards prevention and control of Hospital Acquired Infections. This is attributed to the fact that they fear to contract the diseases from the patients. This is in line with the study conducted on the UK workers by Stein et al (2003) which revealed that 86% of HCWs treated individual patients as if they have blood borne pathogens and also with CDC (2002), which stated that 53.3% of nurses and midwives feared the occupational exposure most especially in contact with HIV positive patients, 93.4% were eager to know whether the patient is positive for HIV/HBV/HCV. Furthermore this agrees with the study carried out among 65 nurses and some physicians in intensive care units and surgical departments of 5 hospitals of varying size in the Netherlands, which was found out that hand washing was done when health workers perceived that previously had got in contact with the patient and it was done only for personal protection. It was also neglected by the senior staff who lacked role models in the hospital and convincing evidence that hand hygiene prevent cross infection (Erasmus V. et al 2009).

As regards to the perception of risk of transmitting an infectious disease, 36.4% of the respondents conformed that it's very much risky. According to the study conducted by Mondriwa, (2007), Health workers usually sustain injuries during the period of the patient's care some of which are not reported which contributes to negative attitude.

In this study 83.0% of the respondents stated that they always observe the infection control practices while 17.0% stated that they observe them sometimes. This agrees with the study carried out by Ellison et al (2007) which showed that 96-99% of nurses used gloves at least 95% of the time of their work. Furthermore, the national survey carried out in England showed out that 99% of HCWs routinely used gloves in trauma scenario but only 18-22% used face masks and eye protection respectively (Sudaram and Parkinson, 2007).

The attitude of the nurses influences their use of infection control measures to prevent the occurrence of Hospital Acquired Infections. This is in agreement with a study conducted in Mulago by Charles et al. (2010) who confirmed that hand washing was valued more as a means of self-protection than as a means of preventing patient to patient transmission, consistent with the prevailing belief that infection control was important for occupational safety.

The experience of the respondents was found to have a significant effect on the attitude of the respondents. Increase in experience leads to increase in knowledge on prevention and control of Hospital Acquired Infections which indicated a positive attitude of nurses towards prevention and control of this infections. This is consistent with a similar study by Nderitu, E. et al (2015) that indicated that knowledge on Hospital Acquired Infections significantly influenced the attitude of nurses. This suggested that nurses who had a positive attitude were more likely to properly prevent hospital acquired infections than those with a negative attitude who may be unable to appropriately prevent and control Hospital Acquired Infections.

5.3. Practices of nurses on prevention and control of hospital acquired infections

Although majority of the nurses (90.9%) stated that they don't recap needles after use, 9.1% of the respondents said they recap needles after use. This is contrary to a study conducted by Wasswa et al. (2015) to determine the implementation of infection control in health facilities and determine predictors of hand washing among healthcare workers in Arua district, which showed out high levels of needle recapping (34.4 %) observed at the health facilities. The findings of their study was as a result of the lack of clear guidelines on needle recapping. Further still the study done by Sadoh et al (2006) and laraquid et al (2009) revealed that the practice of recapping of needles was found to be still common in health settings, 31.9% of Nigerian nurses, doctors, anesthetists and laboratory scientists, 47.3% of Moroccan nurses, nurse assistants and supporting staffs recapped used needles. Another study conducted in Nigeria showed only 32.9% of HCWs didn't recap needles (Ibeziako and Ibekwe, 2006).

Based on the findings, 89.8% of the respondents confirmed that they categorize hospital wastes before disposal while 10.2% said they do not categorize the wastes before disposal. This is disagreeing with the findings of the study conducted by Enyenu Eyoku et al, (2014) in Soroti Regional referral hospital which revealed poor waste management that was associated with poor segregation of waste, lack of waste management plan, inadequate waste management and coordination structure, ineffective and inefficient incineration equipment and lack of comprehensive waste management policies and guidelines.

The findings on hand washing between patients showed that 79.5% of the respondents confirmed that they wash hands between patients while 20.5% stated that they do not wash hands between patients. The results of this study are higher than results from a study conducted in Ethiopia physicians that were reported performing hand hygiene 7% and 48% before and after patient contact, respectively. Barriers for performing hand hygiene in their

study included lack of hand hygiene agents (77%), sinks (30%), and proper training (50%) as well as irritation and dryness (67%) caused by hand sanitizers made in accordance with the WHO formulation (Admasu, 2008)

According to the findings from the study, 85.5% of the respondents stated that they always use personal protective equipment during practice while 12.5% of the respondents said they do not use protective equipment during practice. This is in line with the national survey conducted by Sudaram and Parkinson, (2007) throughout England which found out that 99% of HCWs routinely used gloves in trauma scenario but only 18-22% used face masks and eye protection respectively. However this is contrary with the cross-sectional descriptive survey conducted on 115 nurses at the Lome Campus Teaching Hospital in Togo to assess the knowledge, the attitudes, and the practices of hospital nursing staff in relation to the infectious risks of the hepatitis B and C viruses, which revealed that 75.5% did not use gloves regularly, 34.8% of the nurses had a needle-stick injury, but only 8.8% reported this injuries (Bagny A et al, 2013). Furthermore the study conducted at Kabuyanda health centre four by Ann Lolordo (2008), showed that the staff didn't wear personal protective gears like safety goggles, gloves and masks when examining the patients.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

This chapter draws the overall conclusions of the study basing on the findings and make feasible recommendations to policy makers, implementers and the general community.

6.2. Conclusions.

The knowledge of the respondents was high with majority of the respondents having adequate knowledge on prevention and control of hospital acquired infection. The nurses had adequate information on prevention and control of hospital acquired infection.

The attitude of the nurses towards prevention and control of hospital acquired infection was mainly positive. Most of the nurses had a positive attitude towards prevention and control of hospital acquired infection and only a small proportion had a negative attitude. Those with a positive attitude towards use of infection control measures were more likely to respond positively to prevention and control of hospital acquired infection than those with a negative attitude. Those who were found to have a neutral attitude could be easily influenced to improve their attitude so as to have a positive attitude with more knowledge on prevention and control of hospital acquired infection.

Although the proportion of nurses who washed their hands between patients was high with majority (79.5%) of the respondents, 20.5% stated that they do not wash hands between patients. This indicated a lower level of compliance to prevention and control of hospital acquired infection.

6.3. Recommendations.

Health facilities should provide every nurse with guidelines on infection control measures, and should strictly supervise the nurses to ensure compliance.

Health facilities should provide adequate disposal material to the nurses.

Nurses should be given opportunities to upgrade and males also need to be encouraged to offer nursing course.

Health facilities need to conduct routine and continuous health education and seminars for nurses on prevention and control of hospital acquired infections so as to have constant reminders on infection control measures.

Health facilities need to motivate nurses with updated information which can inform nurses and influence their decisions and attitude towards prevention and control of hospital acquired infections.

There is need for further research studies to investigate the factors influencing the practices and use of infection control measures among nurses. This will generate information on what motivates nurses to comply with infection control practices.

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APPENDIX I: CONSENT FORM

Research description

The main aim of this study is to assess knowledge, attitude and practices of nurses on prevention and control of hospital acquired infections in Soroti Regional Referral Hospital. This will help to update on the prevalence Hospital acquired infections as well as inform the Hospital administrators on the main areas that require improvement as regards to infection control.

I am **Okwii Moses** a student of **International Health Sciences University**. I am carrying out a study on above topic in the above area of study. You have been selected to participate in answering questions regarding this topic. The information you give is very valuable and will be treated with maximum confidentiality. That is why you are requested not to record your name on this paper. So please feel free to respond to the questions as genuinely as possible.

CONSENT

I certify that, to the best of my Knowledge, I have read and understood the contents above and I willingly participate in the study.

Respondent

Participant Initials.....

Sign.....

Date.....

Student

Sign.....

Date.....

6. When do you actually observe these practices? (Tick one)
- a. Always b) Sometimes c) Never
7. Are you comfortable with the infection control practices in this health facility? (Tick one)
- a) Very much b) Somehow c) No

Part 4: Practices of nurses on prevention and control of Hospital Acquired Infections

I would like to know your practices towards Hospital acquired infections prevention, please answer the questions below as truthfully as possible;

1. Should you recap a needle after use? (Tick one)
- a) Yes b) No
2. Is it necessary to categorize hospital waste before disposal? (Tick one)
- b. Yes b) No
3. How do you dispose infected material form patients?
-
4. If you accidentally touch patients' blood, what would you do? (Tick one)
- a) Wipe with cotton wool b) Wash with soap and water immediately
- c. Wash under running water
8. Do you wash hands between two patients? (Tick one)
- a) Yes b) No
9. Do you always use personal protective equipment during practice? (Tick one)
- a) Yes b) No
10. Do you place disposable sharps in safety box immediately after use? (Tick one)
- a) Sometimes b) Always c) Once in a while d) Never
11. Do you use gloves when doing procedure where there is blood or body fluids? (Tick one)
- a) Sometimes b) Always c) Never
12. Suggest ways that reduce the transmission of Hospital Acquired Infection in the health facility.
-
-
-

Thank you so much for your valuable time.

APPENDIX III: MAP OF THE STUDY AREA



Key ○ → area of study

APPENDIX IV: INTRODUCTORY LETTER.



making a difference in health care

Office of the Dean, School of Nursing

Kampala, 16th June 2017

THE HOSPITAL ADMINISTRATOR
SOROTI REGIONAL
REFERRAL HOSPITAL

*Autonomous
of Ossewe
Medical
for consideration*

Dear Sir/Madam,

RE: ASSISTANCE FOR RESEARCH

Greetings from International Health Sciences University.

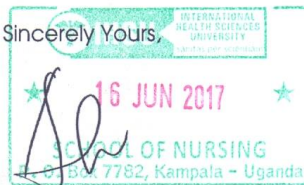
This is to introduce to you **Okwii Moses** Reg. No. **2013-BNS-FT-001**, who is a student of our University. As part of the requirements for the award of a Bachelors degree in Nursing of our University, the student is required to carry out research in partial fulfillment of his award.

His topic of research is: **Knowledge, Attitude and Practices of Nurses on Prevention and Control of Hospital Acquired Infections in Soroti Regional Referral Hospital.**

This therefore is to kindly request you to render the student assistance as may be necessary for his research.

I, and indeed the entire University are grateful in advance for all assistance that will be accorded to our student.

Sincerely Yours,



Ms. Agwang Agnes
Dean

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