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An investigation into level of preparedness to Ebola Virus Disease in Zimbabwe. A case study of Tsholotsho District Hospital.

BY

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GWERU, ZIMBABWE

DECLARATION

I certify that this dissertation is the product of my own work and submitted for the Bachelor of Adult Education Degree Programme. It has not been submitted impart or in full to any University and or any publication.

Student

Signature..... Date .....

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I having supervised and read this dissertation, lam satisfied that this is the original work of the author in whose name it is presented. I will confirm that the work has been completed satisfactorily for presentation in the examination.

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An investigation into the level of preparedness to Ebola Virus Disease in Zimbabwe. A case study of Tsholotsho District Hospital

A research project submitted to the Department of Adult education in partial fulfilment of the requirement for the Bachelor in Adult education.

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Dedication

This document is dedicated to my family: Mr L Dube, Luyanda and Omhle Angel.

ABSTRACT

The study was carried out to investigate level of preparedness of Zimbabwe to Ebola Virus Disease. Tsholotsho District Hospital was the study site. A case study design was used. A sample size of 20 health care workers was used as study participants. Stratified random sampling was used to select study participants. Questionnaires were used to collect data. The study findings revealed that health care workers have limited knowledge on Ebola disease. The health care workers are not conducting health education on Ebola Virus Disease. The hospital environment lacks designated area for nursing patients with Ebola Virus Disease. There is no literature, policies and procedures with information on Ebola virus Disease. The study recommended training of health care workers on Ebola Virus Disease. Schools of nursing in district hospitals are recommended to have a computer laboratory.

Acknowledgement

I would like to pass my sincere gratitude to DR P Bhebhe who was the project Supervisor. DR P Bhebhe provided unconditional support and guidance. Special thanks go to Dr N Sithole for granting me permission to conduct the research at Tsholotsho District Hospital. All the support provided by study participants is greatly appreciated. Finally, I thank my husband Mr L Dube and my beloved children Luyanda and Omhle Angel for their support and positive comments which kept me motivated with my research project.

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RESEARCH TOPIC

An investigation into the level of preparedness to Ebola disease in Zimbabwe. A case study of Tsholotsho District Hospital

CHAPTER ONE

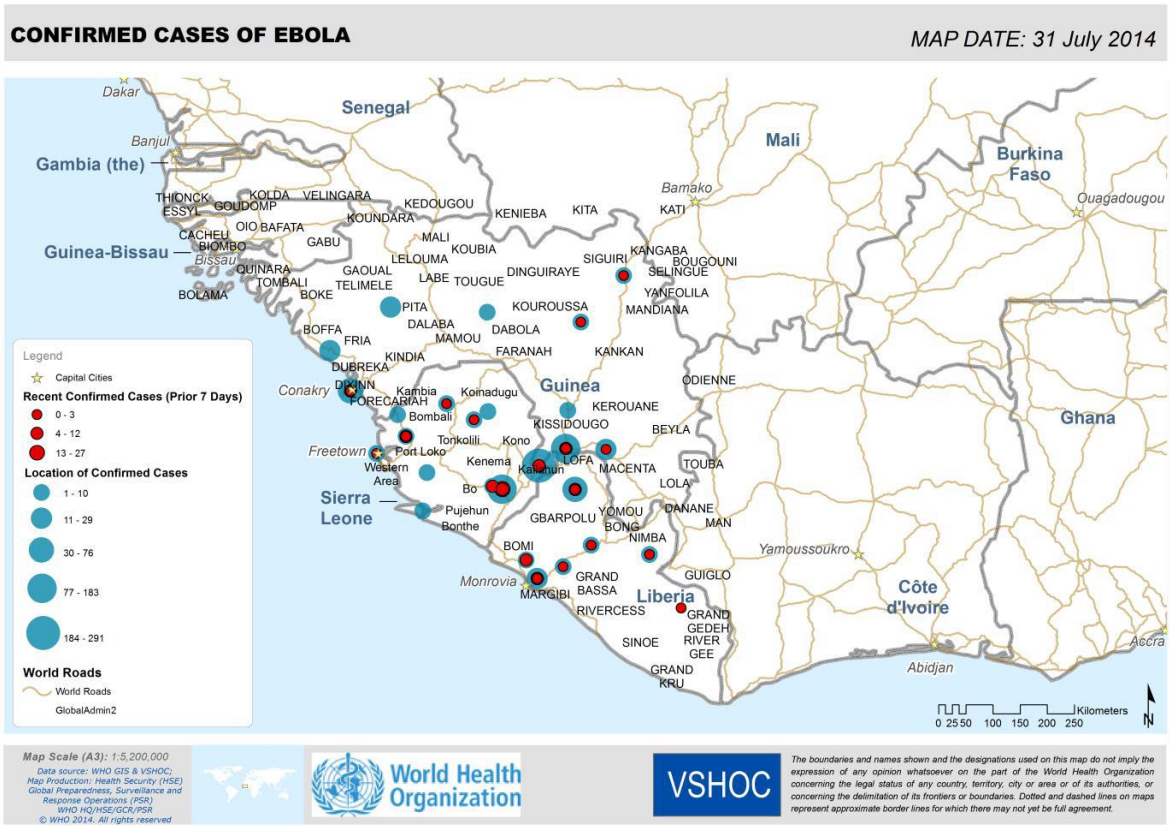
THE RESEARCH PROBLEM

1.0 Introduction

This study assessed the level of preparedness to Ebola virus disease in Zimbabwe. This chapter looked at the background information to the problem, statement of the problem, research questions significance of the study, delimitation and limitations of the study. The chapter ended with a summary.

1.1 Background to the study

As news of Ebola spread through the internet, television and radios the people around the world feared for their lives. Ebola had not been included in sustainable developmental goals but it was causing a major threat to the health of people of the West Africa. According to WHO (2015) Ebola was a health problem affecting most of the West African countries. It was a severe and fatal disease. It spread through direct contact such as broken skin or mucus membrane, with infected blood or body fluid or objects that had been contaminated with infected body fluids.



The Ebola Virus disease (EVD) first appeared in 1976 in two simultaneous outbreaks, one in Nzara in Sudan, and another in Yambuka in DRC (Centre of Disease Control; 2014). The later occurred near the Ebola River from which the disease took its name. On the 8th of August 2014, World Health Organisation declared Ebola Virus Disease outbreak in West Africa (Centre of Disease Control; 2014).

Ebola Virus Disease had spread between countries for example, it started in Guinea and spread to Sierra Leone and Liberia by one traveller, Nigeria and USA by one traveller, Senegal by one traveller and to Mali by two travellers(Cornia;1988). By analyzing the way that Ebola had spread from one country to another in West Africa, one could anticipate that Ebola would spread to Zimbabwe in the same way. This raised the issue of how Zimbabwe could be prepared to deal with the disease.

The Virus was transmitted to people from wild animals and transmitted to the human population through human to human transmission (Vidal; 2013). The study had identified the level of knowledge of the health care workers and the general population on the mode of transmission of Ebola in Zimbabwe. However there was no single case of the Ebola Virus Disease which was detected in Zimbabwe, but the question was: were people aware of the mode of transmission?

The average Ebola Virus Disease case fatality rate was around 50%. In past outbreaks the fatality rate had varied from 25% to 90%.The 2015 Ebola outbreak was the largest in history. It caused more than 672 deaths and 1,200 infections in Guinea, Liberia, and Sierra Leone (Disease Control Centre, 2015).With such a high fatality rate caused by Ebola, one could ask self, was Zimbabwe in a position to handle Ebola if it had spread into the nation?.

Zimbabwe was rated amongst the poorest countries in the world and it was occupying the position 21. Economically, socially, environmentally and technologically Zimbabwe was deteriorating. There was no much economic growth which had been reported. Health institutions owned by the state were struggling to provide essential medicines that were meant to serve life at a low affordable cost. Health facilities were experiencing shortages of the qualified human, technology, equipments and material resources. The Ebola outbreak demanded highly trained personnel that had adequate knowledge on proper use of protective clothing and cross infection prevention (United Nations; 2014). Failure to meet the required care standards might result in loss of many innocent lives, as was seen in Liberia.

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The study established the level of preparedness to Ebola in Zimbabwe. Also provided a strong knowledge base on how Zimbabwe should get prepared to deal with the Ebola Virus Disease outbreaks.

Chronological history of Ebola outbreaks

Year	Country	Case	Death	Fatal rate	Species
1976	DRC	318	280	88%	Zaire
1976	Sudan	284	151	53%	Sudan
1977	DRC	1	1	100%	Sudan
1979	Sudan	34	22	65%	Sudan
1994	Gabon	52	31	60%	Zaire1994
1994	Cote Devoir	1	0	0%	Tay forestry
1995	DRC	315	254	81%	Zaire
Tan-apr1996	Gabon	31	21	68%	Zaire
1996	S/ Africa ex Gabon	1	1	100%	Zaire
2000	Uganda	425	225	53%	Sudan
2001-2002	Congo	57	44	75%	Zaire
2001-2002	Gabon	65	53	82%	Zaire
Jan-Apri2003	Congo	143	128	90%	Zaire
NovDec2003	Congo	35	29	83%	Zaire
2004	Sudan	17	7	41%	Sudan
2005	Congo	12	10	83%	Zaire
2007	DRC	264	187	71%	Zaire
2008	DRC	32	14	44%	Zaire
2011	Uganda	1	1	100%	Sudan
2012	Uganda	24	17	71%	Sudan

Adapted from Centre Africa for Disease control (2014)

Table above shows that Ebola had a high fatality rate. To reduce the case fatality rate, measures that promoted early detection of the disease were put in place. A detection of one case of Ebola called for team work and implementation of a well planned preparedness plan in all health care facilities.

The study checked for level of preparedness to Ebola in Zimbabwe. The study had established that the existing level of knowledge on Ebola Virus Disease amongst the health care workers was inadequate.

Ighobor (2014) stated that community engagement was the key element to successfully controlling outbreaks. Good outbreak control relies on applying a package of interventions, namely case management, surveillance and contact tracing, good laboratory service , safe burials and social mobilisation. Furthermore the health care system preparedness considered the need for appropriate care and infection control of the identified patients (WHO; 2015). More so, emergency public information and warning on the Ebola Virus Disease were important. Ministry of Health and Child Care should prepare and disseminate information to all levels of care on: the definition of Ebola, mode of transmission and Ebola case management. Failure to communicate effectively with the community might lead to high rates of mortality and morbidity as was the case in Guinea. In Guinea communication was not effective as a result people had a poor perception of the strategies presented to them by the health services and their partners (Diakite; 2014).

Ebola greatly impeded countries' socio economic developments and their potential to reduce poverty in West African countries (Hinshows; 2014). During the outbreak the resources that were planned for developmental projects might be diverted to the management of the cases of Ebola. This might reduce potential economic and social growth.

Ebola Virus Disease might result in restriction of the movement of people, for example international airlines could be cancelled. For example, Sierra Leone closed its borders and there was no movement of people, no trade was taking place. Boarder jumpers increased in number as a result the disease managed to spread to other countries (Bausa; 2014).

The rate of unemployment might rise in areas which would be affected by the Ebola Virus Disease. Also the businesses might be closed due to restriction of movement of people across the borders. The few companies and industries that would remain might cut down the number of the employees and working hours might be reduced (Plot; 2014). This would result in fall in mass production.

Also Ebola might cause a rise in morbidity and mortality from diseases not related to Ebola itself such as Malaria, Tuberculosis, HIV/ AIDS and Diarrhoea that might mimic Ebola signs and symptoms.

More attention might be given to Ebola cases and these other conditions might not be monitored closely.

The Ebola Virus disease crisis left behind a large number of orphans, who needed support. Stigma grew on people who saved lives of the affected for example doctors and health care workers. They were treated by the population as the potential vectors with ability to spread the virus (WHO; 2015).

To deal with the impact of Ebola social protection interventions were essential such as social legislation which provided a legal frame work that defined and protected citizens (Kentikelenis; 2014). The government was supposed to provide financial, health, educational and agricultural support to the affected population.

Inter ministerial committee was formed to contain and manage the Ebola outbreak in West and Central Africa. No case of Ebola Virus Disease was identified in United States, but the nation was ready to deal with the problem if it was become a problem (Disease control and prevention; 2015). There was no reported case of Ebola Virus Disease in Zimbabwe. World Health Organisation was leading the surveillance and monitoring of the disease.

Although the government had the theoretical knowledge on how to manage the epidemic, there was little evidence to suggest that in terms of infrastructure, financial and human resources. Since the worst outbreak of Ebola in West Africa in March 2015 which killed more than 1000 people in countries like Liberia, Sierra Leone and Guinea, triggering an international public health emergency, government had not been pro-active in terms of awareness campaigns on simple issues like the symptoms of the disease, how the virus could be spread and how people could protect themselves. Such information was supposed to be on the notice boards at the country's major hospitals and other public places (BBC News 8 October 2015). The study findings did not reveal such information.

The governments' failure, for example to deal with the cholera outbreak of 2008 which led to the death of 4000 people had raised questions over to country's preparedness and ability to handle Ebola if could spread to Zimbabwe (WHO; 2015).

According to WHO (2015) the health delivery system in Zimbabwe was under tremendous strain as hospital equipment broke down frequently due to age and lack of maintenance.

District hospitals were supposed to have the designated areas for nursing patients with infectious diseases. This demanded a step up effort in educating people on the importance of protecting themselves from the Ebola Virus Disease and national guidelines that would guide infection control.

If people has inadequate knowledge on Ebola they would not have adequate capacity to deal with the problem if it affects them (Mills, Konters, Hogopian, Mtambo and Bourgeault; 2014). This was likely to be evident in countries like Zimbabwe which had never experienced outbreaks of Ebola. Zimbabwe had a large number of people who worked outside the country such as in South Africa, Australia, and UK. Most Zimbabweans also visited Nigeria to seek spiritual treatment of their problems from TB Joshua.

According to WHO (2014) close monitoring was required for those people who were constantly travelling to countries with a history of Ebola virus disease such as truck drivers for cross border trade.

The study was conducted at Tsholotsho District Hospital. Tsholotsho District Hospital was in Matabeleland North Province and was a referral hospital for nineteen health facilities. It had the capacity to admit 160 patients. It catered for emergencies, medical patients, orthopaedic patients, gynaecological patients, tuberculosis patients and patients with infectious conditions

1.2 Statement of the problem

Despite the number of interventions that were put in place to reduce the spread of Ebola to Zimbabwe, Zimbabwe was not prepared to deal with the impact that was associated with Ebola. For example, 42% of children under the age of five were consuming two or fewer meals per day. These children were unlikely to access adequate nutrients necessary for their optimum growth (Zimbabwe National Survey; 2010). Zimbabwe is an agricultural nation and Zimbabweans survive by ploughing and harvesting. Ebola might negatively affect agricultural production since there would be restrictions of the movement of people and other resources leading to reduced food production and worsen the situation in the country.

Smit (2015) has lamented the lack of the provision of quality psycho-social supports to three distinct and crucial parties in the fight of Ebola.

The victim (confirmed Ebola victims and suspected Ebola victims), the families of the confirmed cases suspected victims and, health workers who died while providing for victim, and health workers and caregivers in Liberia. Every Ebola victim is a human who deserves to be treated with dignity in health and in illness. Ebola victims should be accorded inalienable rights. Provision of psycho- social support is crucial for complete recovery. This demands psychological counselling by expert counsellor and rehabilitation services to all the victims. Therefore, Ebola Virus Disease would increase the government expenditure on health issues.

More so, Ebola would increase the work load in the health care facilities which are already understaffed. As a result the quality of care rendered to the patients would fall especially on medical diseases such as malaria, diarrhoea, and meningitis which have high fatality rates. During outbreaks of the Ebola Virus Disease more resources might be directed towards the management of the disease and other diseases might suffer (Smit; 2015).

Ebola would increase the number of orphans (Farrar; 2014). Zimbabwe had a large number of orphans as a result of HIV/AIDS pandemic. HIV/AIDS had left many children as orphans. This increased pressure on the elderly who were taking care of the orphans. Ebola could also exacerbate the situation already prevailing. Resources that were meant for development might be reallocated towards the fight of Ebola. As a result the economic growth of the country might remain stagnant or deteriorate.

1.3 Research questions

The study answered the following questions about level of preparedness to Ebola disease:

a) What is Ebola?

b) What is the cause of Ebola?

c) Are the health staff and people aware of the signs and symptoms of Ebola?

d) What measures are in place to deal with Ebola in case it enters Zimbabwe?

e) Is the intervention to prevent spread of infection at Tsholotsho District Hospital effective to deal with Ebola cases?

1.4 Significance of the study

The investigation of the level of preparedness to Ebola disease might help to identify the existing gap that needs to be closed. The study findings might help to improve the following areas:

Ministry of Health and Child Care

The study findings revealed areas that need to be improved in health sector by Ministry of Health and Child care. Through utilisation of the study findings, the Ministry of Health and Child Care might be in a position to evaluate the level of preparedness to Ebola Virus Disease in Zimbabwe. The study findings might also be used to change policies and procedures by the Policy makers. Changes in guidelines and strategies might be effected through use of the garnered knowledge from the research findings+.

District Hospital Management Team

The study findings might provide a base on which the district management team would evaluate the district's level of preparedness to the Ebola Virus Disease. The hospital management team might also use the study findings to plan and budget for the required resources such as trained human personnel in infection control and personal protective clothing which would be needed during the Ebola Virus Outbreak. The District Hospital Management Team also might use the study findings to strengthen their disease surveillance monitoring system. Health education group talks on Ebola Virus Disease would be strengthened.

Local authority

The study findings might be used by the local authority to plan for interventions that might reduce risk of transmission of the Ebola Virus Disease in Zimbabwe. The Local authority might also lobby for more self income generating projects especially for the youth and young adults, who might be pushed by the economic hardship to search for greener pastures in countries with high prevalence of Ebola Virus Disease. Lastly, the local authority might use the study findings to provide comprehensive information awareness on Ebola Virus Disease to the community at large.

Future researchers

The study findings would also open up new avenues for future researchers on areas that need to be investigated. This would reduce the risk of duplicating other researcher's effort. The study might provide resource material to the further researchers on the Ebola Virus Disease.

Researcher

The study was done in partial fulfilment of the Bachelor in Adult Education. The researcher gained knowledge on conducting research study in the future with minimal supervision.

Resource mobilisation

Above all the study findings might be used by different Ministries which are involved in the management of the Ebola Virus Diseases to mobilise resources and support from the Government, Non- Governmental Organisations and Stakeholders through relevant authorities.

1.5 Limitations

The researcher was inexperienced in conducting a case study and dependent largely on the supervisor for guidance. The researcher was self sponsored and faced financial challenges in conducting the study. The researcher is employed full time by the Ministry of Health and Child Care with a lot of responsibilities and also a block release student at Midland State University. This left the researcher with limited time to conduct a comprehensive study. The majority of the study participants were unfamiliar with the research topic. As a result not all selected study participants were willing to participate. This prolonged time for sampling procedure. The researcher had to select new participants to replace the number that refused to participate.

1.6 Delimitation

The study focused on the level of preparedness to Ebola Virus Disease in Zimbabwe. The study was conducted in Matabeleland North Province in Tsholotsho District. Tsholotsho District Hospital was the case study site. The Study population were the Health Care Workers at Tsholotsho District hospital. Data were garnered from Registered General Nurses, Student Nurses, District Medical Officer, Environmental Health Technician, Laboratory Scientist and Hospital Matron.

1.7 Summary

This chapter provided the reader with background information to Ebola Virus Disease. The statement of the problem was given. Questions that the study answered were identified. The significance of the study was discussed. The study limitations and delimitation were also highlighted. The next chapter focuses on the review of related literature.

CHAPTER TWO

Review of Related Literature

2.0 **Introductio**n

In this chapter relevant literature to the study question was identified, interpreted and evaluated. Leedy (1985) stated that the review of the related literature could help the researcher to deal with the problem with deeper insight so that it could be compared to previous work by others. There was no much literature that had been documented on Ebola. In reviewing the literature the researcher went through the reports and journals containing studies that had been done on Ebola in West Africa. Definition of Ebola, mode of spread, incubation period, signs and symptoms, diagnosis, treatment, and impact of Ebola were discussed in detail. The researcher also looked at the interventions that were put in place by the West African countries as a measure to respond to the next Ebola outbreak. Furthermore, the researcher highlighted factors that made it difficult to contain Ebola in Liberia, Sierra Leone, and Guinea. More so factors that contributed to containment of the Ebola Virus Disease in Senegal and Nigeria were discussed. The chapter ended with a summary.

2.1 Definition of Ebola

Ebola Virus Disease is a viral infection that causes an acute, serious illness which is often fatal if untreated (Wordsworth; 2014).

2.2 **Background to the Ebola Virus disease**

According to WHO (2014) the 2014 outbreak of the Ebola Virus Disease originating from Guinea was the first documented case in West Africa and the largest Ebola outbreak ever recorded. Ebola first appeared in 1976 with concurrent outbreaks in the Sudan and the Democratic Republic of Congo. Whereas those outbreaks resulted in fewer than 450 deaths, the World Health Organization (WHO) reported more than 10,000 Ebola-related deaths in Sierra Leone, Liberia, and Guinea as of March 22, 2015.

On August 4, 2014, USAID's Office of U.S. Foreign Disaster Assistance (OFDA) activated a Disaster Assistance Response Team (DART) to coordinate the U.S.

Government's Ebola response activities in West Africa and Washington-based Response Management Team to support the DART administratively.

The first priority of the U.S. Government's Ebola response strategy was to control the outbreak. Control activities fall into seven categories: humanitarian coordination; case management; surveillance and epidemiology; restoration of essential health services; social mobilization and communications; logistics; recovery; resilience, and transition.

2.3 Risk factors

High risk factors included the following: contact with human body fluids, dead bodies, and sexual activity with an infected partner. Less contact at these areas created better chances of avoidance of the disease (CDC; 2014f). The main way to protect self was to maintain the highest standards of personal hygiene and cleanliness.

2.4 Mode of transmission

Ebola was introduced into the human population through direct contact (through broken skin or mucus membrane) with the blood, secretions, organs and other bodily fluids of infected animals for example Chimpanzees, gorillas, fruit bats, monkeys and forest antelopes (Darka: 2015).

Ebola had spread through human to human transmission via direct contact with the blood, secretion, organs or other bodily fluids of infected people, with surfaces and material for example bedding, clothing contaminated with those fluids (Fanceconi and Yoti etal; 2003). .

During an outbreak the disease could spread quickly within families and healthcare settings (Farrar; 2014). Rapid identification of cases was critical. Proper personal protective equipment such as head gears, N95 masks, goggles, latex gloves, gumboots and gowns should be used.

The recommended standard operational procedures for cleaning and sterilisation of used equipments on infections conditions should be followed to prevent the spread of Ebola Virus Disease.

2.5 Incubation period

Ebola has an incubation period that ranges from 2- 21 days (Breman and Johnson (2004).

2.6 Signs and symptoms

According to Borchet (2012) signs and symptoms of Ebola included the following: muscle pain, fever, headache, and severe throat. These signs and symptoms would occur within

2- 21 days. Then the patient would develop rash, vomiting, diarrhoea, fatigue, internal and external bleeding.

2.7 Diagnosis

According to CDC (2014d) the diagnosis of the disease was made through laboratory investigations to identify the causative organisms. The virus family Filoviridae includes 3 genera: Cuavavirus, Marburgvirus and Ebola virus. The three are the five species that had been identified in Zaire, Bundibugyo, the Sudan, Reston and Tai Forest. The Bundibugyo Ebola virus, Zaire Ebola virus and Sudan Ebola virus had been associated with large outbreaks in Africa.

According to Crist (2015) the following laboratory tests should be done: urea and electrolyte, full blood count and liver function test.

2.8 Treatment

Source isolation to prevent spread of infection was the first step in the treatment of Ebola (CDC; 2014d). Physical barriers were erected to isolate patients for example protective fencing to prevent people from entering, heavy sheets placed over doorways to alert others that the person was isolated were put in place (Stanford University ;2014).

The following were measures that were taken whilst managing patients affected by Ebola Virus Disease (Robert, Van Orman and Vogel; 2014):

- Signs alerting others were placed where they could be seen.
- Personal protective equipment such as wearing of two pairs of gloves when handling body substances was encouraged.
- Used needles were not reused or recapped.
- All equipments used on the patient were sterilised

Bleach solution (1:10) was used to disinfect: surfaces, medical equipment, patient bedding and reusable protective clothing before it was laundered.

- Hand hygiene was mandatory as the virus was transmitted through contact. Hand washing was the first line of defence to protect one self and others.
- Hydration levels were maintained for example through infusion of intravenous fluids such as volume expanders (Normal saline and Ringer Lactate).
- Close monitoring of blood pressure was paramount
- Patients were treated for secondary infections that were caused by the virus.

2.9 Recommended Personal Protective Equipment

According to Stanley (2014) the following personal protective equipment were used to prevent contracting Ebola Virus Disease: head gear, goggles, disposable plastic apron, gumboots, over shoe cover, latex gloves elbow length, and N 95 respirators. The personal protective equipments were destroyed after being used on a patient.

2.10 Impact of Ebola

The epidemic of the Ebola virus had affected different sectors such as the educational system, religious system, cultural and community institution amongst others (WHO; 2014e). This was because when there was an Ebola outbreak people were discouraged to form gatherings, attend school, to perform certain rituals such as bathing of the body of the deceased person. Such activities were believed to fuel the spread of the disease.

It could also affect the economic growth in a country for example the 2014 Ebola outbreak had been costly to Africa. It had been estimated that there had been a full percentage point fall on GDP growth from 4.5 % to 3.5% just in one country with losses emanating from reduced agriculture and cross border trading (World Bank Group; 2014).

2.10.1Economic:

The outbreak of the Ebola virus had a negative impact on the economy as was seen in West African countries such as Sierra Leone, Guinea and Liberia (World Bank Group; 2014). The economic activities of these countries were reduced. This was due to a fall in the sales in the markets and stores, lower activity for restaurants, hotels, public transport, construction and educational institutions.

This was also caused by the government measures such as restrictions on people's movements and reduced activities by the foreign companies. Schools in Liberia were closed for seven months due to Ebola and the government continued to pay salaries of teachers who were not at work.

2.10.2 **Food security impact of EVD was high in affected and some non-affected countries.**

The restriction of movements of goods and services in the West African Countries had affected access to food (WHO; 2014d). The quarantine of communities had also affected access to goods and services. Many business people had fear of trading with the affected areas this resulted in serious shortages of basic commodities. The closure of borders and international stigmatization had also affected access to food (WHO; 2014 d). There was a strong correlation between EVD outbreaks and the prevalence of under nutrition.

2.10.3 Restriction on the movement of people

Given the size of the outbreak and its potential to be exported to other countries in Africa or the world, two international airlines based outside Africa cancelled flights to the Ebola affected countries (Breman and Johnson ; 2014). Within Africa, three West African airlines had their flights to affected countries restricted and one trans-African airline restricted its flights to the Ebola affected countries. Reduced flights between African countries could imply less communication and interaction and could not be in the best interest of integration, which was the vision of the African Union.

Three African countries closed their borders with Ebola affected countries. The closure of borders impeded integration to a limited extent as not all borders in Africa could be practically and definitely closed where evidence showed that the continent's borders were in some cases porous and not well demarcated. In August 2014 one African country banned passengers from the three most affected Ebola countries whilst three other countries banned the entry of passengers from all the four countries affected at the time. One country banned the entry of passengers from the four affected countries and from all suspected West African countries.

WHO (2014) stated that the Airport entry restrictions impeded integration due to reduction in cross border trading, meetings, and other forms of activities which promoted integration. Two of the affected countries had put in place internal movement restrictions. This movement prevented the disease from spreading.

Ebola in West African Countries had led to disruption in the regional trade due to closure of borders and the suspension of international flights. The disruptions had constrained regional trade resulting in shortages of basic commodities and loss of income and employment.

2.10.4 Resource mobilisation

The African Union deployed a joint military and civilian humanitarian mission composed of different experts from various members' states to tackle the Ebola (UNICEF; 2014).

2.10.5 Morbidity and mortality

The Ebola Virus Disease caused a rise in morbidity and mortality rates from diseases not related directly to the Ebola Virus Disease (Roddy and Howard 2012). Fewer people sought formal medical attention because of fear of the stigma being exposed to the disease.

Belpois- Dunchamp etal (2014) one hundred and twenty four (124) health care workers had been infected with 97 deaths indicating an average fatality rate of seventy eight percent. This further worsened the shortage of Health Care Workers.

The weakened health services could also allow the incidence of other diseases to raise for example malaria and fever (Doglaus ; 2014). This was because the signs and symptoms of Ebola Virus Disease mimic those of the stated diseases.

2.10.6 Unemployment

According to World Bank group (2014) the outbreak of the Ebola Virus Disease increased the number of unemployed people due to closure of businesses, for example, in West Africa: bars, hotels and night clubs were closed. Some manufacturing industries scaled down for example construction activities were reduced. Economic activities were restricted and this resulted in retrenchment of the workers thereby worsening the level of unemployment. Unemployment led to fall in the standard of living and gave rise to Malnutrition in children.

2.10.7 Increased number of Orphans and vulnerable children

According to Evans and Popora (2005) the crisis of Ebola left behind a large number of orphans who required support. As of 11 February 2015 (9600) children in Guinea, Liberia and Sierra Leone had lost one or both parents to Ebola (Duglous; 2014). Many of these children needed special attention and support; many felt unwanted and abandoned. Orphans were usually taken in by a member of the extended family but in some communities the fear surrounding Ebola was becoming stronger than family ties.

2.10.8 Social Stigma

Stigma was growing inside countries and those saving lives were the affected doctors and health workers were being treated by the population as potential vectors of the infection making it hard for them and their families to live normal lives (Leggo;2012).

2.11 Review of Response to Ebola outbreak by the affected West African countries.

World Health Organisation and the Governments of Guinea, Liberia and Sierra Leone requested for financial support to the tune of US$ 71,053,413 (Kentilelenis;2014).The financial support was for implementation of the Ebola outbreak response plans and preparedness activities.

This funding plan was based on a vision of empowering the affected countries and to engage all the national and international stakeholders on the ground. The plan ensured coordination among all the actors and the delivery of effective support to the affected countries and countries at risk.

According to WHO (2014) Ebola planning and response required readiness in six key public health care preparedness capabilities which included the following:

- Health system preparedness
- Emergency public information and warning
- Prepared risk communication messages for internal staff and the public including general information on Ebola , risk to public, risk of transmission and protective measures should be put in place(CDC digital kits ; 2014)
- Information sharing on Ebola (CDC; 2014e)

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- Non pharmaceutical interventions
- (Travel- related information and public Health Interventions).
  - Ensure state and local epidemiologic and medical staffs have the latest recommendation for traveller and reviews CDC interim guidance for monitoring and movement of persons with Ebola Virus Exposure.
- Public health laboratory testing guidelines (Rabin; 2014).
  - These should be in place and reviewed to provide health care personnel with updates information on handling specimens for testing from patients under investigation for Ebola Virus disease.
- Ensure that clinical laboratory review laboratory safety protocol and procedures (Rabin; 2014), for example proper use of personal protective equipment and have appropriate and sufficient quantities

  -Interim guidelines for specimen collection, transporting, testing and submission for patients with suspected infection with the Ebola Virus Disease
- Public health surveillance and epidemiological investigation
- Health system preparedness is given below as highlighted by (CDC; 2014f)

  - This includes considering the need for appropriate care and infection control of identified patients and patients under investigation.

  -Infection prevention and Control recommendations for hospitalised patients.
- Ebola disease information for clinicians
- Guidelines for emergency medical services.
- Guidelines for environmental infection control for Ebola

2.12 Factors that made the containment of the Ebola pandemic very difficult in West Africa

2.12.1Lack of preparedness

There were several factors that complicated the containment of the pandemic. The health systems in Guinea, Liberia and Sierra Leone and in most other countries in the region were unprepared for the Ebola outbreak, had lack of trained health personnel, equipments and financing. Ignorance, lack of preparedness and fear had also played an important role. Health professionals had misdiagnosed EVD cases because the early symptoms of the disease resembled those of malaria, cholera and Lassa fever.

The health systems in Guinea, Liberia and Sierra Leone were unprepared for Ebola at the onset of the epidemic. They lacked sufficient amounts of all that was required to contain the epidemic: drugs, ambulances, facilities, trained health personnel, and many other items (WHO; 2014e).

2.12.2The weak health and physical infrastructure

The inequitable distribution of human and financial resources had hampered the response to the epidemic. Due to ignorance or lack of knowledge and preparedness, health professionals misdiagnosed the Ebola Virus Disease because its early symptoms resembled those of other diseases endemic in the region such as malaria, cholera and Lassa fever. In addition, some people thought that the disease was being spread by the government resulting in underreporting and thus contributed to the silent spread of the virus, which remained hidden and eluded containment measures(Phillan, Srikrishra and Sachs ;2014) .

2.12.3 Fear

The high mortality rate associated with Ebola threatened the performance of many interventions that could help contain the epidemic (Emony University; 2014). Fear of infection made the public to be reluctant to engage in contact tracing. The infected persons were hesitant to present themselves for treatment and health workers were frightened to provide care. This was further complicated by the loose migratory patterns in the region and risky cultural practices. The cultural practices such as the culture of burying the dead near their ancestors, corpses were transferred long distances, which thereby fuelled new outbreaks.

2.12.4 Ebola Virus Disease does not respect age.

All age groups were affected, but the heaviest toll was on the most active segment of the population (15-44 years) the labour force. This had serious negative implications on the labour market and national productivity. The population of Tsholotsho District was composed of all sub age groups. The most active sub group were between 15-44 years. That showed that the active group could be highly affected by Ebola Virus Disease during an outbreak.

Toll was also heavy on children**.** Around 20 percent of the infected cases were children. Over 16,600 children either lost one or both parents to the Ebola Virus Disease, which made them more vulnerable to poverty. They lost school hours, ranging from 486 hours in Guinea and 780 hours in Sierra Leone.

2.12.5 There is a feminization of the EVD

The disease's impact was more on women than men in the three epicentre countries.

As of 7 January 2015, the number of EVD cases was higher among women (50.8%) than among men (49.2%) in the three epicentre countries (WHO; 2014e).

The gender disparity was more pronounced in Guinea and Sierra Leone. As care providers, women were more likely to be exposed to the disease transmission vectors such as vomit or other bodily fluids of an infected family member. Furthermore, certain traditional practices and rituals performed on the deceased mostly by women could also pose an increased risk. Women's access to non-Ebola-related services had been constrained. For instance, in Sierra Leone, the number of women gave birth in hospitals and health clinics had dropped by 30 percent. In addition to being physically affected by the epidemic, women had suffered reversals in economic activities and empowerment, due to the Ebola Virus Disease control measures that restricted the movement of people and goods. Tsholotsho District Hospital had more number of women as compared to men. The gender disparities existed put women at higher risk of acquiring the Ebola Virus Disease. The women in Tsholotsho had same gender roles as those in the West African Countries. Tsholotsho District Hospital had large numbers of home deliveries which could be worsened when there could be Ebola Virus Disease.

2.12.6 The cost of the pandemic on GDP is very high

Ebola-free West African countries were not immune from the devastating effects.

In the medium term (2014-2017), the gains in economic growth of the past decade had been reversed. The loss ranged from an annual average of 4.9 percent (low Ebola scenario) to 9.6 percent (high Ebola scenario) for Guinea, 13.7 to 18.7 percent for Liberia, 6.0 to 8.0 percent for Sierra Leone. The actual loss in GDP for the low Ebola scenario was highest in Sierra Leone (US$219 million), followed by Liberia (US$188 million) and Guinea (US$184 million). For the high scenario, it ranged from US$315 million (Guinea) to US$245 million (Liberia), while Sierra Leone could lose as much as an annual average of around 7.1 percent between 2014 and 2017. The loss in per capita income was highest in Liberia (World Bank; 2014).

2.13 Learning from the experiences of countries that succeeded in containing the epidemic

Odera and Martin (2015) stated that the rapid responses from Senegal and Nigeria were positive lessons learned.

In these countries, there were competent and relatively adequate health personnel, decentralized health systems, community engagement and strong leadership.
It was the opposite of Tsholotsho District Hospital which had fewer number of experienced and trained health staff on infection control. The containment of the Ebola Virus Disease could be viewed as difficult in Zimbabwe.

2.13.1 A regional approach to containing EVD will be more effective than just focusing on national preventive actions.

According to Odera and Martin (2015) when there were simultaneous outbreaks in multiple countries that were contiguous to each other, joint cross-border contact tracing, joint treatment and holding centres were more effective. National actions then became complementary. The outbreak in Guinea, Liberia and Sierra Leone was a warning to others in the region because the health systems and their vulnerabilities were the same. Ebola Virus Disease did not know boundaries, and not a single country was immune from the outbreak. This study called for a combined national and regional preventive and early response mechanisms for West Africa.

2.14 Summary

The chapter reviewed relevant literature of Ebola Virus Disease. The researcher defined Ebola disease as a highly infectious disease with high mortality rate. The Risk factors that promoted the spread of diseases were identified such as contact with body fluids from infected people with Ebola disease. The mode of transmission of Ebola was discussed. The incubation period of the Ebola Virus disease was given as well. Signs and symptoms of Ebola were highlighted. The researcher discussed how Ebola disease could be diagnosed. The principles of management of Ebola Virus Disease were given. The impacts of Ebola virus disease were discussed. The factors which contributed to failure to contain Ebola Virus Disease in West Africa were provided. Finally the factors that led to successful containment of the disease in Nigeria and Senegal were reviewed. The next chapter will look at the Research Methodology.

CHAPTER THREE

Research Methodology

3.0 Introduction

This chapter addressed methodology, which included the research design, population, sampling plan, sample size, sampling procedure, research instruments, data collection plan, ethical considerations and data analysis. The chapter ended with a summary.

3.1 Research Design

A research design is the overall plan for addressing a research question including strategies for enhancing the study's integrity (Polit and Beck, 2009). Treece &Treece (1986) define research design as a scheme of action framework for answering the research questions.

The study was conducted as a case study of Tsholotsho District Hospital. A descriptive research design was used. Descriptive research design enabled the researcher to observe, describe and document findings accurately. This also provided insight into phenomena of interest which were under the study. It acted as a 'road map' that had strategies for sample selection, data collection and analysis.

3.2 Population

Creswell (1993) defines population as the larger group of all the things with certain specific properties from which the sample is selected. According to Kumar (2010), a population is the entire set of units for which the survey data are to be used to make inferences.

The study population was the 200 health care workers working at Tsholotsho District Hospital. The targeted population was the registered general nurses, laboratory scientist, student nurses, environmental health technicians, doctors, and hospital matron working at Tsholotsho District Hospital. The study population was composed of the following number of people:

- 128 Registered general nurses.
- 68 Student nurses
- 1 Hospital matron
- 1 laboratory scientist

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- 1 Doctor
- 1 Environmental Health Technician

3.3 Sample size

According to Polit and Beck (2010), the sample size is defined as the number of subjects in a sample. This is considered to be a major issue when conducting a research and evaluating quantitative research. Polit and Beck (2010) explain that the larger the sample, the smaller the sampling error. Sample size determination is the technique of electing the number of observations to include in a sample.

Leedy (1986) highlighted that the study sample should be 10% of the total population. In this study a sample of 20 respondents was used. The sample size was obtained by calculating 10% of 200 health care workers:

(10 /100 * 200 = 20)

3.4 Sampling Method

Sampling is the process of selecting a portion or subset of the designated population to represent the entire population (Chilisa and Preece; 2000). According to Polit and Beck (2010) the purpose of sampling is to increase the efficiency of a research study. When sampling is done properly, the researcher is able to draw inferences and make generalizations about the population from which the sample was drawn.

The researcher used stratified sampling, random sampling and purposive sampling. Stratified sampling was used to group the Registered General Nurses, the Doctor, Environmental Health technician, Hospital Matron, laboratory scientist and the student nurses into different strata. The four participants of the study, the doctor, the hospital matron, environmental health technician and the laboratory scientist were selected using the purposive sampling method because these could not be randomly selected because they were few and were the core supervisors who met the purpose of the study. The remaining 16 participants were selected using the random sampling method because they were many in their strata and this reduced bias.

The researcher wrote “YES” on 16 cards and 176 cards were written “NO”. The cards were placed in a hat and the participants were asked to pick cards from the hat. Those who picked “Yes” were the study participants.

3.5 Instrumentation.

In this study, self administered questionnaires were used to collect the needed data. A questionnaire is a set of questions used to gather information in a survey (Encarta dictionary, 2010). Kumar (2010) defines a questionnaire as a written list of questions, the answers to which are recorded by the participants who read the questions, interpret what is expected and then write down the answers.

The questionnaires which were used consisted of section A, which looked at the demographic data, section B, which looked at the assessment of health care workers knowledge on Ebola disease, and section C, looked at the hospital environment. The use of the questionnaire provided the following advantages:

- The researcher was able to collect information over a short period of time. The researcher distributed the questionnaires to the study participant who answered the questionnaires within two weeks. As a result the researcher was able to finish the study within the stipulated time frame.
- The use of the questionnaire helped the researcher to obtain quick results. This was made possible by the fact that questionnaires were distributed to all study participants at once and over short period of time the participants completed answering the questionnaires. .
- Respondents answered the questions at their own spare time.
- The respondents found it easy to answer the YES / NO questions.

The following challenges were met when using the questionnaire:

- The handwriting of one study participant was not very clear. The researcher found it hard to read what was written.
- One of the questionnaires was returned blank with an accompanying letter from the participant, stating the reason for not answering. The participant had no knowledge on the disease.

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- The researcher had to sample another study participant from the same strata to replace the one who had no knowledge on the disease.

3.5.1 Validity and Reliability

Mann (2015) defines validity as the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform.

Kumar (2010) defines reliability as the ability of a research instrument to provide similar results when used repeatedly under similar conditions. Kane (1990) further explains that reliability is the degree to which an assessment tool produces stable and consistent results. It requires that the operational definition should be sufficiently precise so that all persons following the same procedure will have approximately the same results.

A pilot study was conducted on the health care workers with similar characteristics to those participants of the study to ensure validity and reliability of the instrument. The pilot study was conducted on health care workers at Nyamandlovu Rural hospital. The pilot study was carried out on the 27th of December 2016.

3.6 Ethical consideration

Ethics are norms for conduct that distinguish between acceptable and unacceptable behaviour (Polit and Hunger 2001).

The researcher observed the following Ethical considerations:

3.6.1 Full disclosure

Full disclosure means the researcher fully described to the study participants their rights and the full nature of the study (Christensen and Kockrow; 2006). The researcher informed the participants that they had the right to withdraw their participation at any time when they felt like and that would not affect their future relations with the researcher.

3.6.2 Informed consent

Informed consent means that participants had adequate information regarding the research, comprehended the information and had the freedom to choose to participate voluntarily in the research or decline participation (Polit and Hunger 2001).

I explained to the study participants that the research was for academic purposes. Also the study participants were informed that the researcher was not going to pay anyone for participating in the study. The subjects were informed that they had the right to terminate their participation at any time and their ability to perform in future researches would not be affected. Purpose of the study was explained to the participants. Participants were told that they had the right to refuse to participate in the study and they would not be victimised for that.

3.6.3 Anonymity

Anonymity occurs when even the researcher cannot link a participant with his or her data (Polit and Hunger 2001).

Names of the participants were not allowed to appear anywhere in the questionnaire so as to maintain privacy and confidentiality. The researcher instructed the study participants not to write their names, addresses and any information that could lead to their identification**.**

3.6.4 Confidentiality

A promise of confidentiality to participants is a pledge that any information the participant provides will not be publicly reported or made accessible to parties not involved in the research (Polit and Hunger 2001).

All the data the researcher collected was kept as confidential as possible. The questionnaires were kept under lock and key to maintain confidentiality and prevent unauthorised access to information. All the participants were treated with respect and dignity. All the questionnaires were burnt after conducting the study to avoid access of data by unauthorised persons.

3.6.5 Protecting harm

The following ethical considerations were observed to protect the study participants from harm: Full disclosure, informed consent, anonymity and confidentiality. The study participants were protected from physical, mental, psychological and emotional harm during the study. This was achieved through provision of comprehensive information on the purpose of the study and all the procedures involved. The participants made their own informed consent.

The anonymity of the study participants was maintained through use of pseudo names. Confidentiality was also maintained by ensuring that collected data were kept under lock and Key.

3.6.6 Honesty

The information which the researcher reported as the study findings was written as honest as possible. The researcher did not add or subtract the study findings. This helped to maintain integrity of the study findings.

3.7 Data collection procedures

A letter of introduction was obtained from the chairperson of the department of Adult Education at Midlands State University confirming that l was a research student. Permission to conduct the research at Tsholotsho District Hospital was obtained from the District Medical Officer. Data were collected using questionnaires which were written in English. The investigator started by giving a brief introduction of self and the purpose of the study to all the study participants. After a detailed explanation, permission to interview study participants was sought from them. They were asked to sign a consent form. The participants were asked to follow the instructions provided on the questionnaire.

The questionnaires were left with the respondents for two weeks for them to complete at their own spare time. The data which were obtained were kept in lockable cupboard to maintain confidentiality and prevent unauthorised access. The materials used to garner data were destroyed after the completion of the study.

3.8 Data analysis plan

Howard and Sharp (1983) state that data analysis is a systematic way of transferring collected data and reorganising it , so that the researcher can make some sense of it in relation to the study question and research objectives. The collected data were grouped and placed in categories according to particular characteristics. The collected data were presented in the form of pie charts, tables and bar graphs for easy analysis.

3.9 Summary

The chapter described the research methodology that included the research design, study population, sample and sampling procedures, research instrument and issues of reliability and validity, ethical considerations, data collection procedures, and data analysis plan. The chapter ended with a summary. The next chapter focuses on data presentation, analysis and discussion.

CHAPTER FOUR

Data presentation, analysis and discussion

4.0 Introduction

In this chapter results of the study were analysed. Data were presented in the form of bar graphs, pie charts and tables for easy analysis and interpretation. Results were discussed and meaning was given.

Guiding objectives: To determine level of preparedness to the Ebola virus disease in Zimbabwe.

4.1 Presentation and Analysis of the findings

Section A: Demographic data

Figure 1: Distribution of study participants by designation

N=20

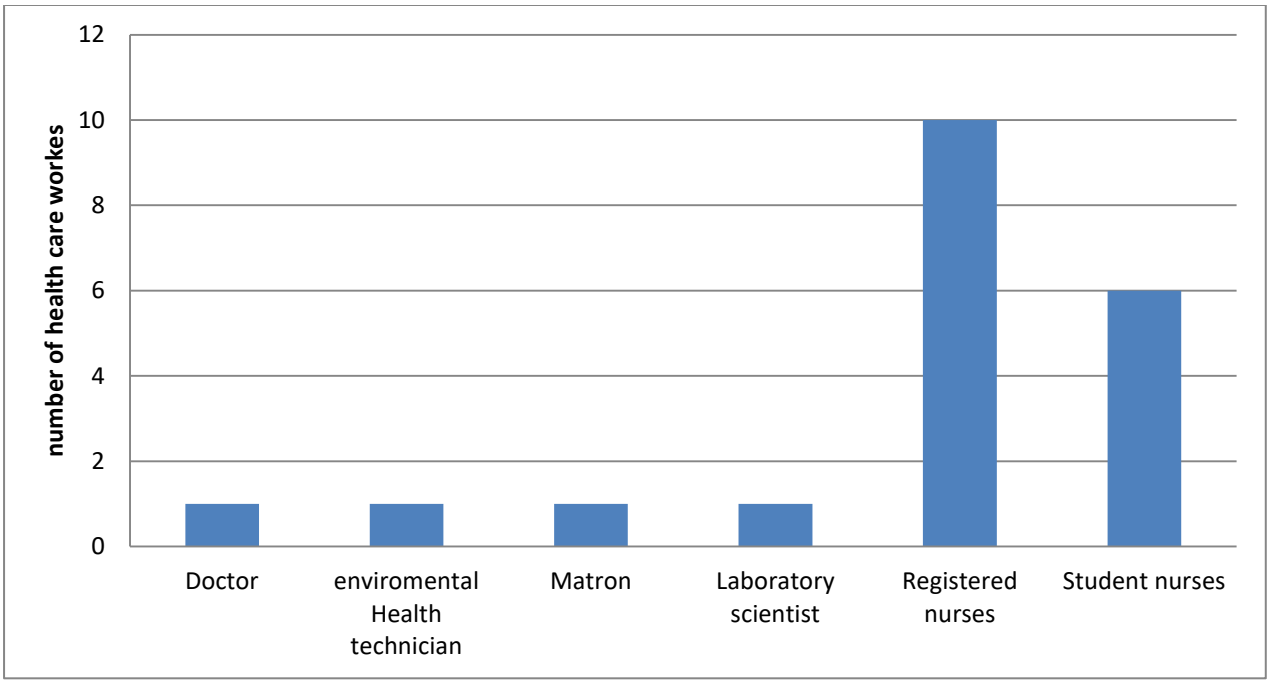


Figure 1 above shows the number of study participants by their designation. The study participants were 20 health care workers with different designations. 10(50%) of the participants were Registered General Nurses. 6(30%) of the study participants were Student Nurses. 1(5%) of the study participants was a laboratory scientist. 1(5%) of the participants was a medical doctor. 1(5%) of the participants was a Hospital Matron.

Lastly, 1(5%) of the participants was an Environmental Health Technician. This revealed that registered general nurses form the highest number of health care providers and followed by Student nurses. Meaning that if there could be Ebola outbreak these were the health care providers who were likely to be affected in their large numbers. Also nurses and student nurses spent more time with the patients unlike the other stated health care providers who see the patients during clinical rounds.

Figure 2: Distribution of respondents by age

N= 20

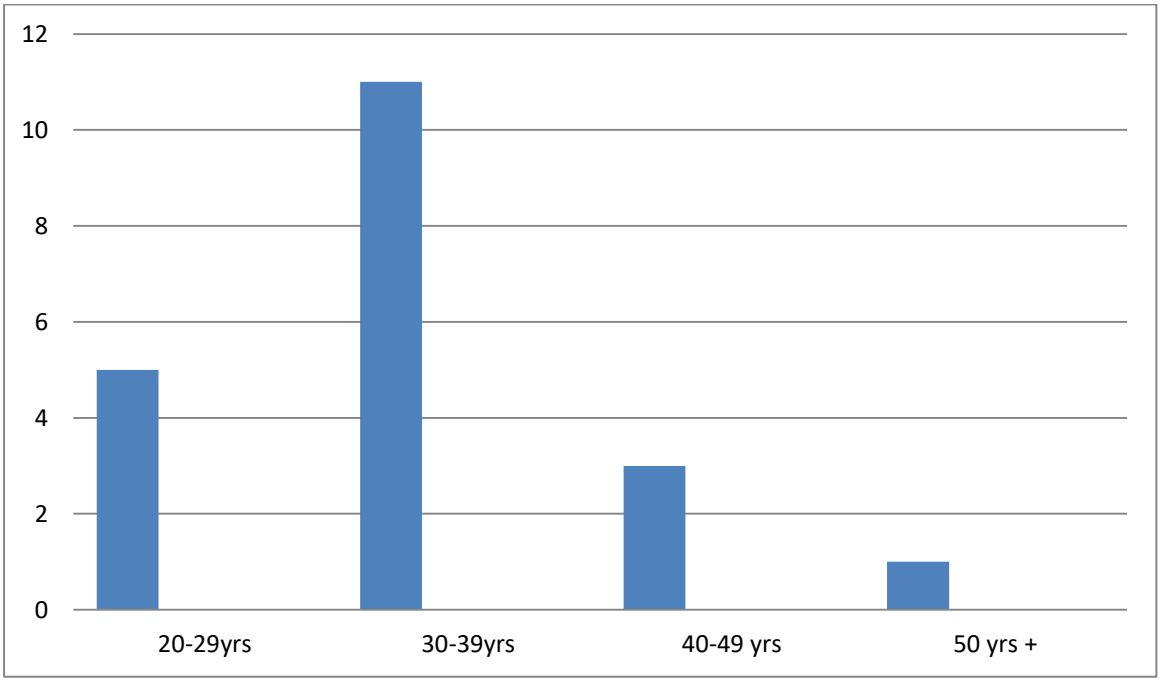


Figure 2 above shows the ages of the study participants. The ages were categorized into four groups and the frequencies in each group were recorded. In the age group 20 to 29 years; there were 5(25%) participants. In the age group 30 to 39 years, there were 11 (55%) participants. In the age group 40-49 years, there were 3(15%) participants. In the age group above 50 years, there were 1(5%) participants. The majority of the health care providers were young adults whose age was between 20-39 years.

Figure 3 Distribution of study participants by the area of work.

N=20

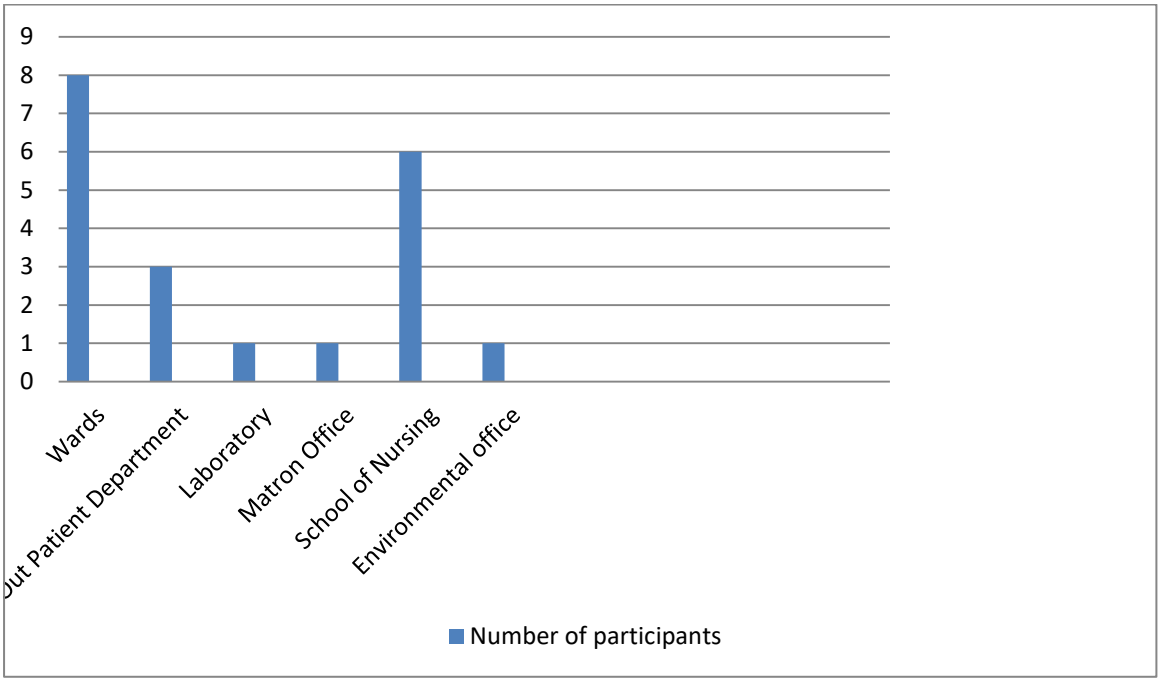


Figure 3 above shows the number of study participants by the area of work. 8(40%) of the study participants were registered general nurses who worked in the wards. 6(30%) of the study participants were the student nurses who learnt at Tsholotsho school of nursing. 3(15%) of the study participants were the registered general nurses who worked at the out-patient department. 1(5%) of the study participants was a laboratory scientist who worked in the laboratory. 1 (5%) of the study participants was the matron who worked in the hospital matron office. 1(5%) of the study participants worked in environmental office

Table 1: Distribution of study participants by sex

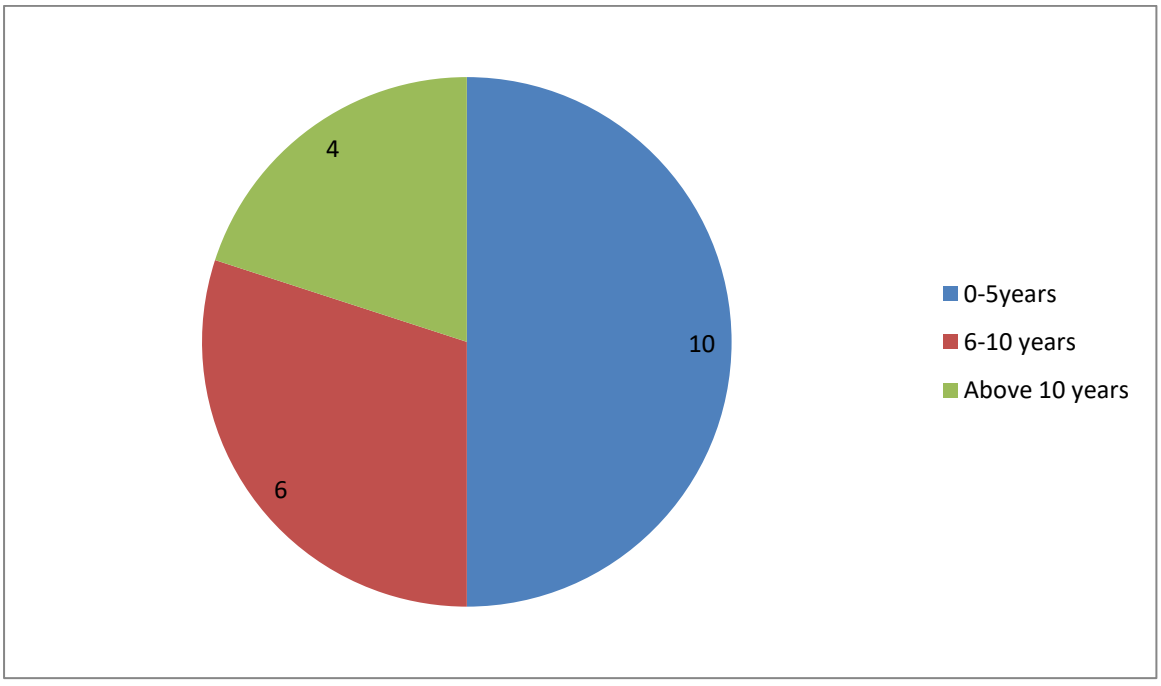
N=20

sex	Number of participants
Female	14
Male	6

Table 1 above shows the distribution of the study participants by their sex. 14(70%) of the participants were female health care providers who worked at Tsholotsho District Hospital. 6(30%) of the participants were male health care providers who worked at Tsholotsho District Hospital.

Figure 4 Distribution participants by years of working experience

N=20



The pie chart above shows the distribution of study participants by years of working experience. 10(50%) of the study participants had (0-4) years of working experience in the health care system. 6(30%) of the participants had (6-10) years of working experience in the health care system.

33

4(20%) of the participants had worked in the health care facility for more than 10 years.

Figure 5: Distribution of study participants by their qualifications

N=20

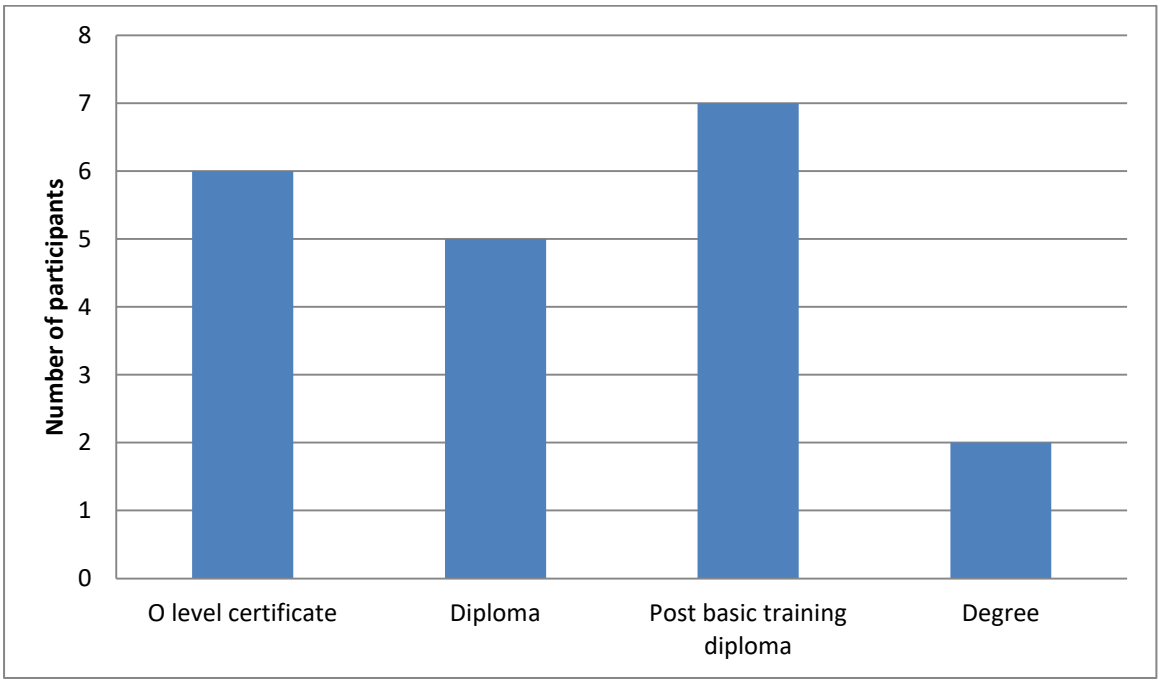


Figure 5 above displays the qualifications of the study participants. 6(30%) of the study participants had Ordinary level certificates as their basic qualifications. 5(25%) of the study participants had general diploma in the areas of their specialities. 7(35%) of the study participants had additional post basic training diplomas. 2(10%) of the participants had first degrees.

SECTION B

Assessment of health care worker's knowledge on the Ebola Virus Disease

Table 2: **Distribution of study participants by ability to define Ebola Virus Disease correctly**

N=20

Definition	Number of respondents
correct	11
incorrect	9

Table 2 above shows the distribution of study participants by their ability to define the Ebola Virus Disease correctly. 11 (55%) of the study participants were able to give definition of Ebola correctly.

9(45%) of the study participants gave an incorrect definition of Ebola Virus disease.

Figure 6: Distribution of participants by knowledge of the causative organism of Ebola Disease.

N = 20

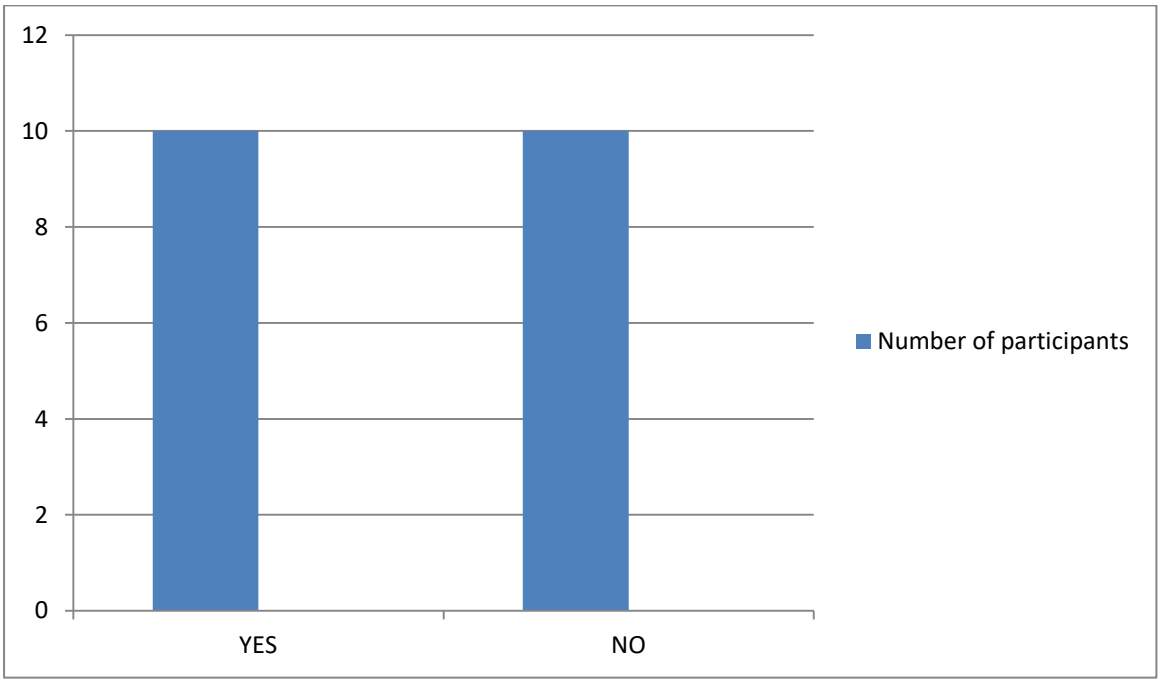


Figure 6 above shows the distribution of the study participants according to knowledge on the causative organisms of Ebola Virus Disease. 10(50 %) of the study participants answered YES. These were the study participants who knew the causative organisms of the Ebola Virus Disease. 10(50%) of the study participants answered NO. These were the study participants who did not know the causative organisms of the Ebola Virus Disease.

Figure: 7 Distribution of participants by knowledge of signs and symptoms of Ebola Disease

N=20

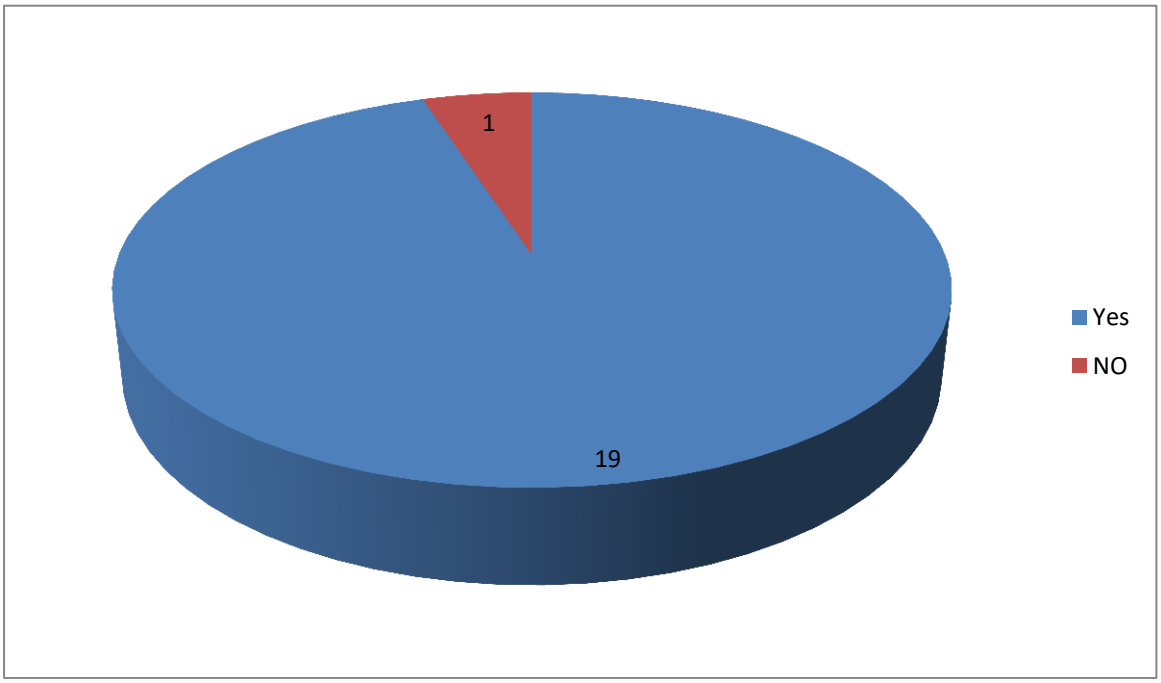


Figure 7 above shows a pie chart displaying the distribution of the study participants by the knowledge on signs and symptoms of Ebola Virus Diseases. 19(95%) of the study participants answered YES. These were the study participants who knew signs and symptoms of the Ebola Virus Disease. 1(5%) of the study participants answered NO. This was the study participant who did not know the signs and symptoms of the Ebola Virus Disease.

Figure 8 Distribution of study participants by knowledge on the mode of transmission of the Ebola Virus Disease

N=20

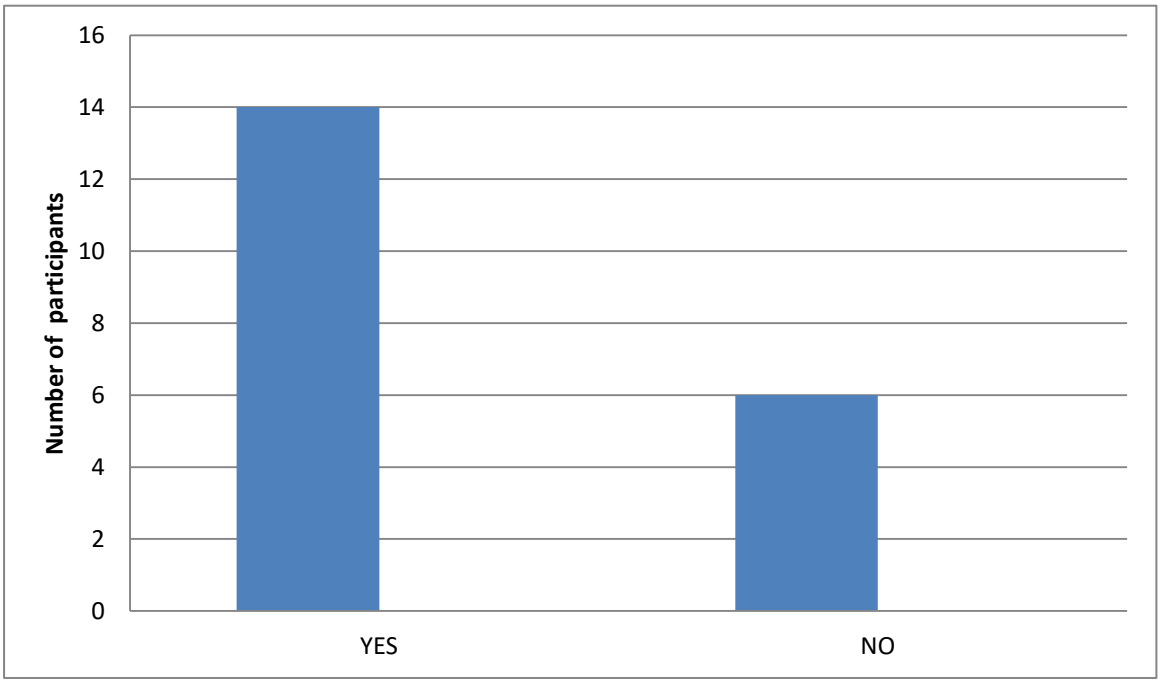


Figure 8 above shows the distribution of the study participants by the answer they gave to the question on knowledge on mode of transmission of the Ebola Virus Disease. 14 (70%) of the study participants answered Yes. These were the study participants who knew the mode of transmission of the Ebola Virus Disease. 6(30%) of the study participants answered NO. These were the study participants who did not know the mode of transmission of the Ebola Virus Disease.

Figure 9 Distribution of study participants by knowledge of incubation period of Ebola Virus Disease

N=20

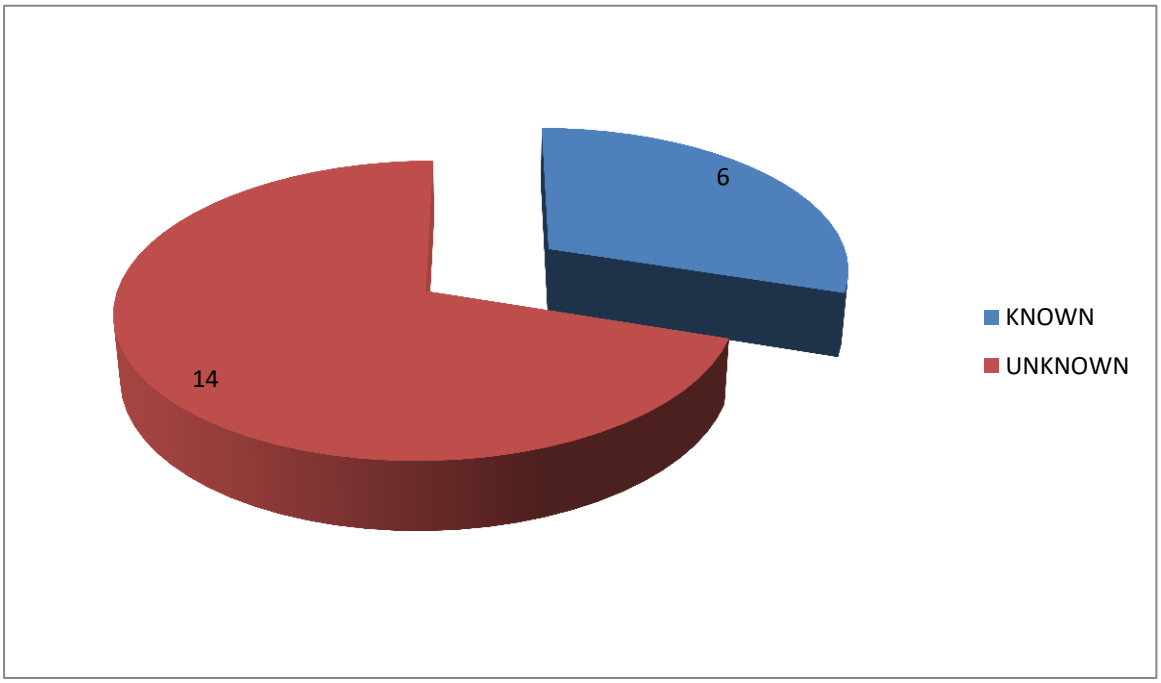


Figure 9 above shows the distribution of the study participants by the knowledge they had on the incubation period of the Ebola Disease. 14(70%) of the study participants knew the incubation period for the Ebola Virus disease. 6 (30%) of the study participants did not know the incubation period of the Ebola Virus Disease.

Figure 10 Distribution of participants by knowledge on the risk factors for contracting Ebola Virus Disease

N=20

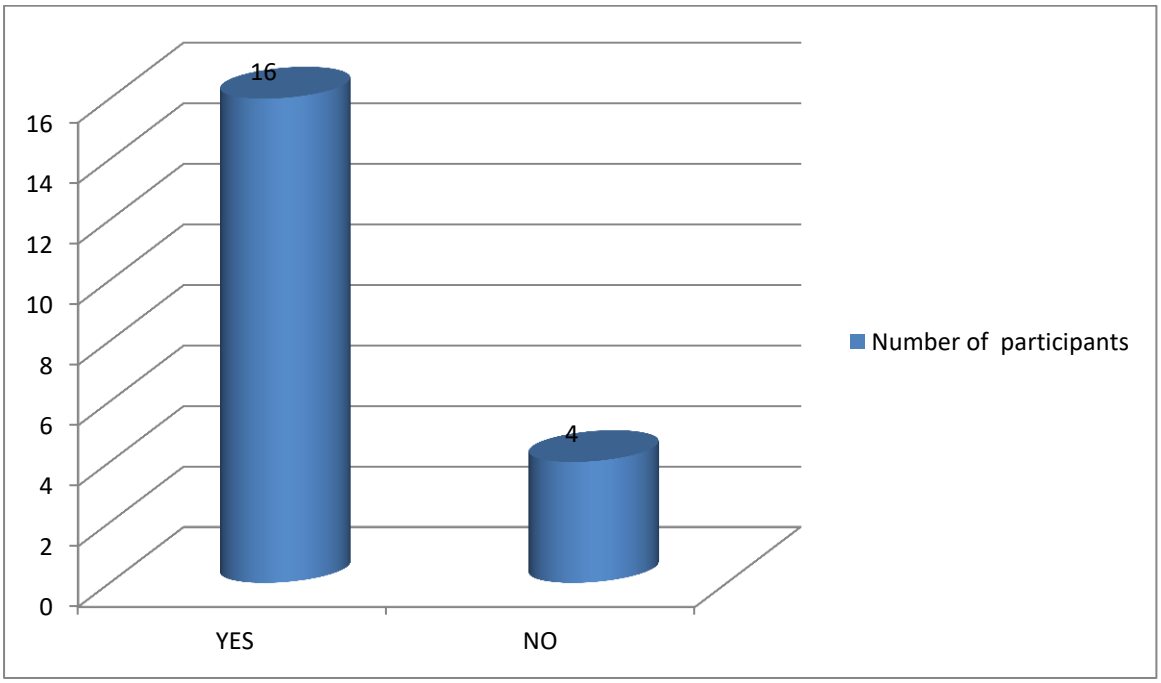


Figure 10 above shows the distribution of the study participants by their knowledge on the risk factors for contracting Ebola Virus Disease. 16(80%) of the study participants answered YES. These were the study participants who knew the risk factors for contracting Ebola Virus Disease. 4(20%) of the study participants answered NO. These were the study participants who did not know the risk factors for contracting Ebola Virus Disease.

TABLE 3: Distribution of study participants by knowledge of Ebola treatment

N=20

Answer	**Number of participants**
YES	5
NO	15

Table 3 above shows the distribution of the study participants by knowledge of Ebola treatment. 5 (25%) of the participants knew how to manage Patients with Ebola Virus Disease. 15(75%) of the participants had no knowledge on the management of the patients with Ebola Virus Disease.

SECTION C: Hospital environment assessment

Figure 11 Distribution of study participants by knowledge of health care workers trained in infection control

N=20

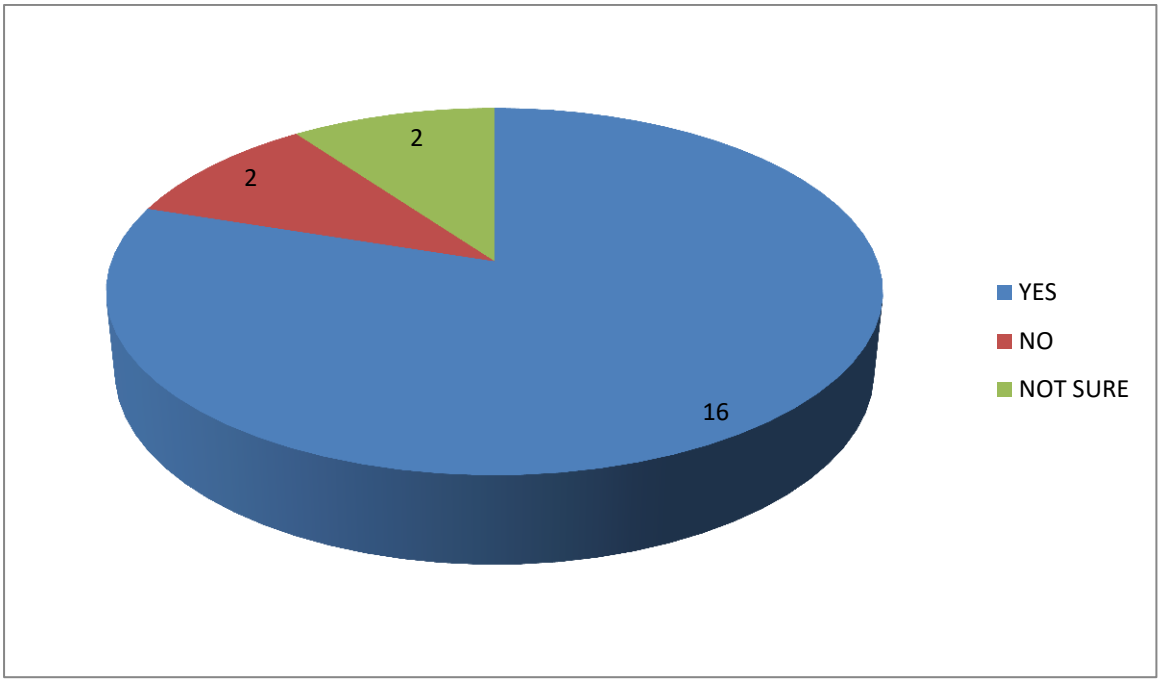


Figure 11 shows a pie chart showing distribution of study participants by the knowledge on health care workers who were trained on infection control. 16(80%) of the study participants answered Yes. These were the study participants who agreed that they were health care workers who were trained on infection control. 2(10%) of the study participants answered NO. These were the health care workers who were not aware that there were health care workers who were trained on infection control. 2 (10%) of the study participants were not sure whether they were health care workers who were trained on infection control.

Figure12: Distribution of study participants by knowledge on availability of infection control policy in all departments.

N=20

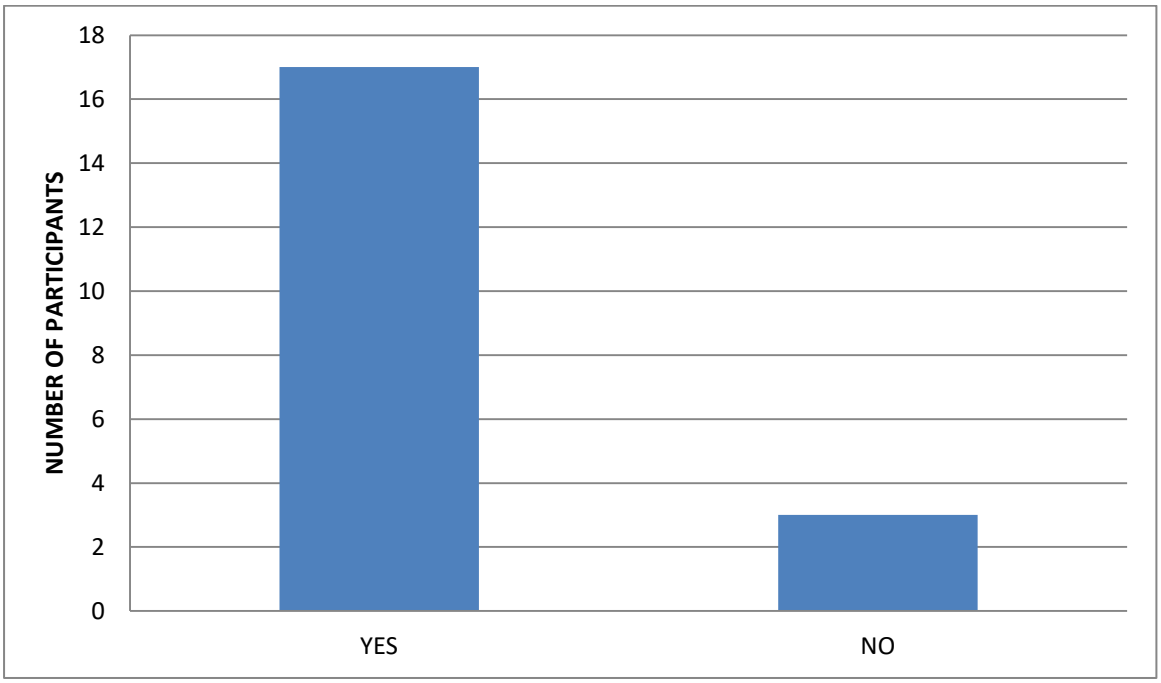


Figure 12 above shows the distribution of the study participants by knowledge on the availability of infection control policy. 17(85%) of the study participants answered Yes. These were the study participants who knew that there were infection control policies in their departments. 3(15%) of the study participants answered NO. These were the study participants who were not aware of the availability of infection control policies in their departments.

Figure13: Distribution of study participants by knowledge on the availability of infection control guidelines

N=20

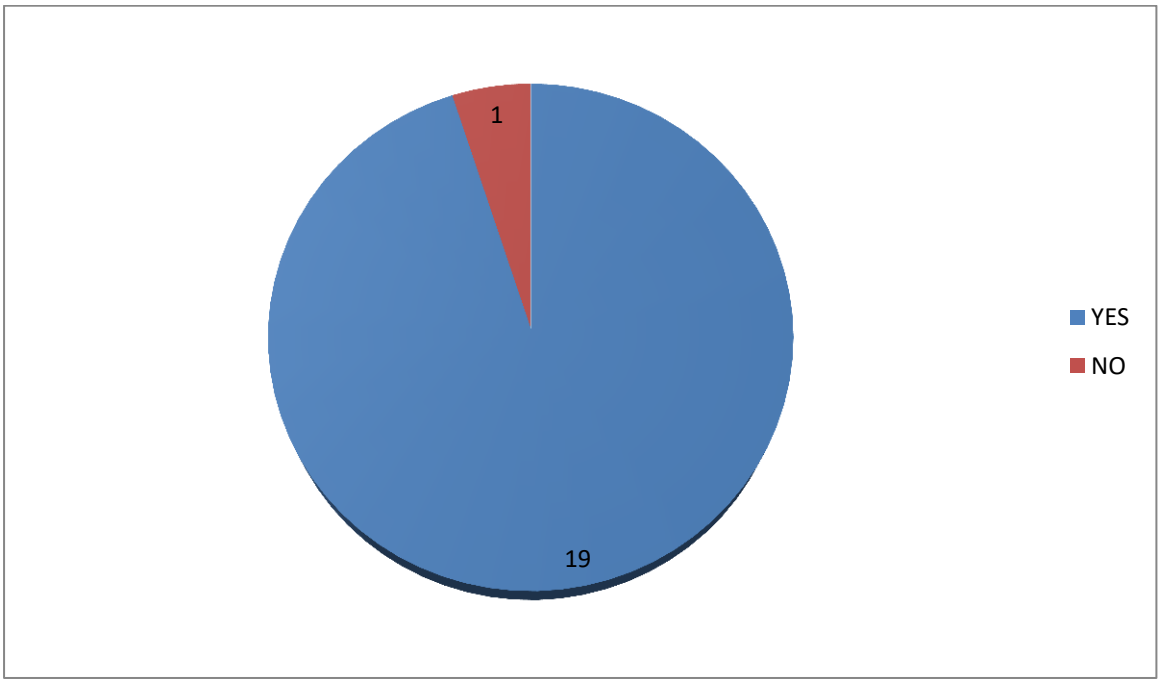


Figure13 above shows a pie chart displaying the distribution of the study participants by knowledge on the availability of infection control guidelines. 19(95%) of the study participants answered YES. These were the study participants who had knowledge on the availability of the infection control guidelines. 1(5%) of the study participants did not know about the availability of infection control guidelines.

Table 4: Distribution of study participants by knowledge on availability of standard operating procedure

N=20

Answer	Number of participants
YES	20
NO	0

Table 4 above shows the distribution of the study participants by the knowledge on the availability of standard operating procedures. 20(100%) of the study participants answered Yes. The availability of the standard operating procedures was known by all the study participants. None of the study participants answered NO. There was no one who was not aware of the availability of standard operating procedures

Figure 14: Distribution of study participants by availability of designated area for nursing patients with infectious conditions.

N=20

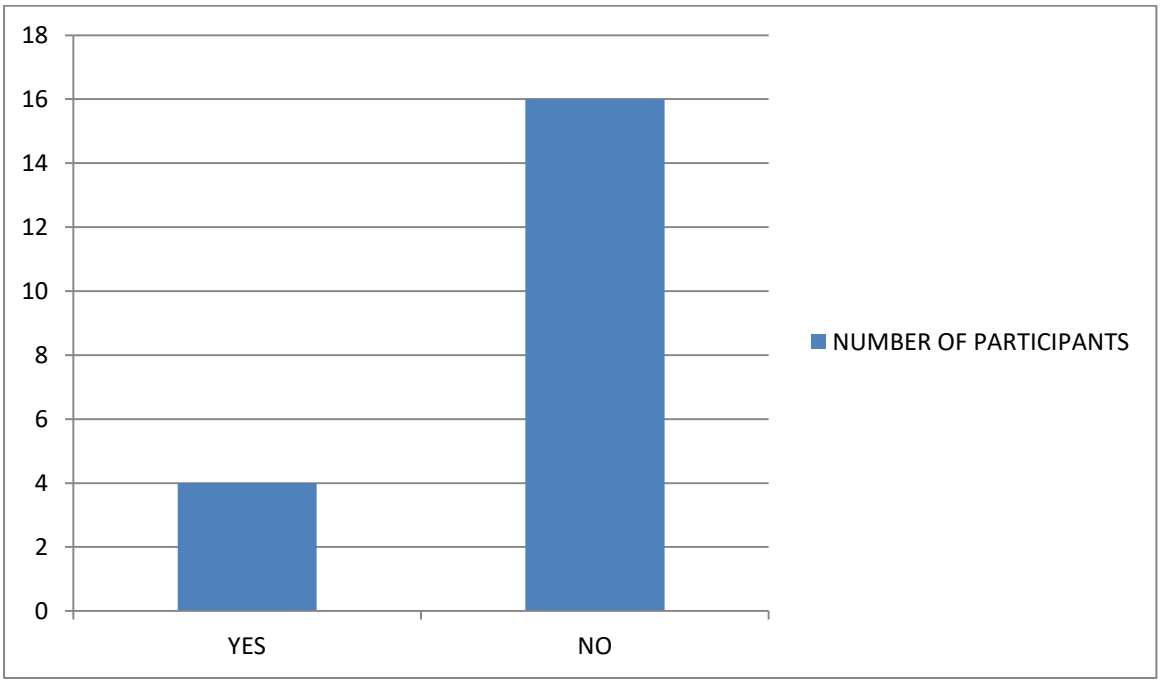


Figure 14 above shows the distribution of the study participants by knowledge on availability of designated areas for nursing patients with infectious disease. 4(30%) of the study participants answered YES. These were the study participants who were aware that within the hospital there were places identified for nursing patients with infectious conditions such as Ebola Virus Disease. 14(70%) of the study participants answered NO. These were the health care workers who were not aware of the availability of the designated areas for nursing patients with infectious conditions such as Ebola Virus Disease.

Figure 15: Distribution of study participants by knowledge of appropriate personal protective clothing recommended for handling Ebola Virus Disease Cases

N=20

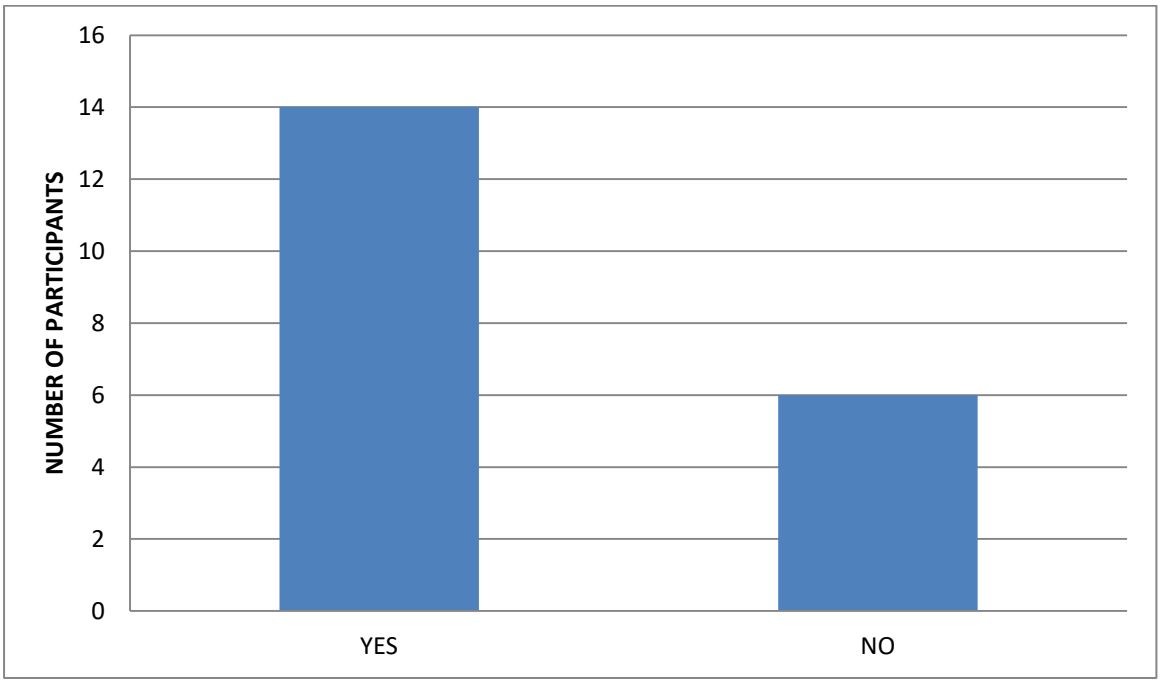


Figure15 above shows the distribution of the study participants by knowledge on the appropriate personal protective clothing recommended for handling Ebola Virus Disease cases. 14(70%) of the study participants had knowledge on the appropriate personal protective clothing recommended for handling Ebola Virus Disease cases. 6(30%) of the study participants had no knowledge on the recommended personal protective clothing for handling Ebola Virus Disease cases.

Figure: 16 Distribution of study participants by knowledge on the availability of hand washing points

N=20

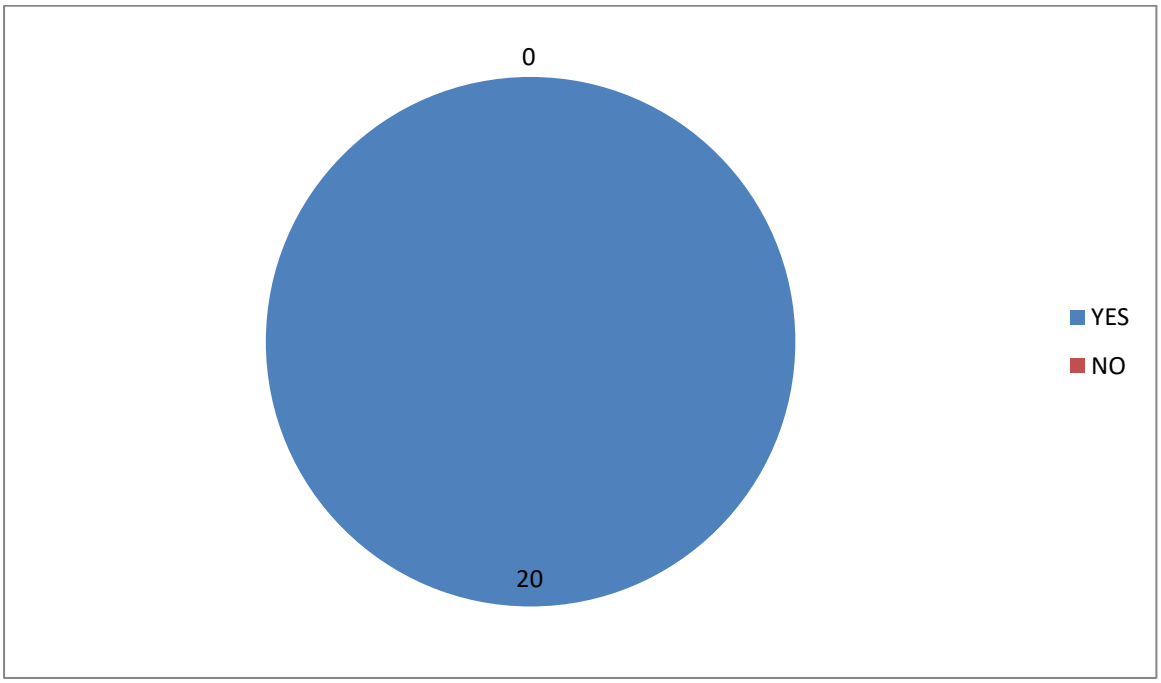


Figure 16 above shows a pie chart displaying distribution of the study participants by knowledge on the availability of hand washing points. 20 (100%) of the study participants answered YES. All the study participants knew that there were hands washing points in their departments. None of the study participants answered NO. There was no one who was not aware that there were hands washing points in their departments.

Figure 17: Distribution of study participants by knowledge on how to handle infectious waste

N=20

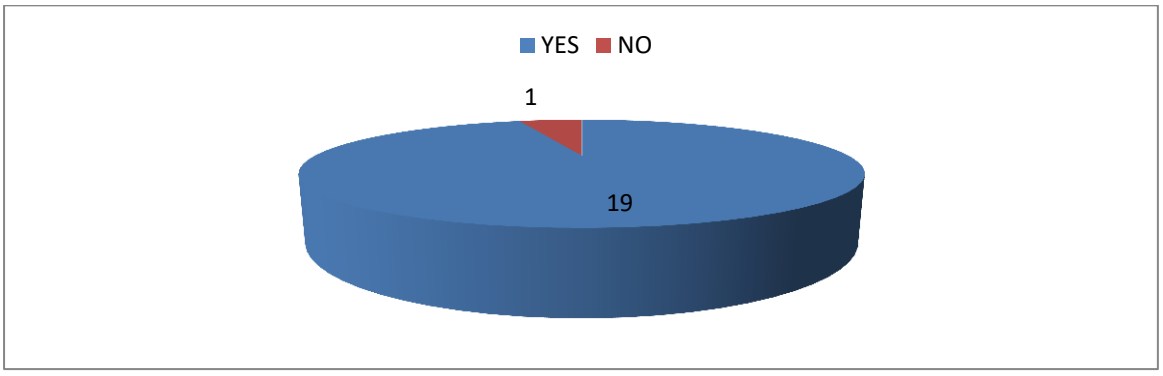


Figure 17 above shows the distribution of the study participants by the knowledge on how to handle infectious waste.

19(95%) of the study participants answered YES. These were the study participants who had knowledge on how to handle infectious waste. 1(5%) of the study participants answered NO. This represented study participants who did not know how infectious waste could be handled.

Table 5: Distribution of study participants by knowledge on availability of literature with Ebola Information

N=20

Answer	Number of participants
YES	3
NO	17

Table 5 above shows the distribution of the study participants by knowledge on the availability of literature with Ebola Virus Disease Information. 17(85%) of the study participants answered NO. These were the study participants who did not have knowledge on the availability of the literature with Ebola Virus Disease information. 3(15%) of the study participants answered YES. These were study participants who knew that literature with Ebola Virus Disease were available.

Table 6: Distribution of the study participants by knowledge on health education talks on Ebola Virus Diseased been conducted

N=20

Answer	Number of Participants
During outbreak	4
Not been done	16

Table 6 above shows distribution of the study participants by the knowledge on health education talks on Ebola Virus Disease been conducted. 16(80%) of the study participants stated that health education on Ebola Virus Disease was not being conducted at all. 4 (20%) of the study participants stated that health education on Ebola Virus Disease was being conducted during an outbreak.

Figure 18: Distribution of study participants by knowledge on the availability of displayed procedure to be followed when one encounters a patient with Ebola Virus Disease

N=20

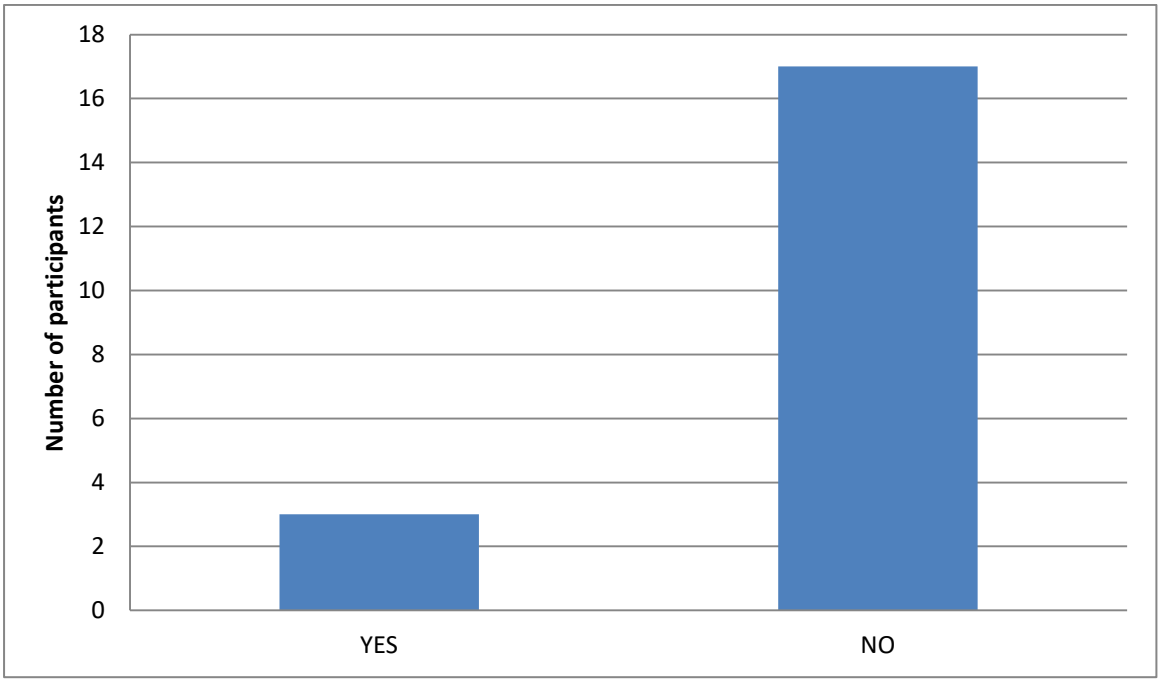


Figure18 above shows the distribution of the study participants by knowledge on the availability of displayed procedure to be followed when one encounters a patient with Ebola. 17 (85%) of the study participants answered NO. These were the study participants who did not have information on the availability of the procedures that could be followed when one encounters a patient with Ebola Virus Disease 3(15%) of the study participants answered YES. The study participants who answered YES knew that procedures that could be followed when one encounters with patient with Ebola Virus Disease were available.

Figure 19: Distribution of study participants by knowledge on monitoring of Ebola Virus Disease

N=20

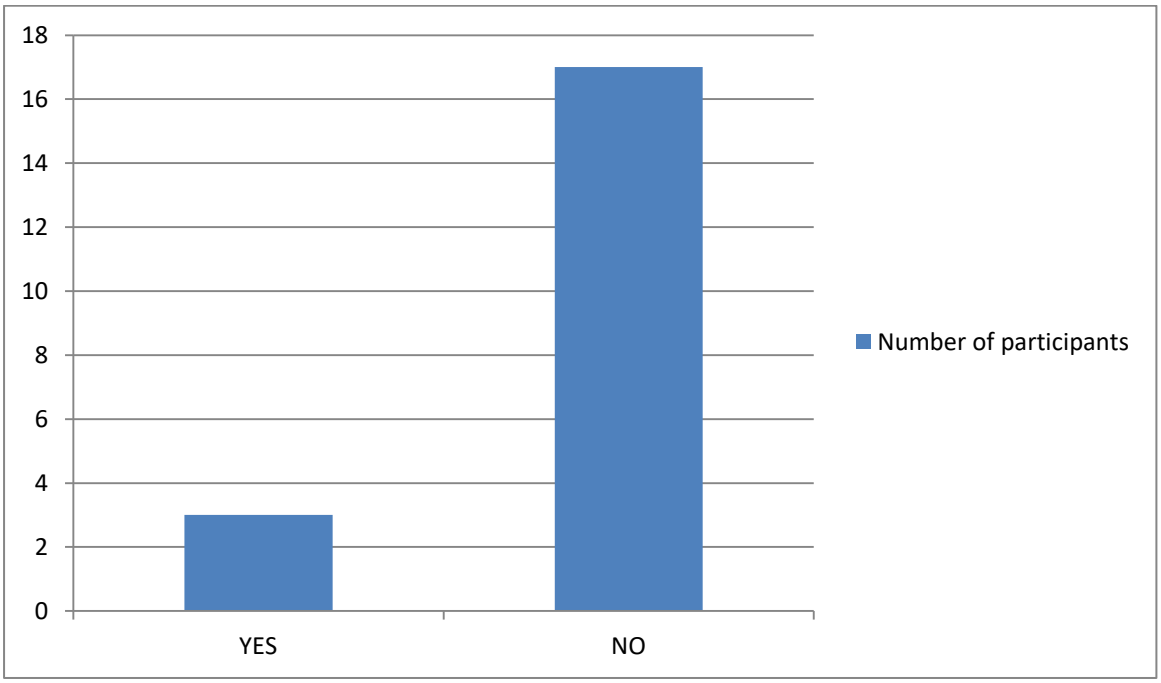


Figure 19 given above shows distribution of the study participants by knowledge on monitoring of Ebola Virus Disease. 3 (15%) of the study participants answered NO. The study participants who answered NO had no knowledge on how the Ebola Virus Disease could be monitored. 17 (85%) of the study participants answered YES. These were the study participants who were aware that Ebola Virus Disease surveillance monitoring was being carried out especially at the major borders.

Figure 20: Distribution of study participants by opinion provided to prepare hospital to encounter Ebola Virus Disease outbreak

N=20

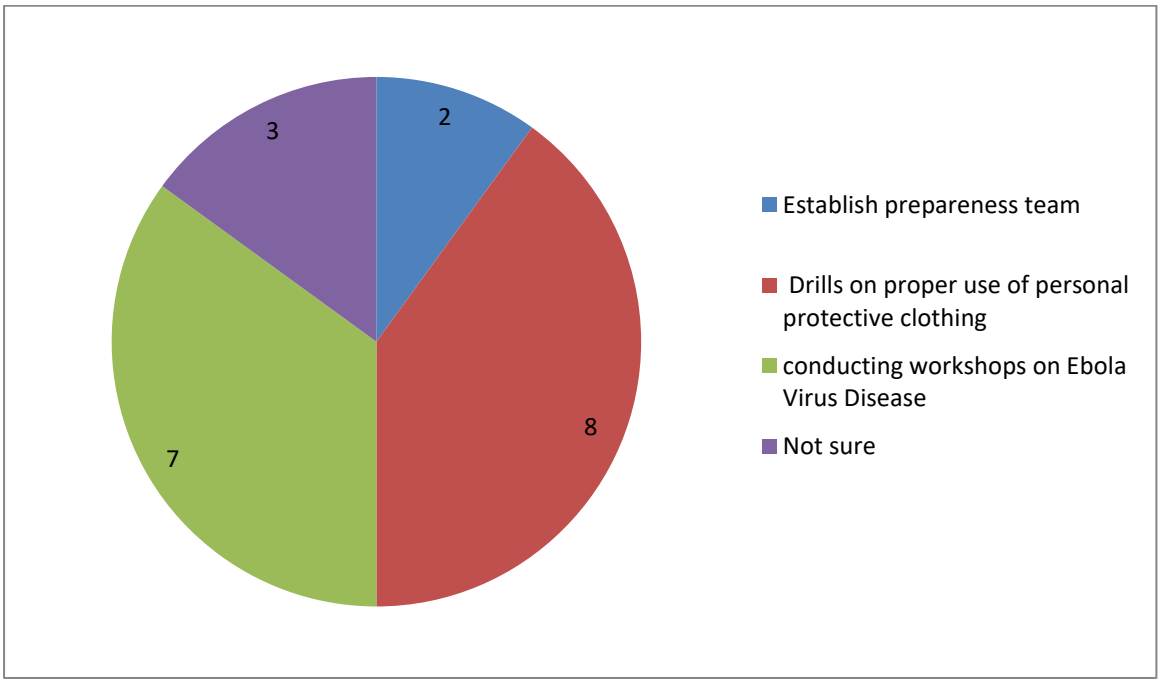


Figure 20 above shows a pie chart displaying the distribution of the study participants by the opinion they provided to prepare the hospital to encounter Ebola Virus disease. 8 (40%) of the study participants suggested that drills on proper use of personal protective clothing could help the hospital to get prepared for the Ebola virus disease. 7(35%) of the study participants gave conducting workshops as a means which could be used to prepare the hospital for the Ebola Virus Disease. 2 (10%) of the study respondents suggested that formation of hospital preparedness team could be an effective way to be prepared for Ebola Virus Disease. 3(15%) of the study participants were not sure on what could be done to get prepared for the Ebola virus Disease virus diseases Outbreak.

4.2 Discussion of the study findings

4.2.1 Demographic characteristics

4.2.1.1Designation

A total of twenty (20) participants participated in the study. The participants were the Registered General Nurses, Student Nurses, Laboratory Scientist, Hospital Matron, Doctor and the Environmental Health Technician.

The Registered General Nurses had the highest number of the study participants. The Registered General Nurses contributed 10(50%) of the study participants. The student nurses had the second highest number of study participants of 6 (30%). The Laboratory Scientist, Hospital Matron, Environmental Health Technician and the Doctor had the least number of 1(5%) of the study participants. The results of the study had revealed that registered general nurses were the largest group of health care workers in the district hospital and they spent more time with the patients. This showed that if there was an outbreak of the Ebola Virus Disease the greater number of nurses would be affected if they had limited knowledge on the disease. Therefore, the group needed more training than the rest. Above all the health care workers who had the least numbers of the study participants needed as well to be trained in dealing with the Ebola Outbreaks because if one person would die from Ebola that would give 100% case fatality rate.

4.2.1.2Age group

The majority 11 (55%) of study participants were between the age ranges of 30-39years. This was followed by the age range of 20-29 years which had 5(25%). The 3(15%) of the participants belonged to age range of 40-49 years. The least number 1(5%) of the participants fell between 50 years and above. The study findings revealed that most of the health care workers were young adults who were still active to acquire more knowledge and skills in new conditions such as Ebola. The health care workers who were above fifty years had experience in managing the previous outbreaks such as Typhoid and Cholera. This was the group that could use past experience to prevent spread of Ebola virus Disease. They therefore needed more training on Ebola since special precautions and measures might be needed to prevent the spread of the disease.

4.2.1.3 Work place

The greatest number of the study participants 8(40%) worked in the ward. The second highest number of the study participant 6(30%) worked at the school of nursing these were the health care workers who were assumed to have the latest information on Ebola. Surprisingly, the study finding did not reveal the veracity of this assumption. The 3 (15%) of the study participants worked at the outpatient department. These were the health care workers who would come first into contact with Ebola Virus Disease cases. They therefore needed tutorials and drills in Ebola case identification and management.

The 1(5%) of the study participants worked in the Laboratory with the prime duty of identifying the causative organisms of the Ebola Virus Disease. This was the health care worker who needed more skills in handling of specimens.

Also 1 (5%) of the study participants was the Hospital Matron who was the supervisor of all health care workers in the wards and other departments at the district hospital. As a supervisor of all the nursing team the matron needed to be up-skilled with comprehensive information of Ebola Virus Disease through sensitization meetings.

Lastly, 1(5%) of the study participants worked at the environmental health department. This was the health worker who was responsible for controlling the spread of the disease through establishing physical barriers. The environmental health technician also required latest information on management of infectious conditions.

Finally, the study findings revealed that the District Hospital had the complete team needed to handle infectious conditions. The district health team executives therefore needed sensitization meetings on new conditions such as Ebola Virus Disease.

4.2.1.4 SEX

Females made 70% of the study participants whilst the remaining 30% were the males. Female health workers had the highest number of study participants. Males were the least study participants. This showed that if the Ebola Virus Disease would be encountered in Zimbabwe most female health care workers would be affected. Also because of the different roles that were assumed by females in the community made them to be more vulnerable. Therefore, they needed intensified comprehensive demonstrations on how to handle Ebola Virus Disease.

4.2.1.5 Work experience

10(50%) of the study participants had 0-5 years of working experience. This formed the biggest number of the study participants. 6(30%) of the participants had 6-10 years of working experience whilst 4(20%) of the study participants had more than 10 years of working experience. The least number of the study participants had 10 years and more of working experience. This showed that at a district hospital there were fewer experienced health care workers as compared to junior. This also implied that the majority of the health care workers needed more mentoring and on job training on infection control.

4.2.1.6 Qualification

7 (35%) of the study participants had post basic training diplomas, whilst 6 (30%) of the participants had Ordinary level certificates. 5(25%) of the study participants had general diplomas. 2 (10%) of the study participants had degrees. The study findings revealed that health care workers had basic knowledge and were capable of acquiring new skills and knowledge of new conditions such as the Ebola Virus Disease. The fact that there were fewer health care workers with degrees indicated that there was defect in the quality of care and supervision available. Therefore, health care workers needed support and supervision from all levels of care to ensure that quality health care services were rendered to the victims of Ebola.

4.2.2 Health care knowledge

4.2.2.1Signs and symptoms

19 (95%) of the study participants had knowledge of at least two signs and symptoms of Ebola Virus Disease. The following signs and symptoms were provided: headache, bleeding from all the body orifices and severe throat. The signs and symptoms of Ebola which included: muscle pain, fever, headache, severe throat, rash, vomiting, diarrhoea, fatigue, internal and external bleeding were highlighted by WHO (2014). Surprisingly, 1(5%) of the study participants did not know even a single sign and symptom of Ebola. Lack of knowledge among health care workers would result in missed cases and incorrect diagnosis of Ebola Virus Disease cases. The disease could even spread undetected as was the case in Liberia. Therefore, clinical in house trainings could be conducted on weekly bases in every health care facility to impart knowledge to the health care workers on new conditions.

4.2.2.2 Mode of transmission of the Ebola Virus diseases

14(70%) of the participant had the knowledge of the mode of transmission of Ebola. 70% of the study respondents stated that Ebola was transmitted through contact with body fluids such as blood. This was supported by (Darka: 2015) who highlighted that Ebola could be spread through direct contact with broken skin or mucus membrane, with infected blood or body fluids or objects that had been contaminated with infected body fluids.

6(30%) were not aware of the mode of transmission. This was the group of health care workers which might not employ preventive measures to minimise the spread of the disease. They therefore needed more in-service training on Ebola disease.

4.2.2.3 Incubation period

14(70%) of the participants did not know the incubation period of the Ebola virus Disease. The majority of the study participants gave 24hours and two days as the incubation period. Only 6(30%) of the study participants were able to give the correct incubation period and these were participants with degrees and post basic diplomas. This 30% of the study participants gave incubation period as from 2- 21 days. This was in line with the literature review information: Ebola had an incubation period that ranges from 2 - 21 days (Breman and Johnson; 2004).

4.2.2.4 Risk factors

The 16 (80%) of the participants were aware of the risk factors. The following risk factors were provided: having unprotected sex with a partner who is infected with Ebola, travelling to countries with outbreaks of Ebola and Nursing patient with Ebola. This was supported by (MD Health; 2014) which reported that the high risk factors to contract Ebola include the following: contact with human body fluids, dead bodies, and sexual activity with an infected partner. 4(20%) of the study participants did not know the risk factors. This was the group of health care workers who would not suspect the Ebola disease on a patient with signs and symptoms that would be suggestive of Ebola. Therefore, the study findings revealed the need for training of health care workers on Ebola Virus Disease.

4.2.2. 5 On Ebola treatment

Source isolation to prevent spread of infection was the first step in the treatment of Ebola (CDC; 2014). 5(25%) of the study participant agreed that Ebola could be treated. 15(75%) of the participants believed that the Ebola virus disease had no treatment. This showed that 25% of the study participants who believed that Ebola could be treated would provide optimal care to assist the patient to recover whilst the 75% of the study participants who believed that Ebola had no treatment would just provide palliative care. Therefore, health care workers needed comprehensive information on Ebola case management.

4.2.3 Hospital environment assessment

4.2.3.1Trained health care workers

16 (80%) of the study participants had knowledge of health care workers who were trained in infection control. 2(10%) of the study participants did not have knowledge on the availability of health care workers who were trained in infection control.

This showed that health care workers who were trained in infection control were not known by other health care workers. Lack of knowledge on the availability of health care workers who were trained in infection control indicated defaults in nature of feedback system in health facilities.

2 (10%) of the study participants were not sure if there were nurses who were trained in infection control at the hospital. Lack of information on the availability of trained infection control nurses displayed by some of the health care workers indicated poor communication and lack of consultation amongst the health care workers.

Therefore, all first and middle line managers needed to be reminded to keep up-to-date minutes on training feedback provided to the subordinates.

4.2.3.2 Infection control policy

The majority of the study participants 17(85%) were aware that there were infection control policies in all departments. The infection control policies were accessible to all health care workers. 3 (15%) of the study participants were not aware that infection control policies were in their wards and departments. However there were infection control policies, there were no policies with specific procedures to be followed in managing cases of the Ebola virus Disease. This indicated that quality of health care that would be provided to patients with Ebola Virus Disease would not be standardized. Therefore, infection control policy on Ebola Virus Disease needed to be formulated and disseminated to all the levels of health care systems.

4.2.3.3 Infection control guidelines

19(95%) of the study participants were aware of the availability of infection control guidelines. The guidelines were reported to be not readily available to them. This revealed critical shortage of infection control guidelines in health care facilities.

1 (5%) of the study participants did not know that there were infection control guidelines. This showed that health care workers did not refer to guidelines always. They therefore needed close monitoring by immediate supervisors when they carried out different sterile procedures.

4.2.3.4 Operation procedure

All 100% of the study participants had knowledge of the standard operational procedures. The standard operation procedures were reported to be not displayed in all departments and wards. This showed that standardised procedures were not being followed.

Therefore the District Hospital Infection Control Team needed to conduct spot visits on all health care workers during procedures.

4.2.3.5 Designated areas

14 (70%) of the participants were unaware of the availability of designated areas for nursing patients with infectious diseases. 6(30%) of the participants knew that there were designated areas for nursing patients with infectious conditions. Identification of designated areas for nursing patients with infectious condition was in line with what was highlighted in Centre of Disease Control (2014), which recommended isolation of the infected patient from other patients as the first step in the treatment of Ebola. Therefore the infection control team needed to communicate with all health care workers the identified areas for nursing patients with infectious conditions.

4.2.3.6. Protective clothing

14(70%) of study participants knew the appropriate personal protective clothing recommended for handling the Ebola Virus Disease patients. The following personal protective clothing were given by the study participants: gloves, goggles, gumboots, gowns and N95 face mask.6(30%) did not know the recommended protective clothing for handling the Ebola virus Diseases cases. The study actually revealed that the recommended protective clothing for handling the Ebola Virus Disease cases was not known by some of the health care workers. Also the study findings revealed that health care workers were not well prepared to use the protective clothing. This could result in spread of the Ebola Virus Disease. Therefore health care workers needed drill and practice on how to wear the protective personal clothing.

4.2.3.7 Availability of hands washing points

All (100%) of the study participants agreed that there were hand washing points and highlighted that they use liquid soap and hand sanitizers for hand washing. This was supported by the information given in literature review which highlighted that hand hygiene was mandatory in the treatment of Ebola Virus cases as the virus was transmitted through contact. Therefore hand washing was the first line of defence to protect one self and others. More demonstrations on hand washing techniques were needed to be provided to all health care workers.

4.2.3.8 Handling of infectious waste

19(95%) of the study participants knew how to handle infectious waste and ways to minimise cross infection. 1(5%) of the respondents did not know how to handle waste and did not know the precautions that needed to be taken to minimise the spread of infection. They therefore needed training on infectious waste management.

4.2.3.9 Availability of literature

17(85%) of the study participants stated that there were no literature with Ebola Virus disease information. 3(15%) of the study participants stated that the Ebola literature could be found on internet and reports from West African countries. The study actually revealed that hard copies of literature with Ebola disease information were not available. This might be the cause of existing lack of adequate knowledge on Ebola amongst health care workers. Therefore more literature with information on Ebola Virus Disease needed to be designed.

4.2.3.10 Conduction of health education

4 (20%) of the study participants stated that health education was conducted during an outbreak. 16(80%) of the study participants stated that health education on the Ebola Virus disease was not been done. The study findings revealed that lack of knowledge amongst health care workers contributed to the failure to equip the community with Ebola Virus Disease information. The community was not well informed on the Ebola Virus Disease. Therefore health education talks needed to be strengthened at all levels of care.

4.2.3.11 Procedures to be followed

3(15%) of the study participants stated that there were standard operating procedures for nursing patients with infectious infections. These procedures were not displayed anyway. 17 (85%) of the study participants did not know the procedures that were to be followed when there was an Ebola Virus Disease outbreak. They therefore needed access to standard operation procedures.

4.2.3.12 Monitoring of Ebola

According to the study findings 17 (85%) of the study participants highlighted that Ebola disease was not being monitored because there was no Ebola in Zimbabwe. Ebola was a disease of the West African Countries. 3(15%) of the study participants reported that Ebola was being monitored when there was an outbreak in West African Countries. Since previous outbreaks which were encountered in Zimbabwe did not give warning to the Ministry of health? This demanded for close monitoring of Ebola Virus Disease.

Therefore the senior nursing staffs needed monitoring and evaluation sensitisation meetings.

4.2.3.13 Solutions provided

8(40%) of the study participants believed that proper use of personal protective clothing could be a way to preparing for the Ebola Disease in Zimbabwe. 7(35%) of the study participants highlighted that workshops and in house trainings could be used to prepare health care workers on Ebola. 2(10%) of the study participants stated that the district hospital could get prepared by establishing a preparedness team which would be made up of different disciplines.

3(15%) of the study participants were not sure of what could be done.

The study finding actually revealed that Health care workers were not well prepared to handle and treat patients with infectious conditions. The study also revealed that no health education talks and in service training were being conducted. Health care workers did not have the same level of information on the Ebola Virus disease. Ebola Virus Disease literature, policy and guidelines were not available.

4.2.4 Challenges faced during data collection

- ❖ During the time of data collection the researcher faced the following challenges:
- Permission to conduct the research study delayed to be offered as a result the researcher delayed to start data collection.
- Delay in the return of questionnaires.
- 5% of the respondents requested for permission to Google information on the internet as they had no idea of the Ebola disease.

4.2.5 Interesting events encountered during the period of conducting the study

The researcher learnt a lot on Ebola Virus Disease. The researcher enjoyed data analysis because it offered a chance to learn what was known by other health care workers. The researcher also met old friends and interesting study participants. The researcher is now able to deal with Ebola cases with a high level of confidence but wants to learn more in order to be an Ebola expert. Given the chance lam ready and prepared to learn more.

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4 .3 Summary

The chapter focused on data presentation, analysis and discussion. The gathered data was grouped and presented in form of pie charts, graphs and tables. Data were analysed using percentages and numbers. The study findings were discussed and implications were provided. During data discussion the researcher highlighted the challenges which were faced during data collection. The interesting events which were encountered during the period of conducting the study were also highlighted. The next chapter will look at the summary, conclusion and recommendations of the study.

CHAPTER 5

Summary, Conclusion and Recommendation

5.0 Introduction

In this chapter the researcher gave the summary of the study. The study was summarised from chapter one to chapter four. Key points from each chapter were highlighted. The study conclusions were drawn based on the ability of the study findings to provide answers to the research questions. Recommendations were made to the Ministry of Health and Child Care, Tsholotsho District Hospital, Local Authority, Community leaders, Future Researchers and School of Nursing.

5.1 Summary

The study was conducted at a District Hospital in Matabeleland North Province and Tsholotsho District Hospital was the study site. The purpose of the study was to investigate out the level of preparedness to Ebola disease in Zimbabwe. The study was aimed at assessing the level of preparedness in terms of knowledge on health care workers and nursing environment in regards to Ebola Virus Disease.

In chapter one the background to the study information was provided. The statement of the problem was clearly spelt out. The study findings helped different ministries to get prepared for the Ebola Virus Disease. The study had assessed the existing level of knowledge of health care workers and hospital environment on Ebola. The study was limited to Tsholotsho District Hospital due to financial and time constraints.

In chapter two the researcher reviewed the related literature on Ebola Virus Disease. There was limited literature with Ebola Virus Disease information. The researcher garnered information from the internet. The information helped the researcher to: define Ebola Virus Disease, give signs and symptoms, give incubation period, and explain how diagnosis of the disease could be made and provide proper treatment. The researcher reviewed the social, economic and psychological impacts of Ebola Virus Disease from the West African countries which had experienced Ebola Virus Disease outbreaks.

In chapter three the study focused on the research methodology. The study focused on a population of 20 Health Care Workers which included Registered General Nurses, Student Nurses, Doctors, Matron, Laboratory Scientist and Environmental Health Technician. The questionnaires were used as the research instrument. The researcher observed the following Ethical principles during data collection: Full disclosure, informed consent, Anonymity, confidentiality, protection from harm and Honest.

In chapter four data was analysed and presented in bar graphs, pie charts and tables. The study findings revealed that there were shortages of medical doctors, environmental health technicians and laboratory scientists in District Hospitals. Also the study findings revealed that not all health care workers had knowledge on Ebola Virus Disease. The incubation period of Ebola Virus Disease was not known by the majority of health care workers. The guidelines, policies and standard operating procedures on Ebola Virus Disease were not available in all departments. Furthermore, the study findings revealed that health education on Ebola Virus Disease was not been conducted by the health care workers. The Ebola Virus Disease was not been monitored by health care workers. The health care workers strongly believed that Ebola Virus Disease was confined to West African Countries.

Lastly, the study recommended that formation of preparedness teams at a District Hospital, conducting training and workshop could help to prepare for Ebola Virus Disease in Zimbabwe.

5.2 Conclusion

The study managed, to a greater extent to accomplish its set objectives. All the research questions were answered. The research was completed within the stipulated time. The assessment of level of knowledge on the health care workers on Ebola Virus Disease was done. The assessment revealed that health care workers had different meanings of Ebola Virus Disease. The study managed to reveal that infection control guidelines, policies and standard operating procedures were available at the district hospital, but there were not specific to Ebola Virus Disease. The health care workers had limited knowledge on the signs and symptoms of Ebola Virus Disease.

The nursing environment was also assessed; the study revealed that there were no designated areas for nursing patients with infectious conditions. This could promote spread of infection.

Apart from this the study findings revealed that there was no literature with Ebola Virus Disease information.

More so, the study was successful because there was no participant who withdrew or was forced to participate. The study participants showed interest in the study since the research topic was unique in the field of nursing.

Apart from the reasons given above the study was an eye opener to health care workers who strongly believed that Ebola Virus Disease was confined to West African Countries.

The study participants were able to provide the possible answers to the research question on how Zimbabwe can get prepared for Ebola Virus Diseases outbreak. The participants recommended the formation of preparedness teams, conducting workshops and in-service trainings.

To lesser extent the study was affected by limited time which was available to the researcher since the researcher had a lot of responsibilities at work, school and home. The researcher wanted to visit one of the West African countries to learn how preparedness plans were made. This field trip was meant to enhance knowledge on preparedness to Ebola Virus Disease on the researcher and copy the best practices.

5.3 Recommendation

The following recommendations were made to the Ministry of Health and Child Care, Tsholotsho District Hospital, Local authority, School of Nursing and Future researchers:

5.3.1 Ministry of Health and Child Care

- All health care levels to develop health education strategies on Ebola Virus Disease.
- Policy makers to develop guidelines and policies which are specific to Ebola disease.
- Learning material on Ebola virus disease to be prepared and disseminated to all levels of health care.
- Ministry of Health and Child Care to collaborate with immigration office to enhance surveillance monitoring of Ebola Virus Disease.
- Budget to train all health care workers on Ebola virus disease to be put in place

5.3.2 Tsholotsho District Hospital

- The District Medical Officer to advocate for training of health care workers on Ebola virus disease.
- Infection control focal nurse to provide drills on use of appropriate protective clothing.

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- ❖ Health Promotion Officer to monitor health education talks given to patients on Ebola virus disease.
- ❖ Community nurse to facilitate community dialogues on Ebola virus disease.
- ❖ Infection control committee to identify areas which can be designated as the areas for screening and admitting patients with Ebola virus disease
- ❖ All health care facilities to have a corner with infection control standard operating procedures.

5.3.3 Community leaders

- ❖ The Ministry of Health and Child Care should empower the community leaders with information on Ebola Virus disease so that information can be shared during meetings and community gatherings.

5.3.4 Local authority

- ❖ Local authority to mobilise resources to set new structures which can be used for screening and treating suspected and confirmed Ebola Virus Disease.

5.3.5 School of nursing

- ❖ School of nursing to set computer laboratory so that students are in touch with new diseases such as Ebola Virus Disease.

5.3.6 Future researcher

- ❖ There are still some areas which need to be investigated on Ebola Virus Disease such as to what extent is Zimbabwe prepared to deal with the impacts of Ebola.

5.4 Summary

The chapter focused on the summary of the study. The summary of the whole study was made from chapter one to four. The researcher drew conclusions of the study. The researcher assessed the extent to which the study answered the research questions. The study recommendations were made to the relevant authorities: ministry of health and child care, District Hospital, researcher, local authority and school of nursing. List of references is given on the next page.

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Appendix 1

MIDLANDS STATE UNIVERSITY

P. BAG 9055
Gweru
Zimbabwe

Telephone: (263) 54 60404/60337/60667/60450
Fax: (263) 54 60233/60311

FACULTY OF EDUCATION
DEPARTMENT OF ADULT EDUCATION

TO WHOM IT MAY CONCERN

The bearer.....is a Masters Degree/ Bachelor Degree / Undergraduate Diploma student In Adult Education. She / he has to undertake research and thereafter present a Research Project in partial fulfilment of the degree programme.

In this regard, the university kindly requests assistance in this student's research endeavours.

Your co-operation and assistance is greatly appreciated.

Thank you

MIDLANDS STATE UNIVERSITY
FACULTY OF EDUCATION
DEPARTMENT OF APPLIED EDUCATION
19 JAN 2017
PRIVATE BAG 9055 GWERU
ZIMBABWE TEL/FAX: 054- 260416/7

Museva L.
(Chairperson –Adult Education)

Appendix 2

Letter requesting permission from investigator

Midlands State University

P O Bag 9055

Gweru

27/12/16

The District Medical Officer

Tsholotsho District Hospital

P O Box 100

Tsholotsho

Dear Madam/Sir

Ref: AN APPLICATION FOR PERMISSION TO CARRY OUT A RESEARCH STUDY AT YOUR INSTITUTION.

I am requesting for permission to conduct a research study on the health care workers. The research topic is as follows: An investigation into level of preparedness to Ebola Virus Disease in Zimbabwe. A case study of Tsholotsho District Hospital.

It is a requirement for the partial fulfilment of the bachelors in adult education degree that I am undertaking at Midlands State University.

I hope my request will be regarded.

Thank you in advance.

Yours faithfully

Chiratidzo Dube

Registration Number: R123970M

Appendix 3

Letter of authority to carry out the study

Tel Nos: 0378 – 216, 204
Fax Nos. 0378 – 207

Telegraphic Address
"TSHOLOTSHOHOSP"

Tsholotsho District Hospital
Box 100
Tsholotsho
Zimbabwe
0378 -203 –

05 April 2017.

CHIRATIDZO DUBE: REG NO: R123970M

Permission is granted to conduct Research with the topic "An investigation into level of Preparedness to Ebola Virus Disease in Zimbabwe, a case study for Tsholotsho District Hospital".

You are encouraged to share with us the findings of your study.

Dr N Sithole

District Medical Officer-Tsholotsho

Appendix 4

Informed consent

An investigation into level of preparedness to Ebola Virus Disease in Zimbabwe. A case study of Tsholotsho District Hospital.

I**nvestigato**r: Chiratidzo Dube

Chiratidzo Dube is a student studying for bachelors of adult education at Midlands State University. It is part of the training requirements to carry out a research study on any topic. The study is about the level of preparedness to Ebola Disease amongst the health care workers and hospital environment. The procedure includes responding to questionnaires. The procedure involves no harm to you and your family

You are under the obligation to participate in the study and have the right to withdraw at any time and your decision will not affect you in any way pertaining to accessing health care service at Tsholotsho District Hospital

The information you give will be treated with strict confidentiality. Please your name will be not written on the questionnaire.

You may contact me on **0772658616**

Subject signature.....Date.....

I have explained this study to the above subject and have sought the informed consent

Investigator signature.....Date.....

Appendix 5

QUESTIONNAIRE FOR HEALTH CARE WORKERS

Questionnaire for a study aimed at assessing the level of preparedness to Ebola disease at Tsholotsho District Hospital.

INTRODUCTION

My name is Chiratidzo Dube a third year student at Midland State University undertaking a degree in Adult Education. The research project is conducted in partial fulfilment of the requirements of adult education degree programme**.** All the information you will provide shall be used for the completion of the project only, so may you answer honestly to the questions asked.

Instruction

The information you give will be treated with strict confidentiality. Please your name will be not written on the questionnaire. Respond to questions asked below by filling in appropriate answers in the spaces provided.

Section A

Personal Data

Designation..... Age.....

Department.....sex.....

Years of experience.....Qualifications.....

Section B

Assessment of health care workers' knowledge on the Ebola disease

1 What is Ebola disease?

.....

.....

2 Do you know the causative organism of Ebola Disease? Yes/No

If yes, what is it?

.....

.....

3 Are you familiar with signs and symptoms of Ebola disease? Yes/ No

If yes, list them below

.....

.....

4 Do you know the mode of transmission of Ebola? Yes / NO

If yes, how is it transmitted?

.....

.....

5 How long is the incubation period of Ebola disease?

.....

.....

6 Are there risk factors for contracting Ebola disease? Yes / No

If yes, state them

.....

.....

7 Can Ebola disease be treated? Yes/ No

If yes, how is it treated?

.....

.....

Section C

Hospital environment assessment

1 Do you have health care workers trained in infection control? Yes / No

If yes, how many

.....

.....

2 Do you have a hospital infection control policy present in all departments? Yes / No

.....

3 Do you have infection control guidelines? Yes/ No

If yes, are they accessible by all health care workers?

.....

4 Are standard operating procedures presents? Yes / NO

If yes, are they displayed?

.....

5 Do you have a designated area for nursing patients with infectious conditions such as Ebola?

.....

6 Do you know the appropriate personal protective clothing recommended for handling Ebola Cases? Yes/ NO

If yes, list them

.....

.....

7 Do you have hand washing points? Yes/ No

If No, where do you wash your hands?

.....

If yes, which disinfectants do you use?

.....

8 Do you know how to handle infectious waste? Yes/ NO

If yes, what precautions do you take to minimise the spread of infection?

.....

.....

9 Do you have literature with Ebola information? Yes/No

If yes, which ones?

.....

10 How often do you conduct health education on Ebola disease?

.....

.....

11 Do you have a displayed procedure to be followed when one encounters a patient with infectious condition? Yes /No

If No, how do you handle infectious cases?

.....

.....

If yes, what does the procedure say?

.....

.....

.....

12 As a hospital are you monitoring for Ebola Disease? Yes/ No

If yes, how?

.....

If No, why?

.....

13 In your own Opinion how can a hospital get prepared for Ebola disease outbreak?

.....

.....

.....

.....

THANK YOU FOR THE TIME YOU HAVE SPENT ON THIS

QUESTIONNAIRE