A STUDY TO ASSESS THE ATITTUDE OF HEALTHCARE WORKERS TO INFECTION PREVENTION AND CONTROL IN KAMPALA INTERNATIONAL UNIVERSITY TEACHING HOSPITAL, UGANDA

BETT KIPLANGAT DENNIS.

(BMS/0014/72/DF)

A RESEARCH PROPOSAL SUBMITTED IN PARTIAL FULFILLMENT FOR THE AWARD OF BACHELOR IN MEDICINE AND BACHELOR IN SURGERY OF KAMPALA INTERNATIONAL UNIVERSITY.

AUGUST 2013.

DECLARATION

I declare that this research represent an original study and has not been presented before to any university or other institution for consideration in any form of award.

Researcher: BETT KIPLANGAT DENNIS (BMS/0014/72/DF)

Sign: ……..

Date: …….

APPROVAL

I hereby certify that the research work entitled “assessment of attitude of healthcare workers to infection prevention and control in Kampala International University Teaching Hospital” was conducted by BETT KIPLANGAT DENNIS under my supervision and guidance. Therefore I forward it to the Kampala International University academic board.

Supervisor: Dr GABRIEL OKUMU

Sign: ……

Date: ……..

DEDICATION

I would like to dedicate this research to my parents and family members with whom they have supported and inspired me all the way through my studies here in Kampala International University, Western campus. Also to the staff of both the university and the hospital for the knowledge and skill they have imparted unto me in becoming a medical doctor.

ACKNOWLEDGEMENT

I'm deeply humbled and thankful unto the Lord, God Almighty who has unto this point blessed me with life, health and provisions that enable me to carry out this research. I wish to acknowledge the members of my family; dad, mum and my siblings, who have provided me with needed moral and financial support throughout my study period. Notwithstanding, I would express my deeply felt gratitude to all those who lent me a hand and spent their tireless effort in enabling this study become successful. Special thanks goes to my supervisor Dr GABRIEL OKUMU who guided me along through this endeavor. Unto all the healthcare workers who willfully undertook to be part of this research study, my words can't fully express my heartfelt gratitude. It is because of you that this study is out. Lastly and not the least, I am thankful to all lecturers and staff of Kampala International University, Western campus for all their labours and resources rendered in aiding me become a medical doctor.

LIST OF ABBREVIATIONS

CDC……..Centre of Disease Control

HBV…….Hepatitis B virus

HCV……..Hepatitis C virus

HIV……Human Immunodeficiency virus

HBIG…….Hepatitis B Immunoglobulin

HBsAg…….Hepatitis B surface antigen

HBeAg……Hepatitis B e antigen

HCW……Health Care Worker

IPC…… Infection Prevention and Control

ICU……Intensive Care Unit

KIUTH…….Kampala International University Teaching Hospital

PPE……Personal Protective Equipment

PEP ART…….Post exposure Prophylaxis Antiretroviral Therapy

WHO……World Health organization

ZDV……Zidovudine

3TC……Lamivudine

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ABSTRACT

Introduction

With high prevalence of infectious diseases such as; HIV, HBV, HCV among others; especially in sub-Saharan Africa, health workers find themselves at the brunt of acquiring these diseases while they are working. In order to ensure safety within the auspice of their work, infection prevention and control policies implementation as regards to accidental exposure to blood-borne viruses are therefore vital. Prevention of blood exposure, through safer practices, barrier precautions, safer needle devices, and other innovations, is the best way to prevent infection with HIV and other blood-borne pathogens.

Methodology

Observational cross sectional study was carried out in Kampala International University Teaching Hospital, located in south western Uganda. Healthcare workers from various departments were recruited between June and July and questioned concerning various facets of infection prevention to blood-borne pathogens, management and prophylaxis following accidental exposure to blood and bodily fluids suspected to habour infectious viruses; HBV and HIV. Data obtained were coded, tabulated, analyzed to determine means, frequencies and ranges, and presented using tables, graphs and pie charts.

Results

All the respondents were aware of infection prevent measures particularly as concerning accidental exposure to blood or body fluid and post exposure prophylaxis. Majority of the respondents felt that the Personal Protective Equipment were always available (62%).

42% of the respondents reported to have been accidentally exposed to blood or body fluid between June 2012 to June 2013. Majority of those exposed were students at 33% then followed by nurses and clinical officers at 28% each. Of those exposed, only 27% reported to the relevant management. Majority of those who failed to report were students at 100% and

clinical officers at 80%. Majority of the exposed were by percutaneous means and least by permucosal means: percutaneous 72%, mucous membrane 11% and non intact skin 17%. Of those exposed, 89% were exposed blood whereas 11% to bodily fluids. For those percutaneously exposed, 69%, was by needle, 8% by scalpel and 23% by suture needle. Major cause of percutaneous injury was unexpected patient movement (31%) and suturing (31%), and then followed needle recapping at 23% and least causes were disposal of used needles and IM/IV line insertion at 8% and 7% respectively.

Hepatitis B vaccination rate among the healthcare workers in KIUTH was 54%. 61% of nurses, 43% of clinical officers, 90% of lab technicians and 27% of students were vaccinated against Reasons for not having vaccination include unavailability at KIUTH (74%), expensive (22%) and scared of side effects of the vaccine (4%). Routine checking of HBsAg of source person after occupational exposure stands at 44%.

16% of the respondents have ever been exposed to blood or bodily fluid of a confirmed HIV positive patient and of those 57% utilized PEP Antiretroviral therapy. Of the remaining 43%, the reasons for not taking PEP ART was that they never met the criteria for initiation of PEP ART (50%) and 50% were scared of the stigma associated with it both at work and at home. The ones, who failed to utilize PEP because of the associated stigma, were all students.

Conclusion

Prevention of blood exposure, through safer practices, barrier precautions, safe practice, and other innovations, is the best way to prevent infection with HIV and other bloodborne pathogens.

CHAPTER ONE

1.1 PROBLEM STATEMENT

Health workers are the stakeholders and stewards of infection management and control and are therefore daily exposed to grievous pathogens while in line of their duty. It is therefore pertinent to understand the level of their preparedness to the risks that they anticipate in day-to-day practice and measures; be it personal or institutional, they have employed in case they are accidentally exposed to these infectious agents.

1.2 HYPOTHESIS

The overall comprehensive picture of attitude of healthcare workers to infection prevention and control specifically concerning accidental exposure to blood-borne pathogens and utilization of pre- and post exposure prophylaxis against blood-borne viruses among healthcare workers in Kampala International University Teaching Hospital is not fully appreciated.

1.3 JUSTIFICATION

Infection prevention and control is a major global public health concern. Due to gravity of occupational health hazards found in a hospital setting, the assessment of the utilization of infection preventive and control measures; specifically to blood-borne viruses among health workers is critical. Definitive data in Kampala International University Teaching Hospital concerning this matter is generally scarce.

1.4 OBJECTIVES

1.4.1 Broad objective

- To assess the attitude of healthcare workers to infection prevention and control as concerning accidental exposure to blood-borne pathogens (specifically viruses) and utilization of post exposure prophylaxis against HBV and HIV among healthcare workers in Kampala International University Teaching Hospital.

1.4.2 Specific objectives

- ✓ To assess the level of accidental exposure to blood-borne pathogens, both reported and unreported.
- ✓ To determine the awareness and utilization of pre- and post-exposure prophylaxis against Hepatitis B through Hepatitis B vaccination and Hepatitis B Immunoglobulin respectively.
- ✓ To determine the awareness and utilization of post exposure prophylaxis against HIV.
- ✓ To describe the reasons for poor utilization of pre- and post exposure prophylaxis against blood-borne viruses among health workers in developing countries.

1.5 RESEARCH QUESTION

What is the level of occupational exposure to blood-borne pathogens and utilization of PEP to HBV and HIV among healthcare workers in Kampala International University Teaching Hospital?

CHAPTER TWO

2.0 LITERATURE REVIEW

Health-care workers (HCW) are involved in activities that expose them to patients' blood or other body fluids and therefore exposing them to risk of acquiring dreadful infections such as HBV, HCV, or HIV. These exposure can occur through a percutaneous injury (e.g. a needlestick or cut with a sharp object) or contact of mucous membrane or nonintact skin (e.g. exposed skin that is chapped, abraded, or afflicted with dermatitis) with blood, tissue, or other body fluids that are potentially infectious (CDC). Other fluids also considered potentially infectious include: cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid. However, the risk for transmission of HBV, HCV, and HIV infection from these fluids is unknown and has not been assessed by epidemiologic studies in health-care settings. The risk for transmission of HBV, HCV, and HIV infection from these fluids and materials is extremely low.

Avoiding occupational blood exposures is the primary way to prevent transmission of hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV) in health-care settings (CDC). However, hepatitis B immunization and postexposure management are integral components of a complete program to prevent infection following bloodborne pathogen exposure and are important elements of workplace safety. Data indicate that some health-care personnel take a full course of HIV PEP after exposures that do not confer an HIV transmission risk (Jochimsen EM.et.al.) (Critchley SE.et.al).

Diseases caused by the hepatitis B virus (HBV) have a worldwide distribution. It is estimated that >2 billion people world-wide have been infected with HBV. Of these, approximately 360 million individuals are chronically infected and at risk of serious illness and death, mainly from liver cirrhosis and hepatocellular carcinoma (HCC). Humans are the only reservoir of HBV. The virus is transmitted by percutaneous and permucosal exposure to infected blood and other body fluids, mainly semen and vaginal fluid. The incubation period is 75 days on average, but may vary from about 30 days to 180 days. The surface antigen of HBV (HBsAg) may be detected

in serum 30–60 days following infection and may persist for widely variable periods of time. An important proportion (7–40%) of individuals who are HBsAg-positive may also carry the hepatitis B e-antigen (HBeAg), which is associated with high infectivity. HBV is a double-stranded enveloped virus of the Hepadnaviridae family. HBV replicates in the hepatocytes of humans and other higher primates. The outcomes of HBV infection are age-dependent and include asymptomatic infection, acute hepatitis B, chronic HBV infection, cirrhosis and HCC. The development of chronic HBV infection is inversely related to the age of acquisition, occurring in approximately 80–90% of people infected perinatally, about 30% of children infected before the age of 6 years, and in <5% of infections occurring in otherwise healthy adults (Hyamm KC 1995). Comorbidities, including concurrent HIV infection and ingestion of alcohol or aflotoxins, or both, may have an important role in the development of morbidity related to hepatitis B. It is estimated that 10% of the 40 million people infected with HIV worldwide are coinfected with HBV (Nikolopoulos GK et al).People with chronic HBV infection have a 15–25% risk of dying prematurely from HBV-related cirrhosis and HCC (Beasley RP et al). It is not possible, on clinical grounds, to differentiate hepatitis B from hepatitis caused by other viral agents and, hence, laboratory confirmation of the diagnosis is essential. Serologically, acute HBV infection is characterized by the presence of HBsAg and immunoglobulin M (IgM) antibody to the core antigen, HBcAg. During the initial, highly replicative phase of infection, patients are also seropositive for HBeAg.

HBV infection is a well recognized occupational risk for HCP (Mast EE et al). The risk of HBV infection is primarily related to the degree of occupational exposure and also to the hepatitis B e antigen (HBeAg) status of the source person. Studies in HCP who sustained injuries from needles contaminated with blood containing HBV indicate that the risk of developing clinical hepatitis if the blood was both hepatitis B surface antigen (HBsAg)-and HBeAg-positive was 22%–31% whereas the risk of developing serologic evidence of HBV infection was 37% –62%. By comparison, the risk of developing clinical hepatitis from a needle contaminated with HBsAg-positive, HBeAg-negative blood was 1%–6%, and the risk of developing serologic evidence of HBV infection, 23% –37% (Werner BG et.al, 1982). Despite percutaneous injuries being among the most efficient modes of HBV transmission, their exposures probably account for only a

minority of HBV infections among HCP. Several investigations of nosocomial hepatitis B outbreaks revealed that most infected HCP could not recall an overt percutaneous injury (Garibaldi RA et.al), (Rosenberg JL et.al) although some studies showed that up to one third of infected HCP recalled caring for a patient who was HBsAg-positive (Callender ME et.al) (Chaudhuri AKR et.al). Additionally, HBV has been demonstrated to survive in dried blood at room temperature on environmental surfaces for at least 1 week (Bond WW et.al). Thus, HBV infections that occur in HCP with no history of nonoccupational exposure or occupational percutaneous injury might have resulted from direct or indirect blood or body fluid exposures that inoculated HBV into cutaneous scratches, abrasions, burns, other lesions, or on mucosal surfaces (Francis DP et.al). The potential for HBV transmission through contact with environmental surfaces has been demonstrated in investigations of HBV outbreaks among patients and staff of hemodialysis units (Snydman DR et.al). Blood contains the highest HBV titers of all body fluids and is the most important vehicle of transmission in the health-care setting. HBsAg is also found in several other body fluids, including breast milk, bile, cerebrospinal fluid, feces, nasopharyngeal washings, saliva, semen, sweat, and synovial fluid (38). However, the concentration of HBsAg in body fluids can be 100–1000 fold higher than the concentration of infectious HBV particles and therefore, not efficient vehicles of transmission because of the low quantities of infectious HBV, despite the presence of HBsAg. In serologic studies conducted in the United States during the 1970s, HCP had a prevalence of HBV infection approximately 10 times higher than the general population (Dienstag JL et.al). Because of the high risk of HBV infection among HCP, routine preexposure vaccination of HCP against hepatitis B and the use of standard precautions to prevent exposure to blood and other potentially infectious body fluids have been recommended by CDC and WHO.

Prospective studies have evaluated the effectiveness of hepatitis B immune globulin (HBIG) and/or hepatitis B vaccine in various postexposure settings. For perinatal exposure to an HBsAg-, HBeAg-positive mother, a regimen combining HBIG and initiation of the hepatitis B vaccine series at birth is 85%–95% effective in preventing HBV infection (Beasley RP et.al.,1983)(Stevens CE et.al.,1985). Regimens involving either multiple doses of HBIG alone or the hepatitis B vaccine series alone are 70%–75% effective in preventing HBV infection (Beasley

RP et.al, 1983). In the occupational setting, multiple doses of HBIG initiated within 1 week following percutaneous exposure to HBsAg-positive blood provides an estimated 75% protection from HBV infection (Grady GF et.al.,1978) (Seeff LB et.al.,1977) (Prince AM et.al.,1975). Though the postexposure efficacy of the combination of HBIG and the hepatitis B vaccine series has not been evaluated in the occupational setting, the increased efficacy of this regimen observed in the perinatal setting, compared with HBIG alone, is presumed to apply to the occupational setting as well. In addition, because persons requiring PEP in the occupational setting are generally at continued risk for HBV exposure, they should receive the hepatitis B vaccine series.

Hepatitis B vaccines have been found to be safe when administered to infants, children, or adults (CDC) (Greenberg DP et.al). In the year 2000, approximately 100,000,000 persons received hepatitis B vaccine in the United States and among the most common side effects from hepatitis B vaccination were pain at the injection site and mild to moderate fever (Francis DP et.al, 1982). Approximately 45 reports were received by the Vaccine Adverse Event Reporting System (VAERS) of alopecia (hair loss) in children and adults after administration of plasma-derived and recombinant hepatitis B vaccine; hair loss was temporary for approximately two thirds of persons who experienced hair loss. An epidemiologic study conducted in the Vaccine Safety Datalink found no statistical association between alopecia and receipt of hepatitis B vaccine in children (CDC, unpublished data, 1998). A low rate of anaphylaxis was observed in vaccine recipients based on reports to VAERS; the estimated incidence is 1 in 600,000 vaccine doses distributed. Further vaccination with hepatitis B vaccine is contraindicated in persons with a history of anaphylaxis after a previous dose of vaccine. Surveillance of adverse events following hepatitis B vaccination in United States has demonstrated no association between hepatitis B vaccine and the occurrence of serious adverse events, including Guillain-Barré syndrome, transverse myelitis, multiple sclerosis, optic neuritis, and seizures (57–59) (CDC, unpublished data, 1991).

HBIG is prepared from human plasma known to contain a high titer of antibody to HBsAg (anti-HBs). The plasma from which HBIG is prepared is screened for HBsAg and antibodies to HIV and

HCV and the process used to prepare HBIG inactivates and eliminates HIV from the final product. No evidence exist that HBV, HCV, or HIV has ever been transmitted by HBIG. Serious adverse effects from HBIG when administered as recommended have been rare. Local pain and tenderness at the injection site, urticaria and angioedema might occur; anaphylactic reactions, although rare, have been reported following the injection of human immune globulin (IG) preparations (Ellis EF, 1969). Persons with a history of anaphylactic reaction to IG should not receive HBIG.

As of December 2001, the CDC had received voluntary reports of 57 documented cases of HIV seroconversion temporally associated with occupational exposure to HIV among U.S. health care personnel. Because there is no cure or effective vaccine for AIDS, optimal postexposure care, including the administration of antiretroviral drugs to prevent HIV infection, remains a high priority for protecting health care personnel. Percutaneous injury, usually inflicted by a hollow-bore needle, is the most common mechanism of occupational HIV transmission. The CDC estimates that more than 380,000 needle-stick injuries occur in U.S. hospitals each year; approximately 61 percent of these injuries are caused by hollow-bore devices. Health care personnel who have occupational exposure to blood are at risk for HIV infection. Prevention of blood exposure, through safer practices, barrier precautions, safer needle devices, and other innovations, is the best way to prevent infection with HIV and other bloodborne pathogens.

Prospective studies of HCP have revealed the average risk of HIV transmission after a percutaneous exposure to HIV-infected blood to be approximately 0.3% (Bell DM, 1997) and after a mucous membrane exposure, approximately 0.09% (Ippolito G et.al., 1993). The risk of HIV infection after percutaneous exposure increases with a larger volume of blood and, probably, a higher titer of HIV in the source patient's blood. Postexposure prophylaxis with zidovudine appears to be protective. (N Engl JMed 1997;337:1485-90.) In a retrospective case-control study of HCP who had percutaneous exposure to HIV, the risk for HIV infection was found to be increased with exposure to a larger quantity of blood from the source person as indicated by:

a) A device visibly contaminated with the patient's blood;

b) A procedure that involved a needle being placed directly in a vein or artery; or

c) A deep injury (Cardo DM et.al., 1997).

The risk also was increased for exposure to blood from source persons with terminal illness, possibly reflecting either the higher titer of HIV in blood late in the course of AIDS or other factors (e.g., the presence of syncytia-inducing strains of HIV). The use of source person viral load as a surrogate measure of viral titer for assessing transmission risk has not yet been established but its level reflects only the level of cell-free virus in the peripheral blood; and latently infected cells might transmit infection in the absence of viremia.

Data about primary HIV infection indicates that systemic infection does not occur immediately, leaving a brief window of opportunity during which postexposure antiretroviral intervention might modify or prevent viral replication. Theoretically, initiation of antiretroviral PEP soon after exposure might prevent or inhibit systemic infection by limiting the proliferation of virus in the initial target cells or lymph nodes. More relevant studies in animals i.e. primates, murine and feline; have provided encouraging evidence of postexposure chemoprophylactic efficacy. They have demonstrated that larger viral inoculation decreases prophylactic efficacy ((Ruprecht RM et.al. 1994) as is delaying initiation, shortening the duration, or decreasing the antiretroviral dose of PEP, individually or in combination (Otten RA et al, 2000).

In the retrospective case-control study of HCP, after controlling for other risk factors for HIV transmission, use of ZDV as PEP was associated with a reduction in the risk of HIV infection by approximately 81% (Cardo DM, 1997). A multicenter trial in which ZDV was administered to HIV-infected pregnant women and their infants, the administration of ZDV during pregnancy, labor, and delivery and to the infant reduced transmission by 67% (Connor EM, 1994). In Africa, the use of ZDV in combination with Lamivudine (3TC) decreased perinatal HIV transmission by 50% when administered during pregnancy, labor, and for 1 week postpartum, and by 37% when started at the onset of labor and continued for 1 week postpartum (Saba J, PETRA Trial Study Team, 1999). Studies in Uganda also have demonstrated that rates of perinatal HIV transmission have been reduced with the use of abbreviated PEP regimens started intrapartum or during the first 48–72 hours of life (Musoke P et.al, 1999) (Guay LA, 1999). The limitations of

all of these studies must be considered when reviewing evidence of PEP efficacy in that the extent to which data from animal studies can be extrapolated to humans is largely unknown, and the exposure route for mother-to-infant HIV transmission is not similar to occupational exposures. Therefore, these findings might not be directly applicable to PEP in HCP.

CHAPTER THREE

3.0 Methodology

3.1.1 Study design

This is an observational cross sectional study of health care workers in Kampala International University Teaching Hospital.

3.1.2 Scope of study

The content of this study is limited to the assessment of attitude of healthcare workers to infection prevention and control specifically as concerning occupational exposure and utilization of post exposure prophylaxis to Hepatitis B and HIV.

3.1.3 Study site

This study was carried out in Kampala International University Teaching Hospital which is located in Bushenyi district in western Uganda.

3.1.4 Selection criteria

Inclusion criteria:

Fifty healthcare workers who practice and are in daily contact with patients or specimen were recruited into this study. Among them were senior students in their clinical practice i.e. fifth and sixth year students. This was carried out between 15th June and 5th July. The participants willfully undertook to be enjoined into this study.

Exclusion criteria

Those who decline to participate in the study were excluded.

3.1.5 Limitation of study

Limitation

- Bias due to expectation by the respondents.

- ❖ Inaccuracy of information given by the respondent.
- ❖ Inadequate finance available for the research.

Delimitation

- ✓ A number of variables are objective and attract straight forward responses.
- ✓ The research assistants will have been trained and this allows for uniformity.

3.2 Data collection Technique

The data was collected using a questionnaire which contained open-ended questions and some few closed-ended questions where participant's opinion or explanation was required. The same questionnaires were also coded in Epidata for the purpose of data analysis.

3.3 Data Entry Analysis and presentation

All the data gathered were coded, tabulated and analyzed using Statistical Package of Social Sciences SPSS for windows version 16.0 Chicago Illinois, 2007. The results were relayed and presented by means of tables, graphs and pie charts and finally published in a final publication draft.

3.4 Ethical considerations

Ethical approval and permission was obtained from Kampala International University Teaching Hospital ethical review committee. The purpose, rights and benefits of the study were explained to the participants by the investigator and the research assistants. Confidentiality of participants' data was upheld and no names were put on any of the data collection sheets (questionnaires).

3.5 Time frame

The study was formulated and designed to last 2 months, commencing with proposal development and finalizing with results publication.

CHAPTER FOUR

Results

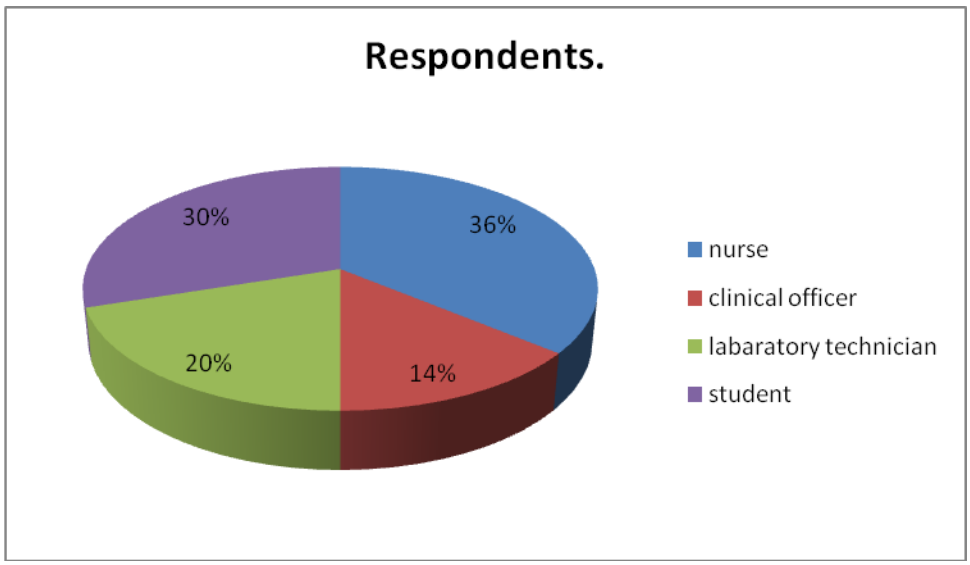
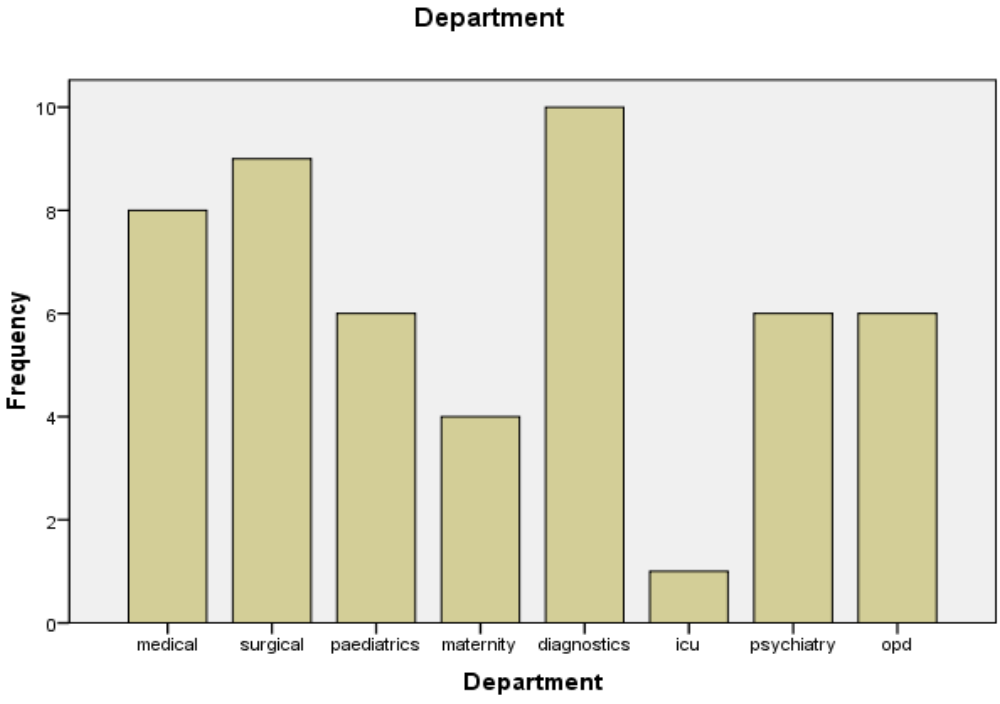
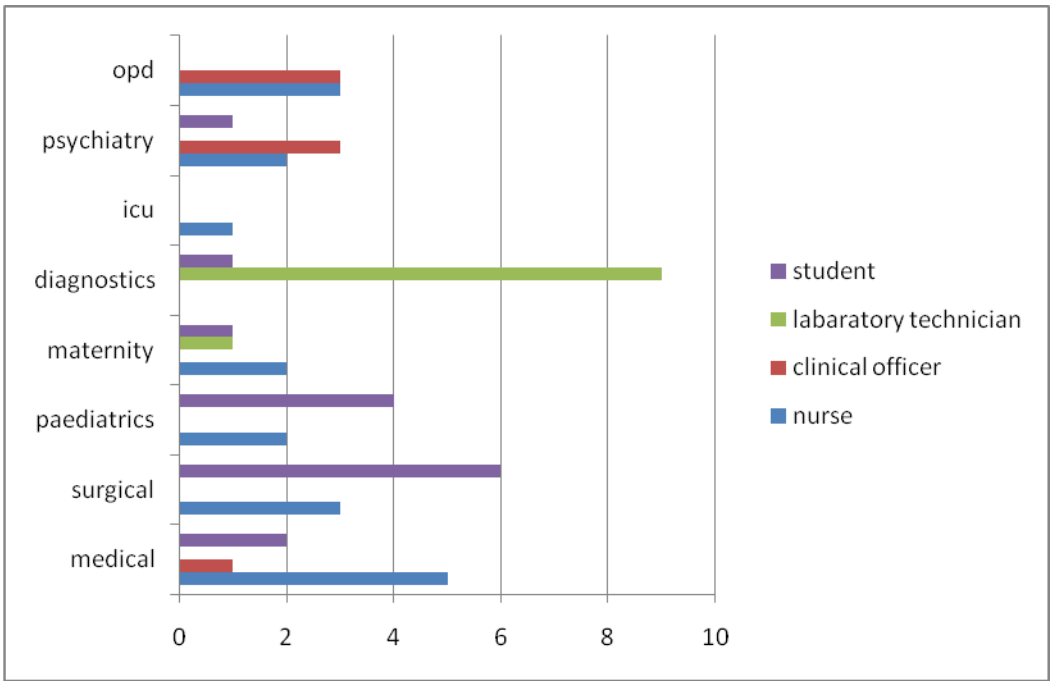


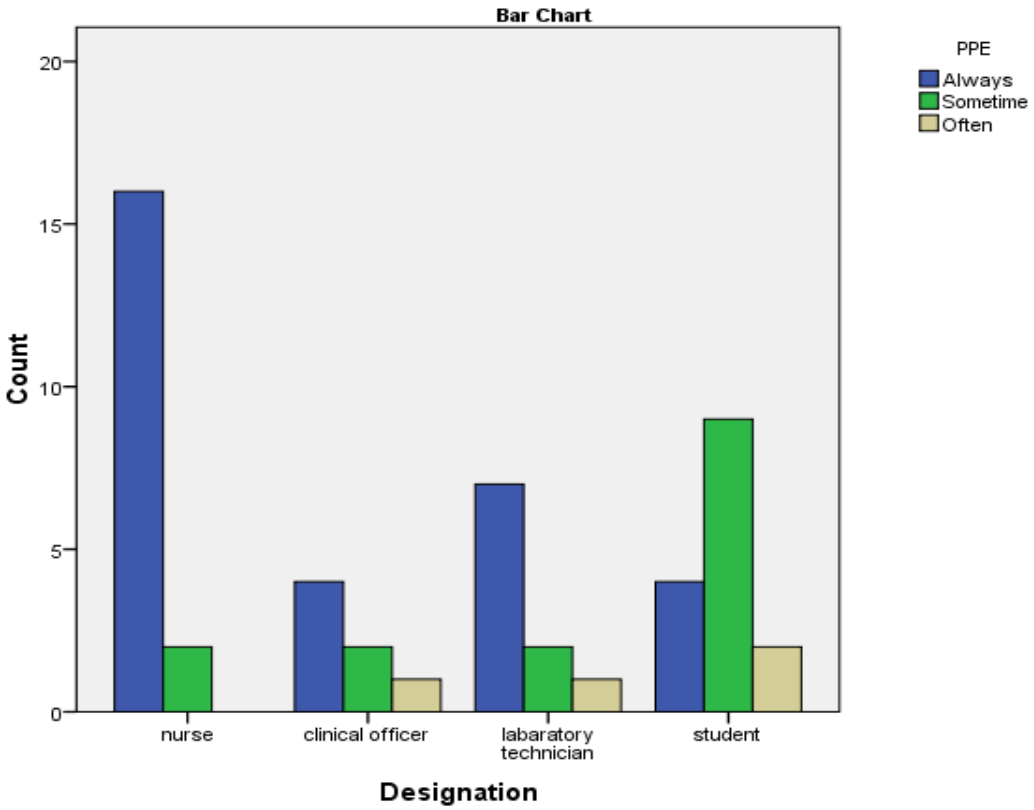
Chart showing the respondents interviewed.



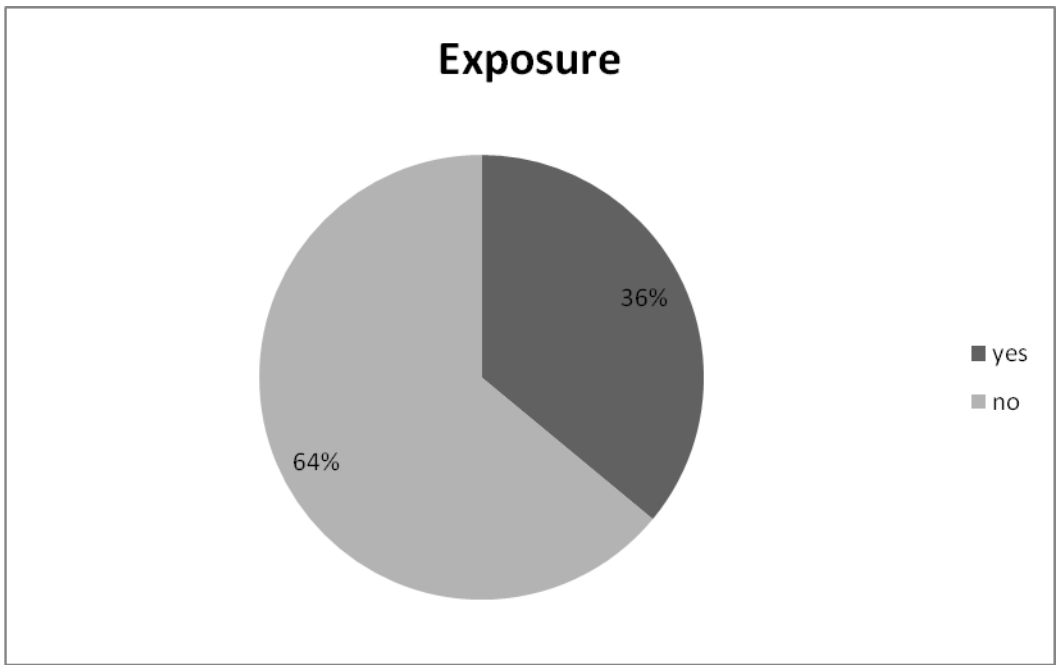
Graph showing the department interviewed.



Cross tabulation between designation and departments.



Availability of the personal protective equipment in different departments in KIUTH.



Percentage of persons accidentally exposed to blood or body fluid in KIUTH.

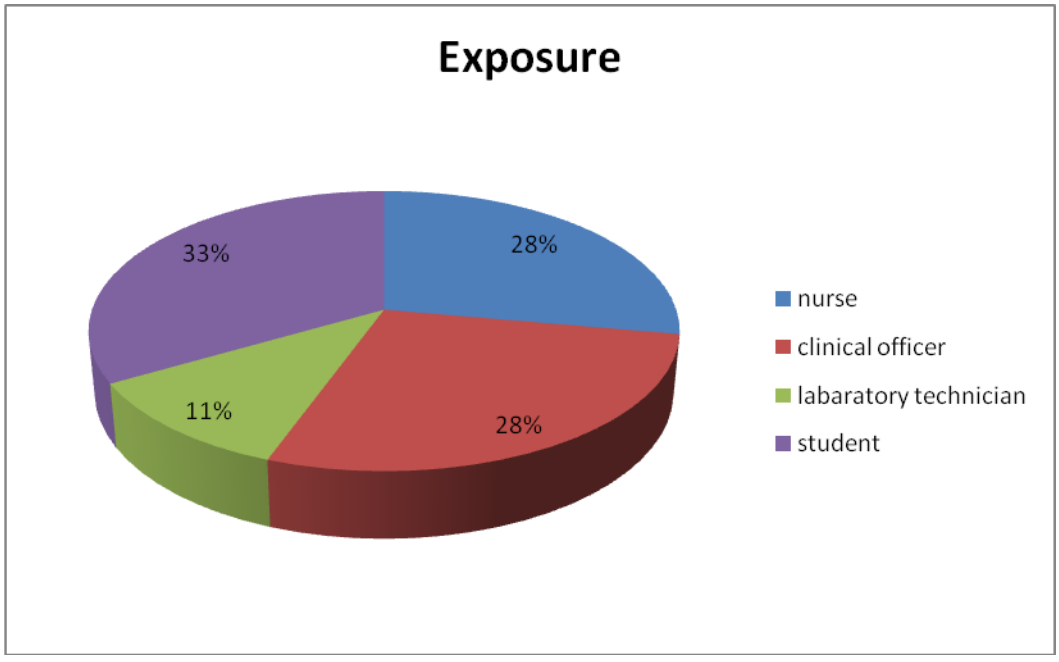
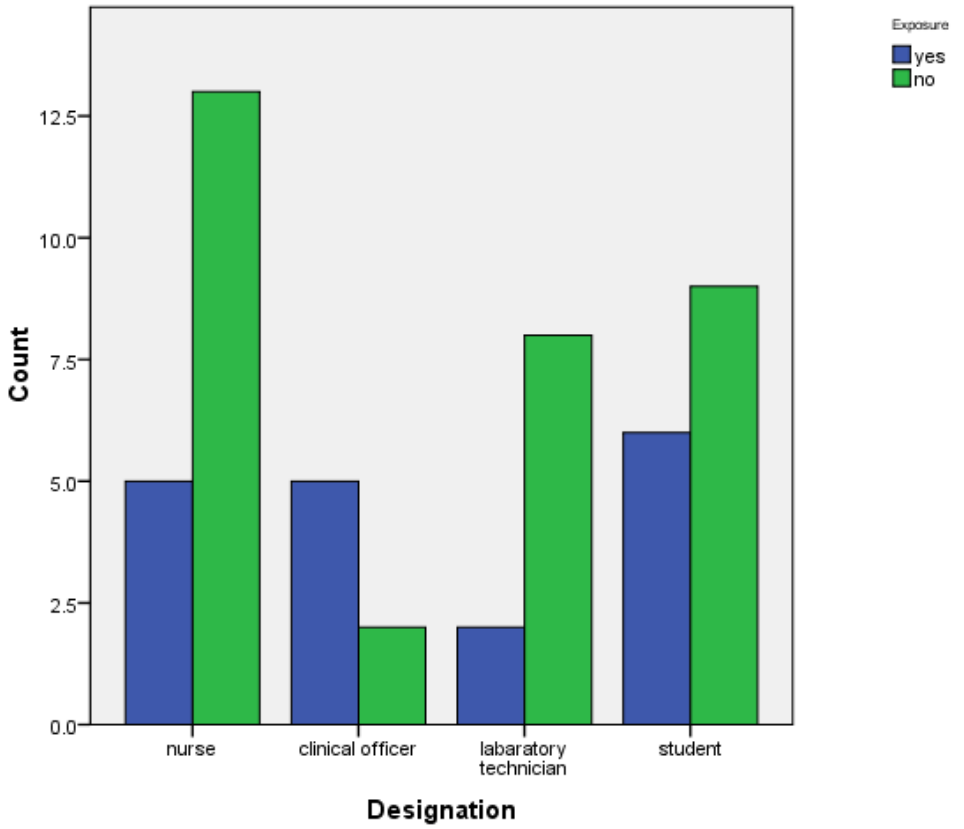
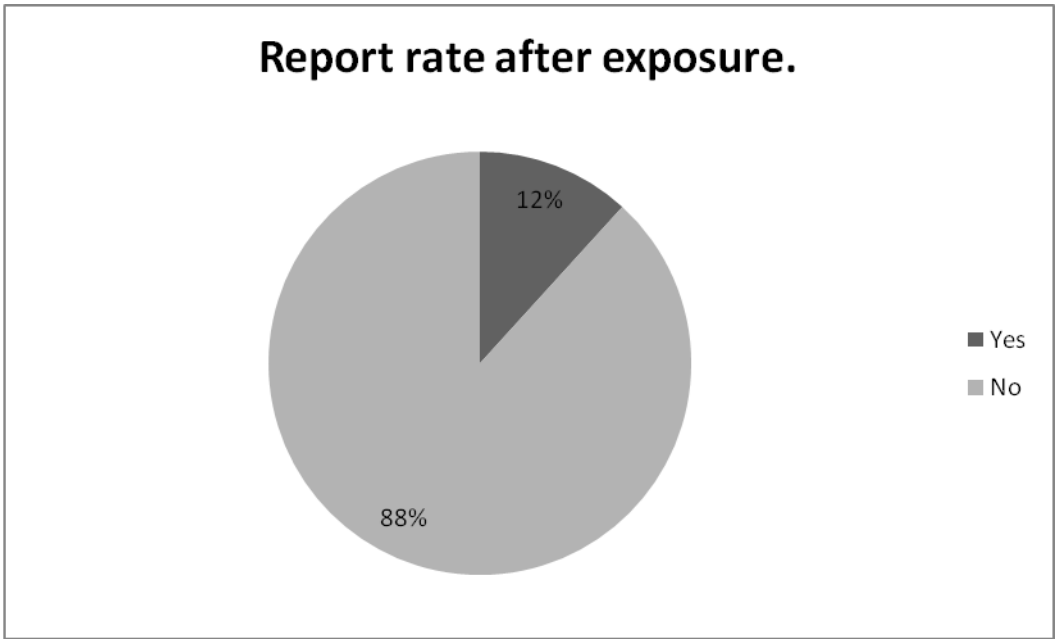


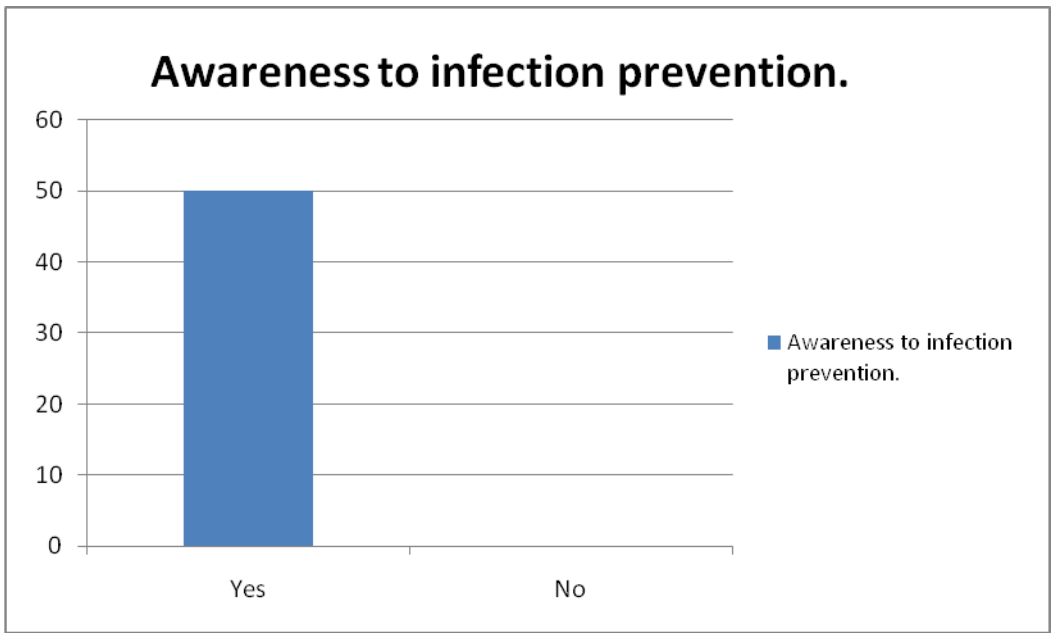
Chart showing designation occupationally exposed.



Crosstabulation between designation and exposure.



Demonstration of report rate after accidental exposure.



The level of awareness to blood-borne pathogens and post exposure prophylaxis.

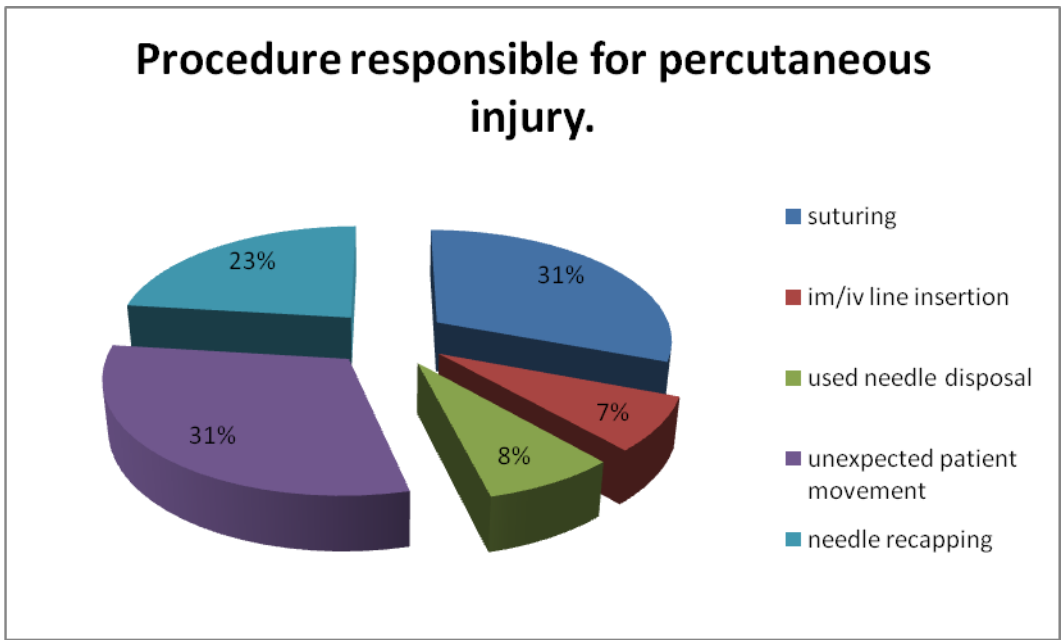


Chart showing procedure during which the respondents were involved in percutaneous injury.

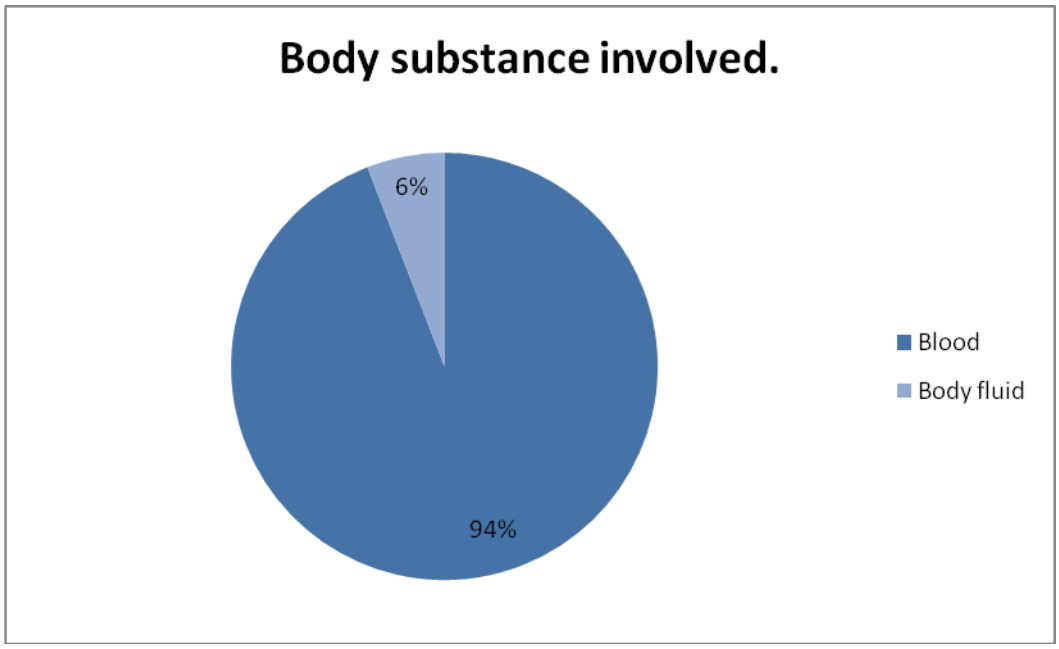
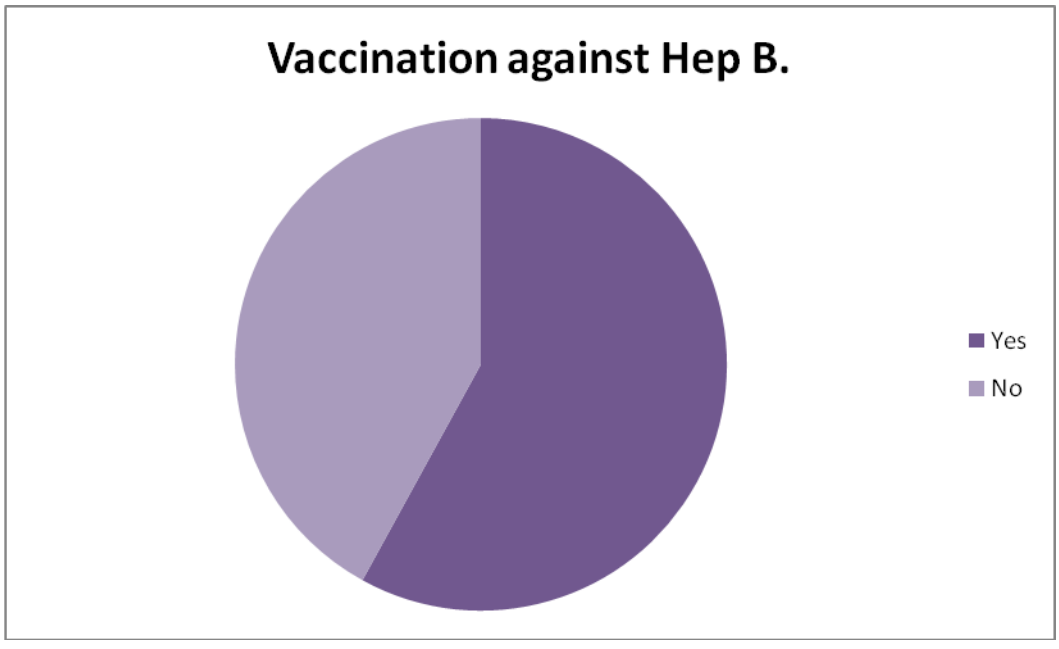
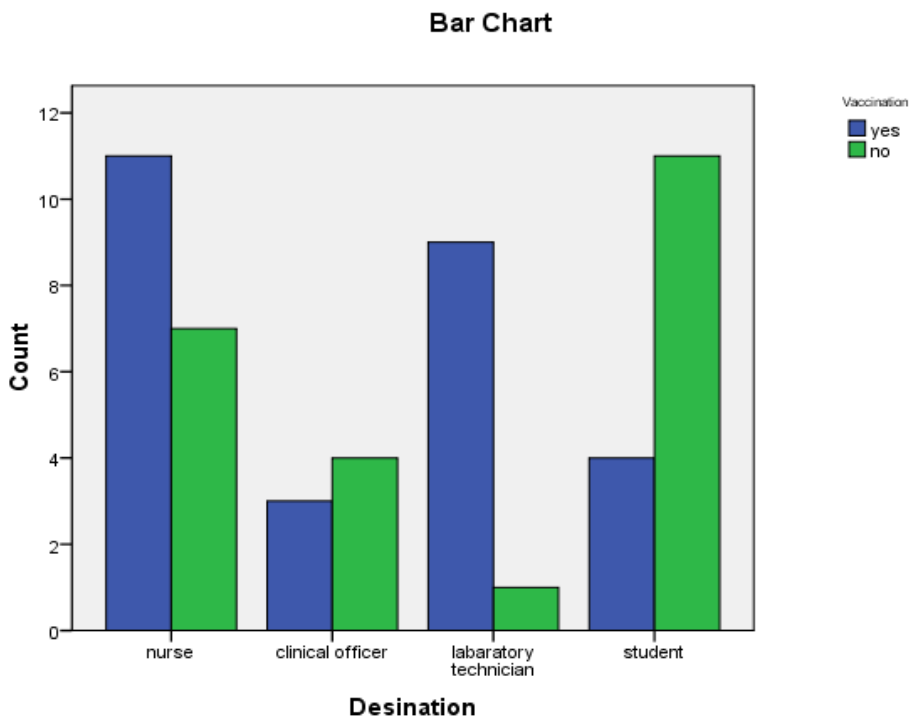


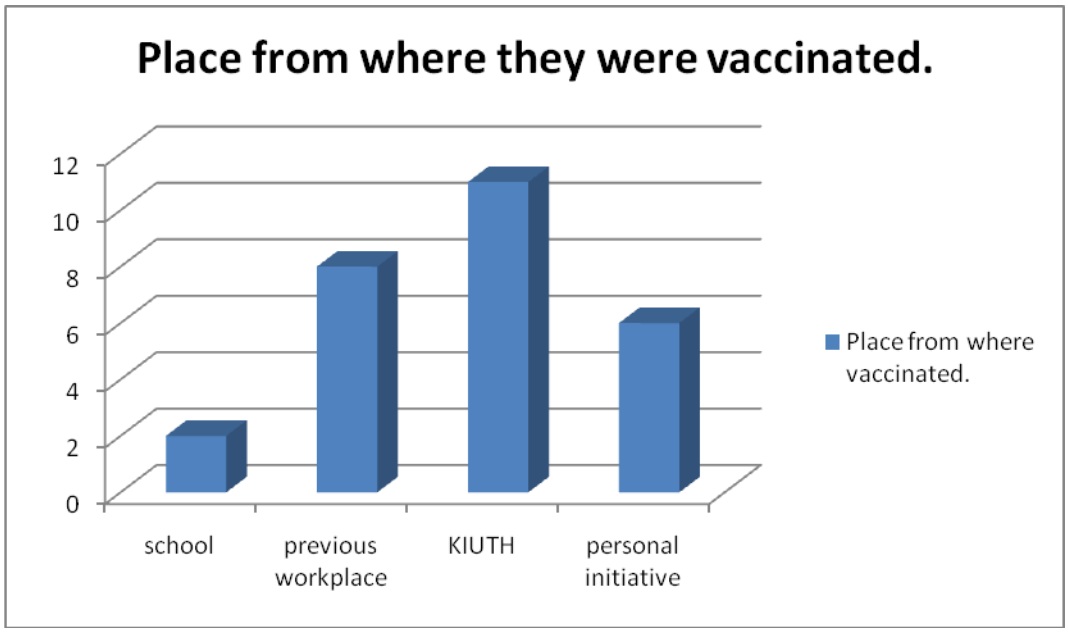
Chart showing body substance involved in occupational exposure.



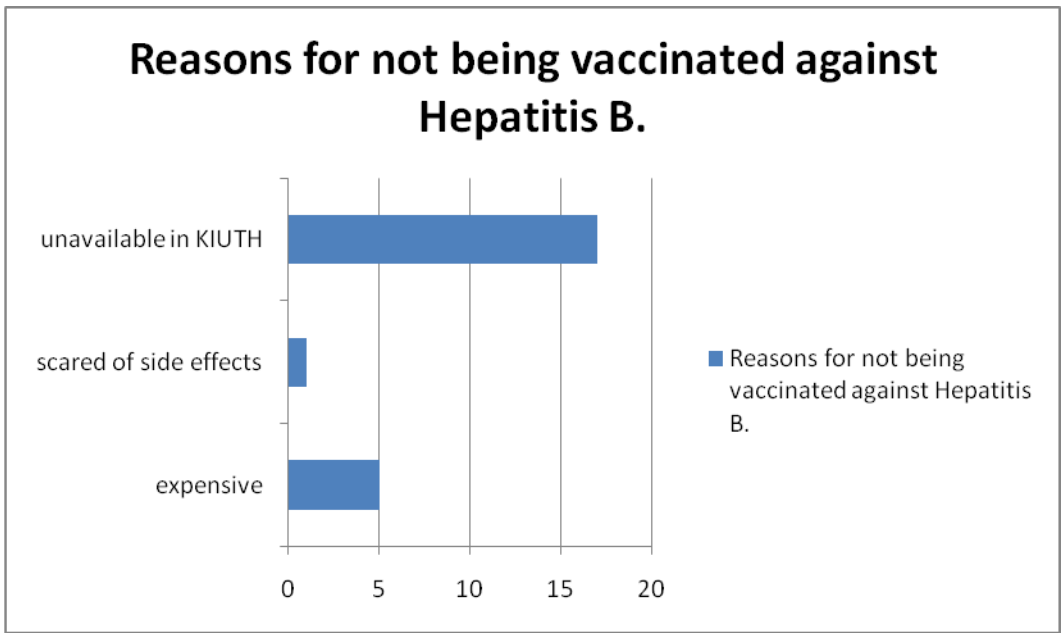
Percentage of those vaccinated against Hepatitis B.



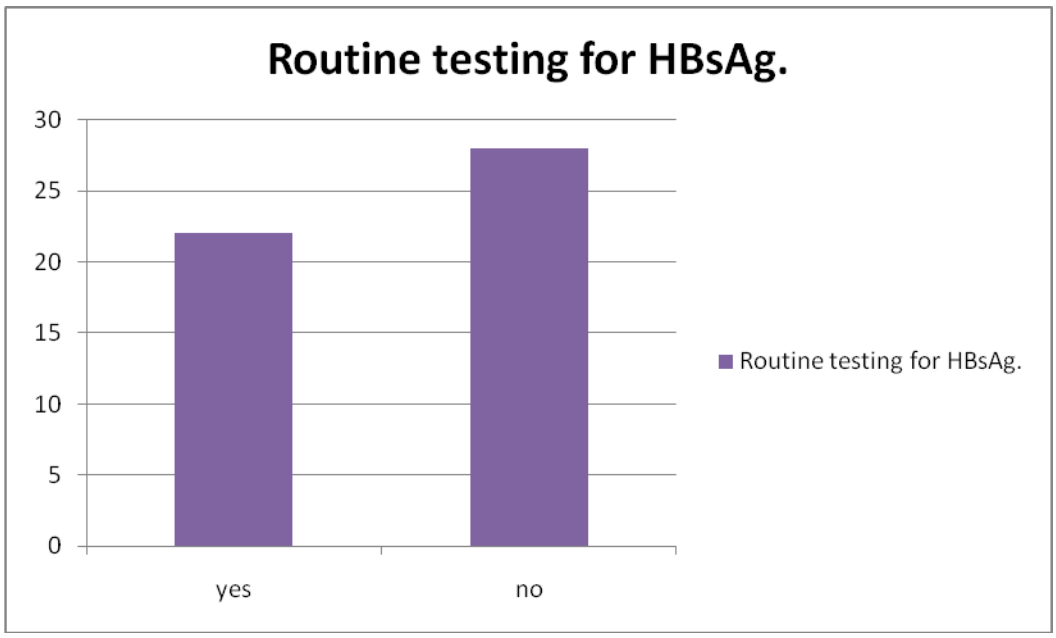
Cross tabulation between designation and Hepatitis B vaccination.



A bar graph showing place from which they were vaccinated against Hepatitis B.



Reasons for lack of vaccination against Hepatitis B.



Graph showing routine testing for HBsAg of source person after accidental exposure.

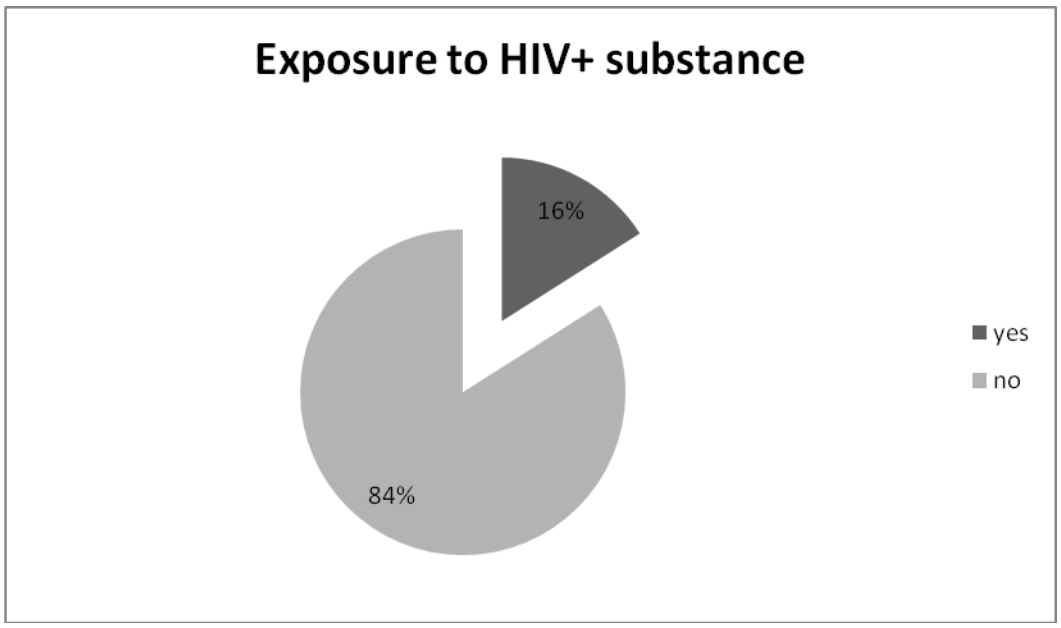
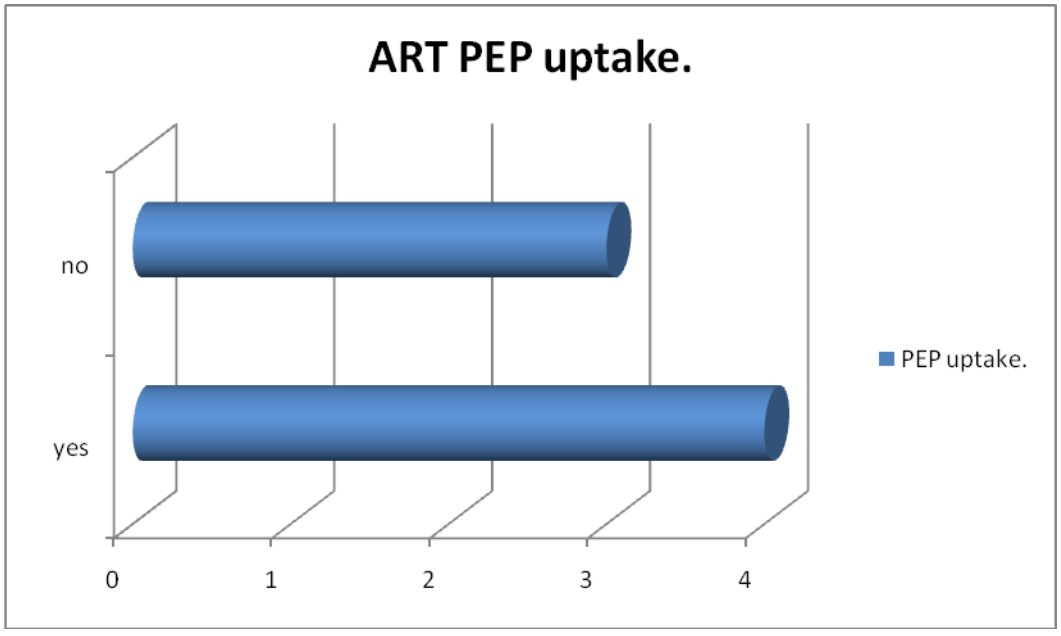
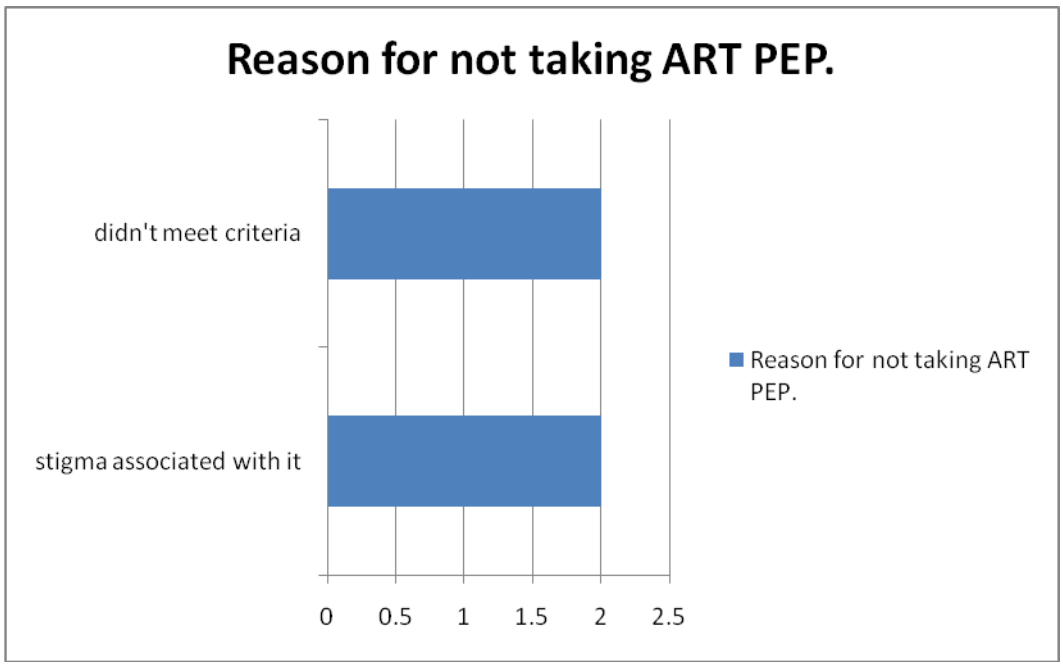


Chart showing percentage of those exposed to HIV positive substance.



Graph showing percentage of those exposed to HIV harbouring substance who utilised ART PEP.



Graph showing reasons for not taking ART PEP.

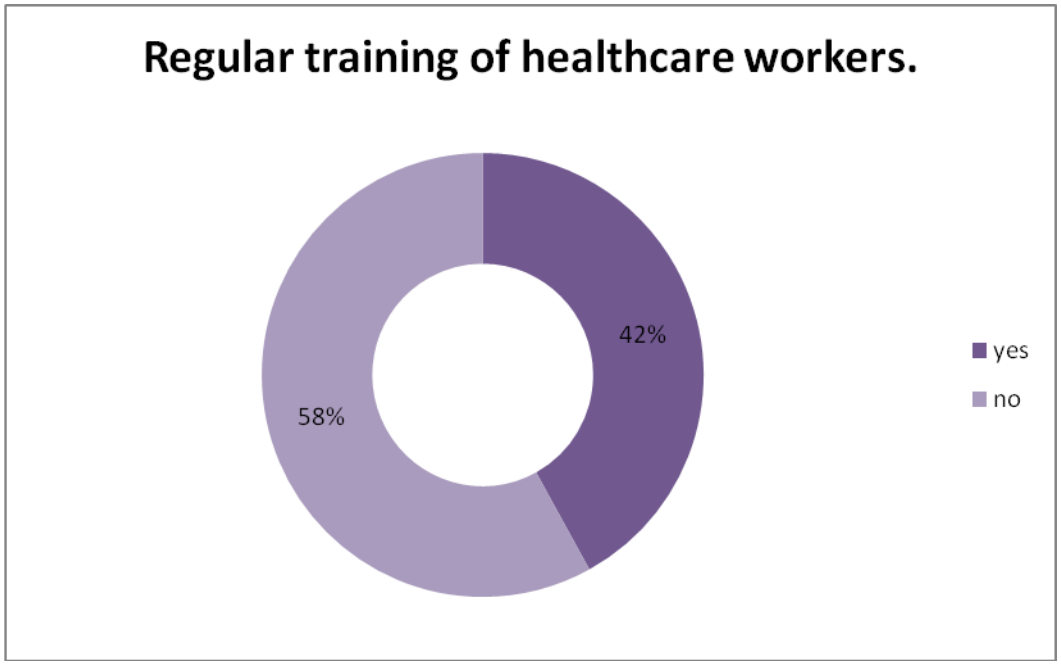
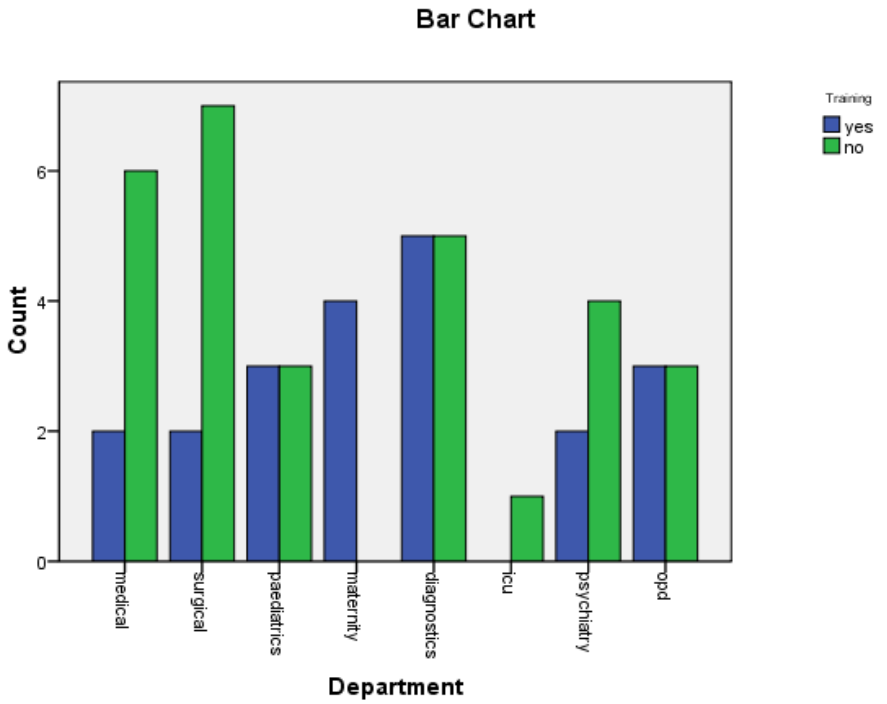
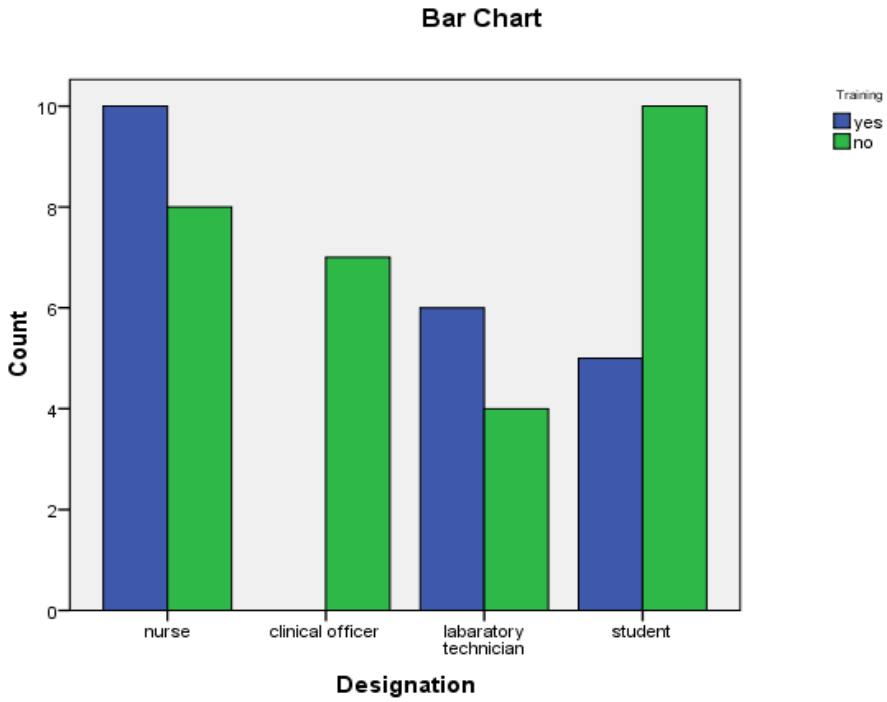


Chart showing undertaking of regular training of healthcare workers to occupational exposure and post exposure prophylaxis.



Cross tabulation between department and training.



Cross tabulation between designation and training.

CHAPTER FIVE

5.1 Discussion

This study drew the following respondents from among the healthcare workers: 36% were nurses, 30% students, 20% were laboratory technicians and 14% were clinical officers. The respondents drawn from various departments in KIUTH with the majority from surgical and least from ICU: Medical 16%, Surgical 32%, Paediatric 8%, Maternity 8%, Diagnostics 16%, ICU 4%, Psychiatry 8% and OPD 8%. Majority of the nurses were from medical department whereas majority of the clinical officers were drawn from OPD and psychiatry departments. Most of the students were from the surgical department at the time of research.

All the respondents were aware of infection prevent measures particularly as concerning accidental exposure to blood or body fluid and post exposure prophylaxis. Majority of them felt that the Personal Protective Equipment were always available (62%) though 30% felt that they were sometimes available. 8% felt that they were often present. Majority of those who felt that PPE were always available were nurses then lab technicians then clinical officers. Majority of the students felt that PPE were available sometime and lacked at other times. This therefore shows that there is discrepancy in the availability of PPE among different HCWs.

42% of the respondents reported to have been accidentally exposed to blood or body fluid while dealing with patients in KIUTH within a period of one year (June 2012 to June 2013). Majority of those exposed were students at 33% then nurses and clinical officers at 28% each. Least exposed were the lab technicians at 11%. On designation basis, clinical officer were more exposed (71%) then students at 40% and then followed by nurses (28%) and lastly the lab technicians (20%). Of those exposed, only 27% reported to the relevant management. Majority of those who failed to report were students at 100% and clinical officers at 80%. Nurses and the lab technicians report rate are 60% and 50% respectively. Majority of the exposed were by percutaneous means and least through mucous membrane: percutaneous 72%, mucous membrane 11% and non intact skin 17%. Of those exposed, 89% were exposed blood whereas 11% to bodily fluids. For those percutaneously exposed, 69%, was by needle, 8% by scalpel and 23% by suture needle. Major cause of percutaneous injury was unexpected patient movement

(31%) and suturing (31%), and then followed needle recapping at 23% and least causes were disposal of used needles and IM/IV line insertion at 8% and 7% respectively.

Hepatitis B vaccination rate among the healthcare workers in KIUTH was 54% majority of who were nurses and lab technicians at 41 and 33% respectively. Students were the ones least vaccinated at 11%. 61% of nurses, 43% of clinical officers, 90% of lab technicians and 27% of students were vaccinated against Hepatitis B. majority of those vaccinated acquired there vaccination from KIUTH (41%). Others include previous workplace (30%), personal initiative (22%) and school (7%). Reasons for not having vaccination include unavailability at KIUTH (74%), expensive (22%) and scared of side effects of the vaccine (4%). Routine checking of HBsAg of source person after occupational exposure stands at 44%.

16% of the respondents have ever been exposed to blood or bodily fluid of a confirmed HIV positive patient and of those 57% utilized PEP Antiretroviral therapy. Of the remaining 43%, the reasons for not taking PEP ART was that they never met the criteria for initiation of PEP ART (50%) and 50% were scared of the stigma associated with it both at work and at home. The ones, who failed to utilize PEP because of the associated stigma, were all students.

42% of the respondents felt that there was regular training of healthcare workers as concerning infection prevention measures specifically to this subject whereas the remaining 58% took to the contrary. Majority who felt that there was regular training were lab technicians (60%) and nurses (56%). Those who felt that there was inadequate training on infection prevention were clinical officers (100%) and students (67%). The department that report adequate training of the healthcare workers was maternity (100%) whereas that with inadequate training was ICU then followed by surgical and medical departments.

5.2. Conclusion

There is indeed adequate awareness to infection preventive measure as concerning occupational exposure blood-borne pathogens and utilisation of post exposure prophylaxis to Hepatitis B and HIV.

Though there is adequate presence of personal protective equipment, there is need to make all this available to all healthcare workers including the students. Most students feel that the PPE are not readily available to them.

Significant numbers of healthcare workers are exposed occupationally to blood or bodily fluid and effort need to be made to try and address this problem especially on safe practices.

Majority of those exposed are students and this has to be addressed by training them on safe practices.

The report rate is still way below the expectation of such a great institution and therefore there is a need to train the healthcare workers on the available office that deal with occupation exposure.

Blood remain to be the agent commonly involved in occupational exposure and bodily fluid being rare. Percutaneous exposure is the most common means of exposure with mucous membrane and non intact skin being a seldom occurrence.

Uptake of Hepatitis B vaccine stands at 54% which is still not good enough. Emphasis still needs to be raised on the necessity of being vaccinated as by the WHO guideline on healthcare workers especially on the students.

There is need to have effective and harmonized relaying of information especially among the healthcare workers and the hospital should indeed undertake this responsibility. There is disharmony between the information relayed by different group e.g. majority of lab technicians are vaccinated from KIUTH yet the clinical officers are not despite being in the same institution.

The healthcare workers should be educated on the need to be stakeholders of their own health rather than waiting for the hospital to take care of their health specifically as regards to vaccination.

Antiretroviral PEP therapy utilization is not to the point required. Though half of the patients who were exposed to a documented HIV positive blood responded that they failed to take PEP for they never met the criteria for its initiation, there is need for them to confirm with the

relevant offices set up for that work. All of those who said they never met the criteria took it upon their own opinion.

There is a tendency to overindulge in HIV and disregard other potential virulent pathogens such as Hepatitis B. Therefore routine testing of HBsAg after exposure is of great essence.

Regular surveillance and training of healthcare workers concerning infection preventive measures and pre- and post exposure prophylaxis is of paramount importance.

5.3. Recommendation

The personal protective equipment should be rolled out in all departments and ensured that all healthcare workers have access to them.

Regular education of the healthcare workers should be done to equip them with safe practices in order to reduce level of occupational exposure.

The hospital administration should look into ways of ensuring all the healthcare workers are vaccinated against Hepatitis B.

Routine testing for HBsAg should be incorporated into post exposure management to occupationally exposed workers.

Report rates are still low and hospital should embark on ways of making HCW aware of their presence and essence.

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ANNEX

ANNEX 1

RESEARCH CONSENT FORM.

My name is DENNIS KIPLANGAT BETT currently in sixth year of Bachelors of Medicine and Surgery (MBChB) and would like to invite you to this study to assess the knowledge of accidental exposure to blood-borne pathogens and utilization of post exposure prophylaxis against Hepatitis B and HIV among healthcare workers in Kampala International University Teaching Hospital

The objective of the research is to assess the knowledge of accidental exposure to blood-borne pathogens and utilization of post exposure prophylaxis against Hepatitis B and HIV among healthcare workers in Kampala International University Teaching Hospital.

The identity will be confidential and no information regarding the responses from this questionnaire will be published. This is a request you take to be part in this medical research. If you have any questions, you may ask the researcher. Denial of consent will be duly respected.

I, the undersigned has understood the above and willingly accept to participate in this research study.

Participants signature: …….

Date: ……

Researcher's sign: ……

Date: ……

ANNEX 2

DATA COLLECTION FORM

RESEARCH DATA COLLECTION TOOL

1. What is your designation in healthcare service?

Nurse☐ Clinical officer☐ Lab technician☐ Student☐

2. Which medical field are you currently in?

Medical☐ Surgical☐ Paediatric☐ Maternity☐ Diagnostics☐

Psychiatry☐ OPD☐ ICU☐

3. Are you aware of Infection Prevention as regards to exposure to blood-borne pathogens and post exposure prophylaxis?

Yes☐ No☐

4. How available are the Personal Protective Equipment specifically gloves?

Always☐ Sometimes☐ Often☐

5. How many times have you been exposed to blood or body fluid while working in KIUTH in the previous year (June 2012 to June 2013)?

_____

6. Did you report to the relevant management after being exposed?

Yes☐ No☐

7. How were you exposed?

Percutaneous☐ Mucous membrane☐ Non-intact skin☐

8. What body substance were you exposed to?

Blood☐ Bodily fluid☐ (specify……..)

9. If percutaneously exposed, which equipment was responsible for the injury?

Needle☐ Scalpel☐ Suture needle☐ Others☐
(specify……..)

10. What procedure were you carrying out prior or during the injury?

Suturing☐ IM injection/IV line insertion☐ Handling/disposal of used needles☐

Unexpected patient movement☐ Needle recapping☐ Accidental stick by colleague☐

11. Have you been vaccinated against Hepatitis B?

Yes☐ No☐

12. If yes, from where did you acquire the vaccination from?

School☐ Previous workplace☐ KIUTH☐ Personal initiative☐

Others☐ (specify……)

13. If no, why haven't you been vaccinated?

Expensive☐ Scared of the side effects☐ Unaware of its significance☐

Unavailable in KIUTH☐ Others☐ (specify……..)

14. Do they routinely check for Hepatitis B (HBsAg) of source person after occupational exposure to blood or body fluid?

Yes☐ No☐

15. Have you ever been accidental exposure to blood or bodily fluids from an HIV positive patient?

Yes☐ No☐

16. Did you take Post Exposure Prophylaxis Antiretroviral drugs?

Yes☐ No☐

17. If No, why didn't you take the PEP ART?

Unavailable☐ Scared of the side effects☐ Stigma associated with it☐

Did not meet criteria for PEP initiation☐

18. Does the hospital undertake regular training of its staff concerning occupational exposure and postexposure prophylaxis?

Yes☐ No☐

ANNEX 3

WORK PLAN

Activity	Time
Proposal preparation and approval	10th June
Data collection	15th June to 20th June
Data analysis	20th June to 30th June
Report publication	1st July to 10th July

ANNEX 4

BUDGET

Material costing

Item	Unit cost	Quantity	Total cost
Research assistants	25,000	2	50,000
Stationery			
• Printing paper	15,000	2	30,000
• Pens	700	4	2,800
• Staple and stapler	20,000	1	20,000
• Flash disk	20,000	1	20,000
• Compact disk	1,000	2	2,000
• Internet charges	50,000	-	50,000
• Printing	100	80	8,000
• Binding	1,500	4	6,000
Sub total			288,800
10% contingency			23,880
Total			212,680