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Knowledge and Practices on Infection Control among Health Workers in Jinja Regional Referral Hospital

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ABSTRACT

Introduction: Globally, it is known for the last four decades, that the majority of Health Care- Associated Infections (HCAIs) can be prevented by adequate, though not necessarily sophisticated, surveillance and control measures. A number of international initiatives are being undertaken to support developing countries to build and implement infection control effectively in their health care settings. A descriptive and cross sectional, was carried out to assess the knowledge and practices on infection prevention and control measures at Jinja regional referral hospital. The objectives of the study were to establish the knowledge of health workers on infection control and to establish the practices of health workers towards infection prevention and control. Convenience sampling technique was used to select 34 health workers at the hospital during the period of data collection. Majority of respondents 20(58.8%) had been in service for more than 3 years, while only 3(8.8%) had been in service for less than a year. Findings on knowledge about infection control revealed that the majority of health workers knew that the yellow colour code is meant to collect sharp wastes, 18(52.9%) of them knew the red colour code is meant to collect highly infectious wastes, while black was mentioned by 11(32.5%) to collect noninfectious wastes. Regarding practices on infection control, 88% participants mentioned hand washing as a method of infection control and the least mentioned waste segregation in specific bin liners. The majority of the participants (79.41%) have knowledge on wastes segregations. The researcher concluded that all the health workers had a substantial level of knowledge on infection prevention and control. However, this knowledge was mainly theoretical since the health workers could not correctly mention infection prevention and control measures but most of them were not being practiced. The researcher recommended that through the guidance of the hospital management, an infection control and prevention committee should be established which should set performance objectives and hold regular period reports to evaluate the performance of the health center on infection prevention.

Keywords: knowledge, practices, infection control, health workers,

INTRODUCTION

The Centers for Disease Control (CDC) defines health care infection control as any intervention aimed at preventing the transmission of pathogenic microbes from one person to another or from Hospital Acquired Infections (HAIs) as infections acquired while in the health care setting with lack of evidence that the infection was present or incubating at the time of entry into the health care setting [1]. These definitions need to respond to a changing medical environment. Modern medical care has become more invasive and therefore associated with a greater risk of infectious complications. An aging population, the AIDS epidemic, the growth of chemotherapeutic options for cancer treatment, and a growing transplant population have expanded the population at an increased risk for infection as a consequence of interactions with the health care system [2]. Both surgical care and medical care that are increasingly complex and invasive are being provided in non-acute-care settings, making the definition of a health care setting more problematic [1]. Patients move freely within sometimes loosely defined elements of the health care system: between long-term care or rehabilitation facilities, to acute-care facilities, to free-standing surgical care providers [2]. Globally, it is known for the last four decades, that the majority of Health Care-Associated Infections (HCAIs) can be prevented by adequate, though not necessarily sophisticated, surveillance and control measures. A number of international initiatives are being undertaken to support developing countries to build and implement infection control effectively in their health care settings [3]. Despite these growing efforts, infection control in most developing countries remains either non-existent or ineffective, posing a significant threat

to quality of patient care [4-8]. In 2010, the WHO reported that only 23/147 developing countries have a functioning surveillance system for HCAI, which is a core part of infection control programs [9]. Infection Prevention and Control (IP&C) in the acute care environment is one of the most important issues in modern healthcare. Some European countries such as the Netherlands have been recognized as world leaders at minimizing MDRO infection rates. Yet, strong evidence on the most effective approaches for achieving good adherence to the simplest measures such as hand hygiene, remains elusive [10-13], and further knowledge of what drives individuals, organizations and health systems towards sustainable IP&C practices does not yet exist in the research literature.

Study design and rationale

The study design was descriptive, cross sectional, employing qualitative and quantitative techniques to assess the factors affecting the implementation of infection control measures at Jinja Regional Referral Hospital. This design allowed comparison of variables to make realistic conclusions.

Study setting

The study was conducted at Jinja Regional Referral Hospital in the following departments medicine, surgery, obstetrics and Gynaecology including Padiatrics.

Study Population

The study population was health workers working at Jinja Regional Referral Hospital regardless of level of qualification.

Sample size determination

The sample size was determined using the WHO, 2005 recommendation for sample size estimation which states that 30% of the target population chosen randomly yields a representative sample. Since the health center has 112 staff members who work at various points and are involved in participation of infection control, the sample size was 30% of 112 hospital staff. Therefore, sample size was $30 \times \frac{112}{100} = 34$ health workers.

Sampling procedure

Simple random sampling technique will be used to select any respondent who will be available at the hospital during the period of data collection. The hospital was selected due to the evidence of control problems obtained from the district data summary.

Inclusion criteria

All health workers and support staff working at Jinja Regional Referral Hospital who gave informed consent were included in the study.

Exclusion criteria

Those who met the inclusion criteria but on any form of leave including annual leave, maternity leave, off duty, those who were sick and those who did not give informed consent were not included.

Research instruments

The data collection tool was a semi structured interview guide.

Pre- testing interview Guide. The instruments were pre-tested at Ishaka Adventist Hospital. Pre-testing helped the researcher modify some unclear questions, which needed amendment.

Data collection procedure

Data collection was done for period of two weeks by the researcher in the month of October 2020. Research assistants were not to be used.

Data management.

After data collection, the data was cross checked for consistency, non-response and it was entered in tally sheets and coded for easy analysis.

Data analysis

Data was analyzed manually by use of tally sheets and computing numerical data using a calculator. Microsoft excel computer programme was used to draw graphs, diagrams and table to illustrate data. Qualitative data was presented by use of descriptions.

Ethical consideration

An introductory letter from Jinja Regional Referral Hospital was obtained by the researcher which was used to seek permission and assistance from the Hospital Management. Each eligible respondent was given a clear explanation about the nature and purpose of the study and requested to consent before any information was obtained. The privacy of respondents was observed by interviewing each respondent individually and confidentiality was maintained ensuring anonymity where by the researcher avoided writing the names of respondents on the questionnaire.

RESULTS

Table 1: Age of respondents

Age range in years	Frequency	Percentage
20 – 30	18	52.94
31 – 40	12	35.29
41 – 50	04	11.76
Above 50	00	00
Total	34	100

Slightly more than half 18(52.94%) of the respondents were between 20 – 30 years, only04(11.76%) were between 41 – 50 years of age.

Table 2: Sex of respondents

Sex	Frequency	Percentage
Female	28	82.35
Male	6	17.64
Total	34	100

The majority of respondents 28(82.35%) were females while the least 6(17.64%) were male.
The majority of respondents' 24(70.58%) indicating gloves a third 15(44.11%) indicating wastecollecting bins while only 4(11.76%) mentioned hand washing.

Table 2: Knowledge on equipment used for infection control and prevention

Variables	Frequency	%
Gloves	24	70.58
Aprons	13	38.23
Boiler	11	32.35
Hand washing can with soap	04	11.76
Incinerator	10	29.41
Hand washing can	04	11.76
Waste collection bins	15	44.11

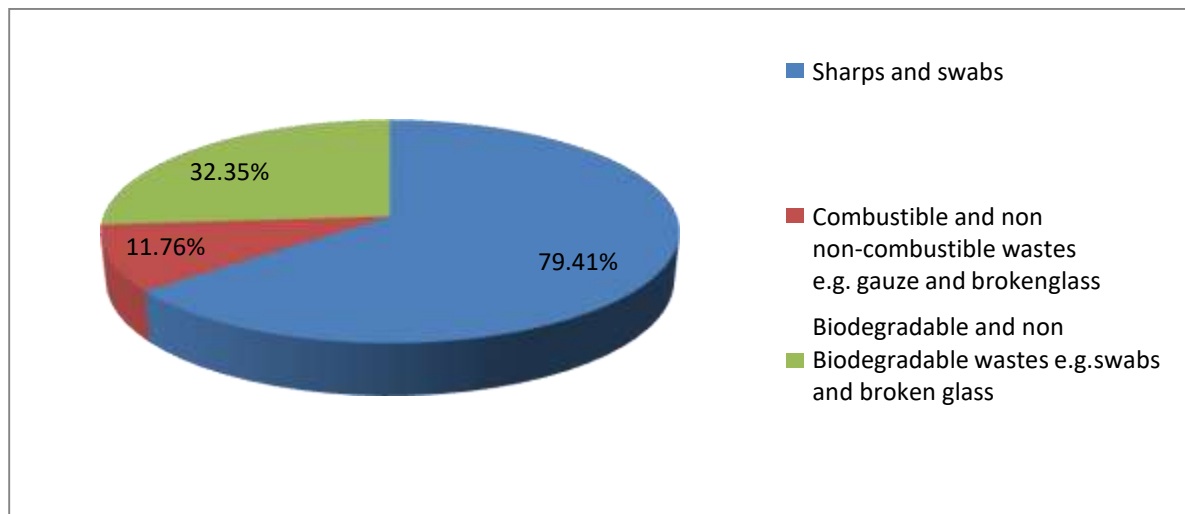


Figure 3: Responses on the categories of wastes that should not be collected in the same containers

The majority of the participants 27(79.41%) mentioned that swabs and sharp wastes should not be combined in one collecting bin, while only 4(11.76%) indicated not mixing combustible and non-combustible wastes like soiled gauze and broken glass.

Table 3: Responses on colour code of bin liner containers used to collect different types of wastes

Type of waste	Colour of bin liner	Frequency	Percentage
Sharp wastes	Yellow	24	70.5
Highly infectious waste	Red	18	52.9
Non infection wastes	Black	11	32.5

The majority of health workers 24(70.5%) knew that the yellow colour code bin liner is meant to collect sharp wastes, 18(52.9%) of them knew the red colour code is meant to collect highly infectious wastes, while black was mentioned by 32.5% to collect noninfectious wastes.

Table 4: How wastes are disposed at the health center

Type of waste	Method of disposal	Frequency	Percentage
Sharps	Incinerated	12	35.29
Infectious wastes	Burning	9	26.47
Placenta	Placenta pit	9	26.47
Non infectious wastes	Burying the wastes	4	11.76
Total		34	100

Incineration of wastes was the main method of waste disposal mentioned by a third 12(35.29%)of respondents a while a few 4(11.76%) mentioned burying of wastes

Most of the participants (52.9%) mentioned that hands should be washed before and after patient examination, only 2(5.88%) participants mentioned washing hands any time the hands get contaminated.

Table 5: Practices of hand washing in the health facility setting

When hands should be washed	Frequency	Percentage
Any time when one feels the hands may be contaminated	02	5.88
Before and examination of the new born	03	8.82
Before and after carrying out any procedure	17	50
Before any form of drug administration	11	32.35
Before and after putting on sterile gloves	09	26.47
Before and after patient examination	18	52.94

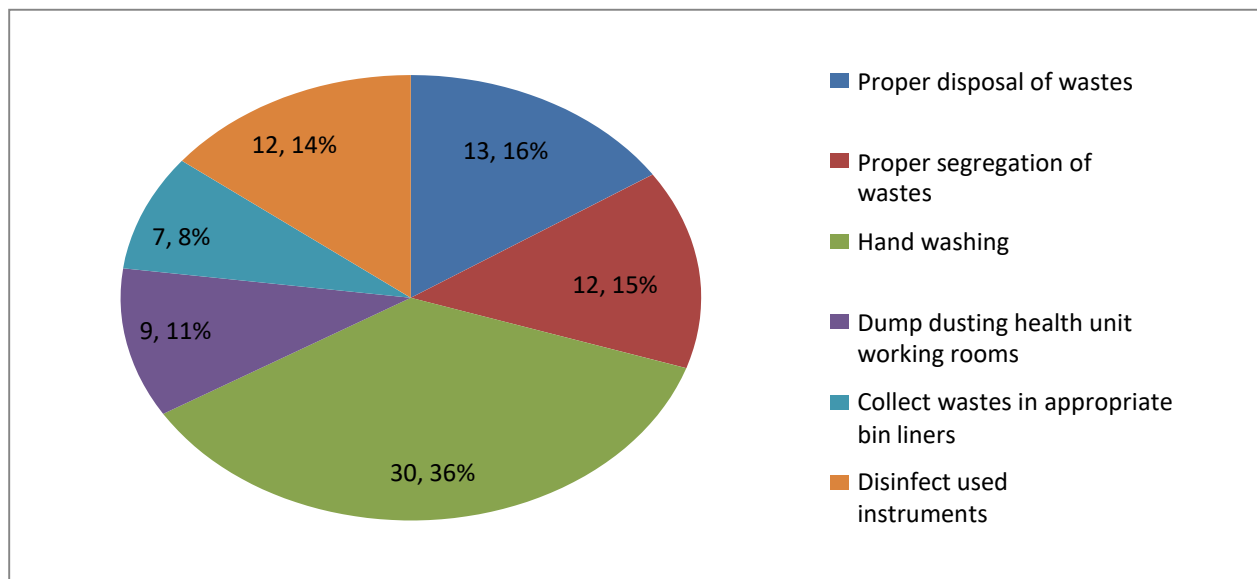


Figure 4: Knowledge of health workers on infection prevention and control

The figure above indicated that 36% wash their hands after procedures, 15% know proper waste segregation, 14% disinfect used instruments, 16% disposed wastes properly, 8% discard wastes in appropriate bin liners.

DISCUSSION

More than half of respondents 20(58.8%) had been in service for more than 3 years, while 3(8.8%) had been in service for less than a year. The period of service can influence the level of exposure to the standard operating procedure in infection prevention measures. Therefore, the more time a health worker takes in service, the more competent is such a health worker expected to execute infection control and prevention procedures. As indicated in this study that 20(58.8%) of the health workers at the study area have been in service for at least 3 years or more, and therefore their level of competence in infection control procedures is expected to be high. This study found that varied responses on the measures used to prevent infection prevention were mentioned by respondents, the majority 30(88%) of the participants mentioned hand washing, and the least mentioned waste segregation in specific bin liners. In addition, the majority of the participants (79.41%) mentioned that swabs and sharp wastes should not be combined in one collecting bin, while only 11.76% indicated not mixing combustible and non-combustible wastes like soiled gauze and broken glass. The health workers were also found to have good knowledge on colour codes for specific wastes since the majority of health workers knew that the yellow colour code is meant to collect sharp wastes, 52.9% of them knew the red colour code is meant to collect highly infectious wastes, while black was mentioned by 32.5% to collect noninfectious wastes. This indicates substantial knowledge of health workers on how to control and prevent infection. However, it is not evident at the hospital that although the level of knowledge among health workers is high, the infection prevention measures are not properly implemented and this suggests that the health workers have negative attitude towards infection prevention and control measures [14-17]. This is exactly similar to the research findings of Burke [8], who assessed hospital infection control Knowledge, Attitude, and Practice (KAP) of healthcare workers and revealed that a good proportion (81.8%) of HCWs correctly answered at least 5 of the 11 knowledge statements. However, he found negative attitude towards implementation of infection measures. On the other hand, most of the health workers 26(76.5%) did not know the procedure of triaging patients in order to separate the patients with highly infectious diseases or those critically ill from the patients who are not infectious. This knowledge gap on triaging patients could be a vehicle of transmitting infections from one person to another in the health facility.

Most of the participants 18(52.9%) mentioned that hands should be washed before and after patient examination, only 2(5.88%) of the respondents mentioned washing hands any time the hands get contaminated. The knowledge on when to wash hands was good although few hand washing points were available in working rooms and hence for some procedure like general physical examination health workers did not wash hands. This is similar to the findings of Horan [1] on HCWs practices on infection prevention measures who indicated that hand washing before dealing with patients was not practiced by 96.5% of the nurses, whereas it was 65.2% among physicians. Hand washing is one of the most effective ways of controlling infections in a healthy facility setting and hence failure to wash hands for some procedures could be a factor that propagates the spread of infections. All the respondents indicated that they had never attended any in service training. Lack of in-service training opportunities may cause the health workers to forget or get reluctant in carrying out some standard operating procedure in infection prevention. This indicates that the equipment required to implement infection prevention are often out of stock and this leaves health workers unable to implement the recommended procedure of infection prevention. This is similar to what Amin [4], reported that shortage of proper protective gear for certain diseases in developing countries increase the chances of transmission of infectious diseases like Ebola, Marburg, Hepatitis B and tetanus.

CONCLUSION

All the health workers had substantial level of knowledge on infection prevention and control. However, this knowledge was mainly theoretical since the health workers could correctly mention infection prevention and control measures but most of them were not being practiced at the hospital. The researcher identified hand washing, decontamination, boiling of instruments, wearing of gloves, and waste segregation and disposal as the common practices at the hospital being practiced to control infections. Patient triaging, was not being practiced at the hospital.

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