BINDURA UNIVERSITY OF SCIENCE EDUCATION

DEPARTMENT OF HEALTH SCIENCE

KNOWLEDGE, ATTITUDES, AND BEHAVIOURS OF HEALTHCARE WORKERS TOWARD INFECTION PREVENTION AND CONTROL AT VICTORIA CHITEPO HOSPITAL, MUTARE, ZIMBABWE

BY

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APPROVAL FORM

RESEARCH TITLE: An assessment of knowledge, attitudes and behaviour regarding Infection prevention and control practices among Healthcare workers at Victoria Chitepo Provincial Hospital, Mutare, Zimbabwe.

To be completed by the student

The undersigned certifies that the research project meets the preparation guidelines as presented in the Faculty Guidelines and instructions for research projects.

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To be completed by the supervisor

This research project is suitable for submission to the faculty and was checked for conformity with the Faculty Guidelines.

06/07/25

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(Signature of the supervisor) Date

To be completed by the Chairperson of the Department

I certify that to the best of my knowledge; the required procedures have been followed and the preparation criteria have been met for this research project.

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(Signature of the Chairperson) Date

RELEASE FORM

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DEDICATION

I dedicate this thesis to my kids Sharon and Shelton for the tremendous support throughout the study. Thank you and may God bless you.

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I would like to express my heartfelt gratitude to the Bindura University of Science Education for offering me a place to study this program which is relevant to our day-to-day lives. This project could have not been successful without the support of Mr. Handireketi my supervisor who guided me during this study. I would also acknowledge the Victoria Chitepo Provincial hospital for their support in conducting this study.

ABSTRACT

Globally, Hospital Acquired Infections (HAIs) have become an increasingly challenging issue. The prevention and control of infections is critical as there are recorded morbidity and mortality rates which are alarming. However, no significant data have been recorded on HAIs and infection prevention and control (IPC) at Victoria Chitepo Provincial Hospital, Mutare, Zimbabwe making it also a complex issue in the country's healthcare facilities due to unavailability of significant data recorded. The study assessed knowledge, attitudes and behaviour of Health Care Workers regarding infection prevention and control practices at Victoria Chitepo Provincial Hospital. A mixed methods approach was adopted in this cross-sectional study. The study population was drawn from Victoria Chitepo Hospital staff which included Doctors, Nurses, and Laboratory Technicians as well as support staff comprising of Nurse Aides and General Hands. Purposive sampling was used in selection of the participants. Data collection tools included interview guides and questionnaires with both open ended and closed items. A total of 62 responded to Questionnaires and interviews items. Quantitative data was analysed using the Statistical Package for Social Sciences and presented in tables, graphs and charts. Qualitative data was presented verbatim. The study revealed that being knowledgeable does not necessarily predict good practice as positive attitude and good behaviour contributes to effective IPC practice. While healthcare workers have adequate knowledge and a favourable attitude toward infection prevention, more effort is required in practice. Thus, there is a need to support and improve infection control and prevention practices.

LIST OF ACRONYMS

CLABSIS-Central Line-Associated Bloodstream Infections

HAI- Hospital Acquired Infection

HAP-Hospital-Acquired Pneumonia

HCW - Health Care Worker

ICU-Intensive Care Unit

IPC- Infections Prevention and Control

PPE -Personal Protective Equipment

SSI- Surgical Site Infection

UTI -Urinary Tract Infection

VCPH- Victoria Chitepo Provincial Hospital

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CHAPTER 1: INTRODUCTION

1.1. Introduction and Background to the study

Over 1.4 million people are affected by Hospital Acquired *Infections* (HAIs) worldwide (World Health Organisation, 2022). According to the World Health Organisation (WHO,2022) report, HAIs are most prevalent in low- and middle - income countries with 15% patients being affected as compared to 7% of high - income countries. In Africa, the frequency of HAIs ranges from 3%-15% of all hospitalised patients (WHO, 2022). Infection prevention and control (IPC) remains a critical component of the patient safety and quality of health care delivery. In Zimbabwe, there is limited documented statistics on HAIs. The Ministry of Health and Child Care (2023) reported that, Hospital Acquired Infections in Zimbabwe ranged from 5.7% -19.1% (Bahegwa *et al*, 2022). These HAIs poses a huge burden on healthcare systems resulting in increased morbidity, mortality, increased days of hospital stay and hospital costs. IPC programmes like hand hygiene reduces spread of infections, of which surveillance and outbreak management are vital to reduce the risks. Tirivanhu *et al*, (2023) states that in all developing countries, there is a great challenge is implementing IPC programs at healthcare facilities. These challenges are mainly due to a varied factors including inadequate infrastructure, insufficient training of Health Care Workers (HCW), limited resources and also human factors such as knowledge gaps, negative attitudes and non-adherence to recommended practices. Health care workers are front liners of IPC efforts and their understanding, attitudes and practices play a pivotal role in IPC.

Hospital associated infections (HAIs) refers to the infections which are acquired by patients in hospital that did not exists when they were admitted. These infections present encumbrances by impeding the delivery of effective healthcare services. HAI s mainly contribute to prolonged hospital stays, resistance to treatment, worsening the actual health issues, increased financial costs for patients, strain on healthcare resources and even death (Shacho *et al, 2024*). According to Awwad *et al*, (2023), HAIs are preventable and proper infection control practices by healthcare workers help to reduce the risk. Therefore, it is crucial to regularly follow proper infection prevention and control procedures particularly for healthcare workers to reduce the risk of HAIs.

HealthCare workers' level of knowledge, attitude and behaviour predominantly influence the prevention and control of HAIs (Tirivanhu *et al*, 2023).

The major objective of infection and control (IPC) is to prevent the spread of infection in health care facilities and settings, thereby, assisting health care workers in the provision of quality health care. Globally, nurses play a significant role in health delivery service as well as particularly in Zimbabwe (Tirivanhu *et al*, 2023). Henceforth, nurses are at the forefront of patient care hence they contribute to a certain extend in the spreading of infection (Bahegwa et al, 2022). Health care workers are always exposed to potential hazards, particularly infections from contagious patients but risks can be decreased by strict adherence to infection prevention. It is emphasized however that the successful application of infection prevention and control strategies is dependent on knowledge, attitudes and practices of HCWs (WHO, 2022).

In developing countries, mostly African countries, the magnitude of the HAIs problem is high due to overcrowding and understaffing in hospitals, lack of infection control policies and guidelines leading to inadequate infection control practices. Therefore, infection prevention and control policies, guidelines and procedures are required in the monitoring, surveillance and control of infections in health care facilities and settings.

The most common hospital acquired infections in Africa include urinary tract Infections (UTIs), surgical site infections, hospital acquired pneumonia and health care associated septicaemia (Awwad *et al*, 2023). According to WHO (2022), 5%-10% of patients acquired one or more infection in health facilities, the risk being 2-10times higher in developing countries. An unpublished Infection Control Report survey conducted in 2013 at Bindura Provincial Hospital showed that Intensive care unit recorded the highest nosocomial infections at 27.6%. Thus, Tirivasi et al, (2023) stated that HAIs are most prevalent in intensive care unit (ICU) wards as compared to other wards. Approximately 30% of patients in ICU contract HAIs during treatment in developed countries, while the incidence rate almost doubles in developing countries (Shacho *et al, 2024).*

Internationally, HAIs are on the peak, as the rate ranges from 5.7%-19.2% in low-income whereas it is 7.5% in high income nations (Awwad *et al*, 2023). It is estimated that in Sub Saharan Africa HAIs account for 40% of deaths (Shacho *et al*, 2024). The major reasons of these high rates of HAIs is likely lack of infection control programs which have been neglected due to limited

resources, competing priorities among other barriers. Several studies have shown unpredictable trends in knowledge about infection control based on a group of HCWs and their years of experience (WHO, 2022). Globally, it is critical that effective infection prevention and control strategies are applied in order to achieve optimum response to disease outbreaks and overall patient care and protection of HCWs from occupational risk of contracting diseases.

1.2 Statement of the Problem

The study on knowledge, attitudes, and behaviours of healthcare workers toward infection prevention and control at Victoria Chitepo Hospital, Mutare, Zimbabwe is motivated by the pressing issue of inadequate implementation of infection prevention and control practices in healthcare settings. Despite the global emphasis on the importance of proper infection control measures, evidence suggests that healthcare workers in Zimbabwe, including those at Victoria Chitepo Provincial Hospital in Mutare, may lack sufficient knowledge, exhibit inadequate attitudes, and engage in suboptimal behaviours regarding infection prevention and control (WHO, 2022). The problem is substantial as healthcare-associated infections (HAIs) remain a significant cause of morbidity and mortality worldwide. According to national statistics in Zimbabwe, HAIs contribute to an estimated 10-15% of hospital admissions, leading to increased healthcare costs and negative health outcomes. The source of this problem stems from various factors such as inadequate training, lack of resources, and limited awareness among healthcare workers. Groups of people being affected include patients, healthcare workers, and the community at large. Patients are at risk of acquiring HAIs, leading to prolonged hospital stays, increased treatment costs, and even mortality. Healthcare workers may also suffer from occupational exposure to infections, impacting their health and well-being. Without proper infection prevention and control practices, the problem is likely to persist, resulting in continued transmission of infections, increased healthcare burden, and compromised patient safety. The study aims to bridge the gap in knowledge, attitudes, and behaviours among healthcare workers by assessing their current practices and identifying areas for improvement. By understanding the specific challenges faced by healthcare workers at Victoria Chitepo Hospital, the study seeks to provide targeted interventions and training programs to enhance infection prevention and control practices. Failure to address these issues

could lead to ongoing risks of HAIs, compromised patient care quality, and increased healthcare-associated costs. Ultimately, the study aims to contribute to the overall improvement of infection prevention and control measures in healthcare settings to ensure the safety of patients and healthcare workers

1.3 Justification of the Study

This study was carried out to address the critical issue of inadequate implementation of infection prevention and control practices among healthcare workers at Victoria Chitepo Hospital in Mutare, Zimbabwe. It is important because effective infection prevention and control measures are essential for ensuring patient safety, reducing healthcare-associated infections, and improving overall healthcare quality. The study aimed to assess the current knowledge, attitudes, and behaviours of healthcare workers towards infection prevention and control, identify gaps in practices, and propose targeted interventions to enhance adherence to guidelines.

Patients, healthcare professional and communities are at risk when IPC measures are not well implemented. It is crucial for all Health Care workers to practice IPC to protect their health and decrease the rate of infections as risks to HAIs are existent including infections from infectious patients. Henceforth, IPC is a realistic and evidence-based strategy to improve avoidable infections harming both patients and Health Care Workers.

This study was of paramount importance since there was no published and recorded data about infection rates and control in Zimbabwe. Most of the HAI's morbidity and mortality cases were not clearly recorded. This study was prepared to provide policy-makers and health facility administrators with comprehensive and standardised data to analyse policy gaps on HAIs and recommendations related to infection control measures. Additionally, the study seeks to measure progress and outcomes achieved about addressing multiple factors contributing to health care workers about infection control and prevention of HAIs.

The research aided the communities in Manicaland in the reduction of healthcare associated expenses and the Victoria Chitepo Provincial Hospital will ease burden of longer patients care at the hospital. These aspects provided an understanding and crucial insight into IPC strategies at the institution and pave way to coverage gaps and strategies to development of targeted interventions so as to improve IPC practices which will result in improved patient's outcomes.

This study is vital to the Government of Zimbabwe's Ministry of Health and Child care policy makers to address HAIs challenges being faced in the country.

1.4 Objectives

1.4.1 General Objective

The purpose of this study was to assess the level of knowledge, attitudes and behaviour regarding Infection prevention and control practices among healthcare workers at Victoria Chitepo Provincial Hospital, Mutare, Zimbabwe in 2025.

1.4.2 Specific Objectives

1. To determine the level of knowledge on the Infection prevention and control practices by HealthCare workers at Victoria Chitepo Provincial Hospital.

2. To determine the attitudes of the healthcare workers towards Infection Prevention and control practices at Victoria Chitepo Provincial Hospital.

3. To evaluate the behaviour in infection prevention and control practices among healthcare workers at Victoria Chitepo Provincial Hospital.

1.5 Research Questions

Main research question: To what extent is the level of knowledge, attitudes, and behaviours of healthcare workers valid in promoting infection prevention and control practices at the Victoria Chitepo Provincial Hospital?

Specific Research questions

1. What is the level of knowledge among healthcare workers regarding standard infection prevention and control guidelines at Victoria Chitepo Provincial Hospital?

2. What is the attitude of healthcare workers towards the application of infection prevention and control practices at Victoria Chitepo Provincial Hospital?

3. What are the practices of healthcare workers in preventing and controlling infections at the Victoria Chitepo Provincial Hospital?

1.6 Conceptual Framework

This study was guided by the knowledge, attitudes and behaviour mostly used in public health research. The KAB model suggests that an individual' s behaviour is influenced by the knowledge, that is what they know, attitudes that is action and behaviour which is approach to understanding health care compliance with IPC (Awwad *et al*, 2023). A healthcare worker may have good knowledge, a positive attitude but all this may be influenced by other factors such as lack of resources or too much workload Knowledge - attitude- behaviour (moderated by availability of resources, experience and training.) This model shows that knowledge can shape attitude and when there's positive attitude there's safe IPC behaviours. There is an interrelationship between the KAB models as knowledge informs attitude and attitude influences behaviour (WHO, 2021). It indicates that behaviour requires more than information given. It requires motivation and facilitating environment and reinforcement and reinforcement as stated before. Healthcare workers behaviour is always compromised by environmental challenges, staff burnout and cultural norms at work/ institution.

KAB model is very important in designing an effective IPC intervention. The literature has shown that while knowledge and attitude are very important, they do not predict behaviour. Therefore, a multifaceted approach which includes education motivation and environmental support and liability of the institution is greatly needed so as to improve IPC compliance.

This research therefore, aimed at building on this perspective exploring the specific KAB level of healthcare workers at Victoria Chitepo Provincial Hospital, ultimately guiding the evidence-based improvement in IPC programmes compliance.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

A literature review is a survey of scholarly sources on specific topics. It provides an overview of current knowledge allowing identification of relevant theories, methods and gaps in the existing research (Macomber, 2019). This Chapter provided comprehensive literature on the level of knowledge, attitudes and behaviours of HCWs healthcare on infection prevention control programmes.

2.2.1 Hospital Acquired Infections

Bahegwa et al. (2022) describes hospital-acquired infections as healthcare-associated infections that originate in the environment of a health facility and were not present or developing at the time of patient admission. According to Tirivasi et al. (2023), these infections arise during the course of healthcare in a facility and were not present at the time of patient admission, becoming evident after discharge or developing in facility personnel. Therefore, hospital-acquired infections (HAIs) are also known as nosocomial infections, referring to infections that patients acquire during their hospital or healthcare facility stay. These infections are typically not present or developing at the time of admission and are often caused by bacteria, viruses, fungi, or other pathogens

Globally, HAIs pose a significant burden on healthcare systems and healthcare workers. According to the World Health Organization (WHO), it is estimated that in high-income countries, 7 out of 100 patients acquire at least one HAI while in low and middle-income countries, the prevalence is even higher at 10 out of 100 patients. In Zimbabwe, HAIs also contribute to the strain on the healthcare system and healthcare workers. The Ministry of Health and Child Care in Zimbabwe reports that HAIs are a major concern in healthcare facilities, leading to increased healthcare costs, longer hospital stays, and increased mortality rates among patients. Healthcare workers are particularly at risk of acquiring HAIs due to their close contact with infected patients and contaminated medical equipment. In Zimbabwe, healthcare workers face challenges in adhering to infection prevention and control measures due to limited resources, inadequate training, and

high patient volumes. This puts them at risk of acquiring and transmitting HAIs, further exacerbating the burden on the healthcare system.

Efforts to prevent and control HAIs in Zimbabwe require a comprehensive strategy that addresses the underlying factors contributing to HAIs, including inadequate infrastructure, limited resources, and gaps in infection prevention and control practices. Strengthening surveillance systems, improving access to PPE, and providing ongoing training and support to healthcare workers are essential steps in reducing the burden of HAIs on the healthcare system and protecting the health of both patients and healthcare workers.

Health care-associated infections (HAIs) pose a significant threat to the health population across the globe. There are several factors which contribute to HAIs, for instance contaminated health care equipment, contaminated HCWs' hands, poor waste disposal, poor environmental hygiene practices, lack of proper and adequate infrastructure and staff, overcrowding, lack of knowledge and poor practices regarding basic infection control measures. Borg, (2020) indicated that the main causes of HAIs have been attributed to hospital equipment and contaminated hands of healthcare workers. Notably, when HCWs neglect to wash their hands properly after tending to one patient before interacting with another, pathogens are frequently spread across patients. Additionally, hospital departments also have different rates of HAIs with the highest being found in Intensive Care Units and Maternity wards.

HAI s can cause an infected individual to have a lower quality of life or possibly have a shorter life expectancy in addition to having significant long term financial implications (Alexandria *et al,* 2017). The extent and magnitude of the global burden of HAIs seem to be quite substantial and significantly underestimated. Infection Prevention and control needs to be extremely prioritized in national health programs, particularly in nations with limited resources. To ensure a reduction in health-care associated infections, it is even more critical that healthcare workers adhere to IPC precautions, techniques and strategies. The cornerstones of improving IPC procedures to get past these obstacles are training and education. Health Care Workers need to understand that information is crucial. Nonetheless, it has been consistently demonstrated that even after education and training, unfamiliarity about IPC measures exists.

HAIs are avoidable and yet they often present severe deadly threats to patients, health workers and visitors that occur during the provision of service in any health care settings. Tirivanhu *et al* (2023)

states that HAIs are amongst the most frequent adverse effects of health service delivery in countries across the socio-economic development spectrum. This is because they are usually a consequence of poor-quality care and lack of proper safety programmes. HAIs can also be linked to technologically advanced and invasive treatments.

Worldwide, it is recognised that HAIs are the major contributors of extended admissions, increased medical costs and marked morbidity and mortality. Alhmaid *et al*, (2022) stated that in a study conducted 91000 out of 2.6 million patients who were affected by an HAI lost their lives. Alarmingly, HAIs significantly increase mortality. Tirivangisi, *et al* (2023) postulated that HAIs not only greatly contribute to the risk of premature death but also lead to long term complications, disabilities and suffering resulting in social and psychological repercussions. According to OCED (2022), the burden of HAIs from 2011-2021 accounted for twice the disability and premature mortality.

2.2.2 Infection Prevention and Control

Infection Prevention and Control (IPC) encompasses practices, policies, and procedures aimed at preventing or reducing the transmission of infections in healthcare settings and other environments. The primary objective of IPC is to safeguard patients, healthcare workers, and others from acquiring infections. Key components of IPC include hand hygiene, Personal Protective Equipment (PPE), Standard Precautions, Transmission-based precautions, Environmental cleaning and disinfection, as well as Surveillance and monitoring. According to Alhmaid et al. (2022), IPC plays a crucial role in preventing unnecessary infections in patients and healthcare professionals. The significant benefits of IPC include enhanced patient safety, healthcare worker safety, and quality of care. Substantial evidence indicates that IPC interventions can lead to significant reductions in Healthcare-Associated Infections (HAIs) by 35%-70% (WHO, 2020). Therefore, by implementing effective IPC practices, healthcare providers can decrease the spread of infections and cultivate a safer environment for patients and healthcare workers.

IPC can be implemented in various settings, such as hospitals, clinics, long-term care facilities, and community settings like schools and public health programs. In these settings, IPC practices

are essential to prevent infections and ensure the delivery of quality healthcare. The monitoring, surveillance, and control of infections in healthcare facilities and settings necessitate the implementation of infection prevention and control policies, guidelines, and procedures. The Manual of Infection Prevention and Control policies and guidelines serves as a central reference for healthcare facilities and workers (Allegranzi et al., 2022). These policies and guidelines may evolve in response to new knowledge and technology, but their implementation by healthcare workers is not guaranteed.

In developing countries, notably in Africa, insufficient infection control measures exacerbate the problem of healthcare-associated infections, given factors like overcrowding and understaffing in hospitals. According to WHO (2021), the lack of infection control policies, guidelines, and trained professionals further compounds the issue. The World Health Organization (WHO, 2016) has issued national recommendations on core components for effective infection prevention and control programs, including IPC programs, guidelines, training, education, surveillance, multimodal strategies, and monitoring and evaluation. Shacho et al. (2024) highlight the relevance of these core components at the facility level, along with factors like workload, staffing, bed occupancy, the built environment, materials, and equipment. Hand hygiene has been emphasized as a highly effective measure for reducing infection transmission in healthcare settings, whether as a standalone intervention or part of multifaceted efforts.

The 2021-2022 WHO global survey revealed that 54.7% of countries had active IPC programs, with many Sub-Saharan African nations falling short of minimum requirements for national IPC programs like Zimbabwe. The scarcity of national IPC policies, personnel, and poor adherence to existing HAI guidelines contribute to persistent high rates of HAIs. Strengthening investments in IPC interventions can yield significant reductions in HAI rates, regardless of a country's income level (Asfaw, 2022). OECD analysis (2023) suggests that improving hand hygiene and environmental hygiene practices would prevent thousands of deaths annually. Therefore, enhancing hand hygiene and environmental hygiene are crucial components of comprehensive strategies to reduce the burden of HAIs.

IPC programs at national, district, and facility levels are vital for overseeing the implementation of IPC measures and allocating necessary resources and support like hand hygiene supplies and

PPE. The overarching goal of the IPC program in Zimbabwe, according to Shacho et al. (2024), is to reduce the burden of HAIs by enhancing IPC practices in all healthcare facilities to prevent infectious disease transmission. This goal can be achieved by ensuring the availability of IPC policies and guidelines, management structures, and necessary resources and supplies in all healthcare facilities. Tirivangisi et al. (2023) support this perspective by stating that these IPC interventions will elevate the quality of healthcare workers, create safer work environments, and align with the goals of the MoHCC National Health Strategic Plan 2020-2030.

2.2.3 Health Care Workers

Healthcare workers (HCWs) are individuals who provide healthcare services, support, or care to patients, clients, or communities. They play a vital role in promoting health, preventing disease, and delivering medical care. Examples of healthcare workers include Doctors, Nurses, Allied health professionals and support staff. The major roles and responsibilities of HCW include patient care, health promotion, disease prevention as well as administration. HCWs play a critical role in improving patient outcomes and quality of life and are essential to the functioning of healthcare systems, providing essential services. More so, HCWs contribute to promoting community health and well-being.

2.5 Barriers to IPC implementation

Fifteen percent of countries reported that they have an IPC programme in place that is properly implemented in health care facilities at national level, globally (Bahegwa *et al*, 2022). However, it is reported that these IPC programmes are being implemented in selected healthcare facilities. This can be attributed to the nexus between the level of socioeconomic development and the implementation of IPC at the national and facility levels. According to Alhmaid *et al*, (2022), developed countries were eight times more likely to have a more advanced IPC implementation status compared with developing countries. This is mainly due to the fact that there is a limited budget allocation dedicated to IPC due to other overwhelming demands. Henceforth, the

developing countries mostly have IPC core components in place with a basic level of IPC implementation which is not sufficient.

Significant discrepancies were observed across income levels with high income countries and hospital facilities generally reporting better implementation as compared to low income countries and health care facilities. Gaps remain in budget allocation, training, HAI surveillance and monitoring especially in low-income countries. Developed countries are more advanced in the implementation of all IPC components whilst in developing countries despite where IPC programmes exist, they are often not able to fully function correctly and sustainably.

According to Tirivangisi *et al,* (2023) worldwide the relevant gaps on IPC implementation were limited availability of a budget specifically dedicated to IPC, limited support at the national level for IPC training and monitoring of its effectiveness and lack of expertise to conduct IPC monitoring.

However, particularly in Sub-Saharan Africa, most of the facilities lacked full time IPC professionals, an allocated budget, routine microbiological laboratory support and appropriate workload, staffing and bed occupancy (Melariri and Robert 2024). The ongoing disparity in IPC programme is evident regarding human and financial resources dedicated to IPC.

The discussed barriers to IPC implementation globally, highlight the disparities between developed and developing countries in terms of IPC implementation. It emphasizes the limited budget allocation, training, surveillance, and monitoring of healthcare-associated infections in low-income countries, leading to insufficient IPC core components in place. This aligns with the research objective of assessing the level of knowledge, attitudes, and behavior among healthcare workers in a specific hospital in Zimbabwe, shedding light on the challenges faced in implementing effective IPC practices in developing countries.

2.6 Level of Knowledge Amongst Health Care Workers on Infection Prevention and Control Practices

The level of knowledge, attitudes, and behaviours of healthcare workers regarding infection prevention and control practices plays a crucial role in the successful implementation of such

practices (Allegranzi et al, 2022). Globally, evidence suggests that lack of knowledge and poor attitudes among healthcare professionals are significant contributors to non-compliance with infection prevention and control protocols (WHO, 2021).

Knowledge of infection prevention and control (IPC) among healthcare workers is vital for the correct implementation of measures. All healthcare workers should be familiar with standard precautions, including hand hygiene, personal protective equipment (PPE), respiratory hygiene, safe injection practices, modes of transmission, and disinfection protocols (Asadollahi et al, 2020). Awareness of IPC practices was well observed among healthcare workers in Iran, particularly in sterilization techniques and patient isolation (Awwad et al, 2023). Studies in Zambia by Chitimwango (2018) revealed that nurses and other healthcare workers had average knowledge levels, often influenced by the amount of formal IPC training received.

2.7 Attitude of Health Care Workers on Infection Prevention and Control Practices

Attitudes towards infection prevention and control programs are influenced by the knowledge healthcare workers possess, reflecting the value and priority given to IPC practices. Positive attitudes are linked to higher compliance and willingness to engage in IPC measures (Chitimwango, 2018). However, limited resources in low-resource settings can discourage healthcare workers, despite their strong knowledge of IPC practices, leading to neglect of good practices (Allegranzi et al, 2022).

2.8 Behaviour of health care workers on Infection Prevention and Control practices

Behavioural aspects of healthcare workers in infection prevention and control encompass actions such as hand hygiene, use of gloves, safe injection practices, and sharps disposal. Discrepancies between knowledge/attitudes and actual practices among healthcare workers are commonly observed in IPC research, highlighting the importance of addressing these gaps to reduce risks of hospital-acquired infections (Nair et al, 2019). Providing resources, enforcing IPC measures, and enhancing supervision and feedback can improve behavior and accountability among staff, ultimately leading to better infection control practices (Wong et al, 2019).

Understanding the knowledge, attitudes, and behaviours of healthcare workers is crucial for effective infection prevention and control, as compliance with IPC measures is influenced by these factors. Evaluating knowledge, attitudes, and behaviours among healthcare workers is essential to identify causes of non-compliance and implement strategies to enhance infection control practices and prevent hospital-acquired infections (Kelma, 2019

CHAPTER 3: METHODOLOGY

3.1 Introduction

In this chapter the researcher presents the research methodology which was used in this study as it acts as the nerve centre for the study because the entire research is bounded by it and to perform a good research work, the internal and external environment must follow the right research methodology process (Goundar, 2012). This section shall therefore explore the target population, sample size, sampling method and the research instruments used to collect the data, including data collection procedures implemented to maintain validity and reliability of the instrument. Data analysis strategy and presentation methods have been discussed showing how answers to the questions have been generated. Ethical considerations and issues of dependability, transferability, credibility and conformability of data have been explored.

3.2 Research Design

A research design it is the blue print for conducting the study that maximizes control over factors that could interfere with validity of the findings, (Creswell and Creswell 2018, Dunn 2023). Designing a study helps the researcher to plan and implement the study in a way that helps the researcher to obtain intended results, thus increasing the chances of obtaining information that could be associated with the real situation, (Yin 2018). The researcher adopted a descriptive case study design through which the researcher focused on providing a detailed description of a small number of cases. The researcher chose this design to facilitate effective exploration of level

of knowledge, attitudes and behaviour regarding Infection prevention and control practices among Healthcare Workers at Victoria Chitepo Provincial Hospital.

3.2.3 Mixed Method Research Design

In this study the researcher adopted a mixed research design. The researcher adopted this methodology to take advantage of combining the strengths of both qualitative and quantitative approaches which make up the approach. The approach provided a more comprehensive understanding of the research problem (Creswell, 2018, p. 10), filling the knowledge gap on level of knowledge, attitudes and behaviour regarding Infection prevention and control practices among healthcare workers. . The approach involved the collection and analysis of both numerical data and textual data, which allowed the researcher to explore and confirm findings, and to develop a more nuanced understanding of the research context (Plano Clark, 2018, p. 15). By integrating the strengths of both paradigms, the researcher felt that the mixed research could provide a richer and more detailed understanding of the research problem at hand. Based on the study's purpose and objectives, the researcher found that the paradigm in the ***sequential exploratory perspective*** suited best. This was because the study aimed to explore the level of knowledge, attitudes and behaviour regarding Infection prevention and control practices among Healthcare Workers at Victoria Chitepo Provincial Hospital, Mutare, Zimbabwe in 2025. A mixed-methods approach allowed for an initial exploration of the topic through qualitative data collection and analysis, followed by quantitative data collection and analysis to validate and generalize the findings. The paradigm allowed carrying out the study in the ***interpretivist perspective*** with a focus on understanding the meaning and interpretation of level of knowledge, attitudes and behaviour regarding Infection prevention and control practices among Healthcare workers at Victoria Chitepo Provincial Hospital, Mutare, Zimbabwe in 2025. The researcher used this paradigm to gain a deeper understanding of the context and experiences of the participants using ethnography and content analysis.

The design paradigm suited best as the study involved collecting data from multiple sources, which included all Healthcare workers at the institution. A mixed-methods approach enabled the integration of these diverse data sources to provide a comprehensive understanding of the research topic. This was seen to be the best approach since the study aimed at assessing Knowledge,

Attitudes, And Behaviours of Healthcare Workers Toward Infection Prevention and Control at Victoria Chitepo Hospital. The approach allowed for the use of both qualitative and quantitative methods to evaluate and assess knowledge, attitudes, and behaviours of healthcare workers toward infection prevention and control at Victoria Chitepo Hospital. The researcher felt that the approach would provide best recommendations for enhancing Knowledge, Attitudes, And Behaviours of Healthcare Workers Toward Infection Prevention and Control at the institution. The researcher adopted the approach to enable effective identification of areas for improvement and the development of practical suggestions for enhancing leadership practices.

According to Brown (2021) and Creswell & Creswell (2018) qualitative approaches often lays more emphasis on words rather numbers and is also more likely to be of inductive and interpretive nature. The authors argue that qualitative approaches are preferable when the study concerns human activities and behavioural patterns and also when small research is conducted.

The researcher adopted quantitative techniques which involved mainly collection of numerical data using questionnaire and descriptive analysis of numerical data using descriptive statistics which included the measures of central tendency and percentiles, (Mutemererwa 2018). The quantitative techniques were used to analyse demographic data and number of respondents agreeing or disagreeing on some aspects of knowledge, attitudes, and behaviours of healthcare workers toward infection prevention and control.

3.3 Study Population

A study population is a well-defined collection of individuals/ subjects with common, binding characteristics (Creswell, 2014). According to Silverman, (2009) the word population means all subjects or objects that have a common attribute or characteristic that is being studied. To this end, the study population was made up of all those involved in patient care at Victoria Chitepo Provincial Hospital who included Doctors, Nurses, Laboratory personnel and support staff such as Nurse Aides and General Hands.

3.4. Sampling Procedure and Sampling Size

According to Creswell & Creswell, (2018) and Sharma, et al (2023) *a* sample is simply a subset which represent the population from which it was drawn and have a good size to warrant statistical analysis. The sample enabled the researcher to make meaningful generalizations of information from the respondents. To come up with a representative and manageable study sample there is a need to employ relevant sampling methods. According to Ranjit (2011), sampling is the process of selecting a few objects from a bigger group to become the basis for estimating or predicting the prevalence of an unknown phenomenon regarding a bigger group.

Sampling involves the selection of a representative subset of individuals or cases from a larger population, using a systematic and unbiased approach, to ensure that the sample accurately reflects the characteristics of the population (Etikan et al., 2019; Teddlie & Yu, 2020). This process requires careful consideration of the sampling design and sampling method to minimize bias and ensure the generalisability of the findings.

In this study the researcher used purposive sampling technique which is a non-probability sampling technique. Purposive sampling technique is where participants are selected based on their relevance to the study, expertise, or experience (Creswell & Poth, 2018, p. 154). According to Palinkas et al (2015), purposive sampling involves selecting participants who are "information-rich" and can provide in-depth insights into the research phenomenon. This technique used because of the fact that the study had a qualitative research component where the goal was to gain a deeper understanding of a particular issue or phenomenon (Sandelowski, 2018, p.115). In purposive sampling, the researcher used own judgment to select participants who were most likely to provide relevant and valuable data (Creswell & Poth, 2018, p. 155). This technique was used in this study because the researcher wanted to explore a specific issue or phenomenon in-depth (Palinkas et al., 2015).

The researcher chose purposive sampling because the research was of exploratory in nature with the aim of soliciting information on their experiences and perceptions, (Creswell & Creswell 2018). The sampling techniques provided the researcher with the intricacies of the sample in which she is interested to study, despite the challenges of bias and transferability (or validity) procedures used in non-probability sampling to select units for inclusion in a sample was much easier, quicker

and cheaper when compared with probability sampling, (Brown, (2021). The researcher used the technique to sample doctors, nurses, laboratory personnel and support staff such as nurse aides and general hands... The researcher focused on the experience of the participants, which determined the ability of the respondents to answer the research question. In order to come up with the 46-participant sample using the purposive technique the researcher was guided by the stated research objectives which helped define criteria for selecting participants.the researcher selected doctors, nurses, laboratory personnel and support staff such as nurse aides and general hands into the sample. The researcher had a cross-section of HCWs basing on working experience and professional qualifications. On experience the researcher selected HCWs falling in the following working experience of above 5 years.

3.5 Research Instruments

A data collection instrument refers to a tool or device used to gather, record, and measure data from participants or sources in a research study, (Collins, 2021, Goundar, 2020; Myers, 2021). According to Collins, (2021) a data collection instrument is "a device or tool used to collect data, which can be in the form of a questionnaire, interview schedule, observation checklist, or any other device that helps to collect data". This means that a data collection instrument can be described as a tool or device used to systematically collect, record, and measure data from participants or sources in a research study, which can take various forms such as questionnaires, interview schedules, observation checklists, or other devices. In research studies, data collection instruments play a crucial role in ensuring the accuracy, reliability, and validity of the data collected, (Goundar, 2020). According to Myers (2021) the choice of data collection instrument depends on the research question, study design, and population being studied. In the context of this study the researcher used two research instruments which included questionnaires, interview guide to collect qualitative data.

3.5.1. Interview Guide

An interview guide is a list of questions or topics that an interviewer uses to guide a conversation with a participant during an interview. According to Creswell and Poth (2018), an interview guide is a "list of questions or topics that the researcher wants to explore during the interview" (p. 164). Similarly, Patton (2015) defines an interview guide as a "set of questions or topics that the interviewer wants to cover during the conversation" (p. 439). Rubin and Rubin (2012) also describe an interview guide as a "list of topics or questions that guide the conversation" (p. 129). The purpose of an interview guide is to ensure that the interviewer covers all the necessary topics and questions, while also allowing for flexibility and spontaneity in the conversation. An effective interview guide should be flexible enough to allow the interviewer to probe and follow up on interesting responses, while also ensuring that all the necessary information is collected.

The use of the Interviews guide allowed for in-depth, detailed information to be collected from participants. It provided an opportunity to gather personal perspectives and experiences from participants. The guide facilitated collection of data in a flexible manner, allowing for follow-up questions and probing. which resulted in generating rich, qualitative data that was used to develop themes and patterns.

However, the use of interview guide was quite time-consuming since multiple participants were involved. The quality of the data collected depended on the participant's willingness to share information and their level of knowledge in this regard the researcher had to spend a lot of time in establishing rapport with majority of the research participants. The use of the iinterview guide gave the researcher a big task of fighting a number of factors which influenced biases, such as social desirability bias as well as interviewer bias. The researcher had to take time and a lot of effort on transcription, which was quite time-consuming and prone to errors.

3.5.3 Questionnaire

According to Creswell and Creswell (2018) a questionnaire is a way of stimulating people’s beliefs, attitudes, experiences through a set of questions asked on paper. Sharma et al (2023) support the same notion above as he states that a questionnaire is a set of well-established

questions asked in a chronological order to attain information on the participant's behaviour. It includes closed ended questions confined the respondents to giving specific information required by the researcher, while open ended questions allowed the respondents to freely explain their views. The researcher conducted a pilot study with the aim of perfecting the instruments through making each item easily comprehensible by the participants. A questionnaire can be used to evaluate a variety of organizational and social system processes through individual-level perceptions (Sayeed, 2015). It is a research instrument consisting of a set of standardized questions to gather statistically useful information from respondents. The gathering of statistically useful information from respondents calls for in-depth understanding of mental and behavioural level processes. For this study, the researcher administered the questionnaires to the Healthcare staff. The questionnaire comprised mainly of closed-ended questions and a few open-ended questions. The purpose of using the questionnaire was to gather large size of information in a short period of time. The advantages of using a questionnaire include low cost, practical, respondent anonymity, standardised and higher level of objectivity (Dudovskiy, 2018). While the questionnaire, had strengths there were disadvantages which include dishonest answers, unconscientious responses and no possibility for respondents to express their additional thoughts about the matter due to the absence of a relevant question (Bhandari, 2021).

3.6.0. Data Collection Procedures

Data was collected using interviews and questionnaires which are utilised to get data from sampled healthcare staff at Victoria Chitepo Provincial Hospital. Data collection procedures is the specific system of gathering of relevant info to the research. Permission was granted from the Medical Superintendent to collect data from the institution and participants were asked to sign concerns forms. Data collection for this study was conducted using the semi-structured interviews and questionnaires. The researcher started by giving the opportunity for all research participants to read the consent form before the interview s or completion of the questionnaire. The researcher will explain to the respondents the purpose of the study and ask for their co-operation. The researcher then self-administered the semi-structured questionnaire to 46 research participants, which she collected after a period of 5 working days. the researcher also conducted face to face

interviewed with 6 key staff for Key Informants Using the interview protocol, the researcher will interview key informants from the researcher will record the interview on her smart phone.

.3.7.0. Ethical Considerations

The study observed ethical principles which direct and/or guide research processes. According to Matos *et al,* (2023), studies were guided by some standards in order to protect the rights of the participants in the study, safeguard against immoral research activities and conduct a proper scientific investigation. Some of the ethics in which this research was grounded on included voluntary participation, anonymity, confidentiality, honesty and continuity.

The researcher paid courtesy calls to all Victoria Chitepo Provincial Hospital leaderships to seek permission and ensure that everyone was aware of the intended activities as part of the ongoing research. The principle of voluntary participation was explained to the research participants before commencement of the interviews and after the completion of the questionnaires and with that consent, participants were informed of their right to withdraw from the study at any time. Respondents were assured that their names would be dealt with in the strictest confidence. Anonymity was guaranteed as names of the respondents was not required in collection of data. Creswell, (2014) defines anonymity as whereby a respondent may be considered anonymous when the researcher cannot identify a given response with a given response with a given respondent. This aspect included the principle of trust in which assurance to participants that their trust would not be exploited for personal gain. A deliberate decision was taken not to offer any monetary compensation to study participants as this would work against other future researchers and evaluators, (Creswell and Poth 2018).

Chapter 4: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

Inn this chapter the researcher presented an analysis of data, both quantitative and qualitative. The findings have been presented descriptive statistic in which the researcher used graphs, charts, and tables. On qualitative data the researcher used direct quotations and narratives, and discussed the findings in relation to the study objectives. The presentation provided findings obtained from the study on an assessment of the level of knowledge, attitudes and behaviour of Healthcare Workers at Victoria Chitepo Provincial Hospital towards IPC practices. As mentioned in chapter three, this research utilized a mixed research approach firstly, analysing the thematic frames obtained from questionnaire data.

4.2 Socio-demographic characteristics of respondents

Forty-six participants were selected using the purposive and simple random sampling methods.

Information in Table 4.1 below shows analysed demographic information of the research sample.

Table 4:1 shows the participant demographic status n = 46

Socio-Demographic Characteristic		Frequency	Percentage
Sex	Male	15	33
	Female	31	67
	Total	**46**	**100**
Age	Below 35 years	15	32.6
	35-50 years	20	43.5
	Above 50 years	11	23.9
	Total	**46**	**100**
Department/ Ward	Surgical	6	13
	Maternity	10	21.7
	ICU	4	8.7
	Children	7	15.2
	OPD	16	34.8
	Medical	3	6.5
	Total	**46**	**100**

Designation	Doctor	6	12
	Nurse	21	42.9
	Laboratory staff	4	8
	General staff	15	36.1
	Total	**46**	**100**
Number of years in service	Less than 3 years	8	17.4
	3-10 years	12	26.1
	More than 10 years	26	56.5
	Total	**46**	**100**

Out of 46 participants 67.4% (31) were female. The dominant participants accounting for 43.5% (15) are aged 35-50years, followed by below 35 years at 32.6% (15) and 23.9% (11) were above 50years.The nurses accounted for 42.9% (20) of the respondents, Doctors 12 %, (6) Laboratory staff 8% (4) and 36.1% (17) for General staff. The Out-Patients Department (OPD) have the highest number of participants at 34.8% (16) followed by Maternity ward with 21.7% (10) Children's ward had 15.2% (7), Surgical ward was the second least with 13% (6) and the least was the Intensive Care Unit with 8.7% (4). The majority of the respondents 56.5 % (26) have more than 10 years of service, followed by 26.1% (12) having 3-10 years of service and the least 17.4% (8) having less than 3 years in service. Out of these research participants there those who received IPC training. Figure 1 shows the last IPC training attended.

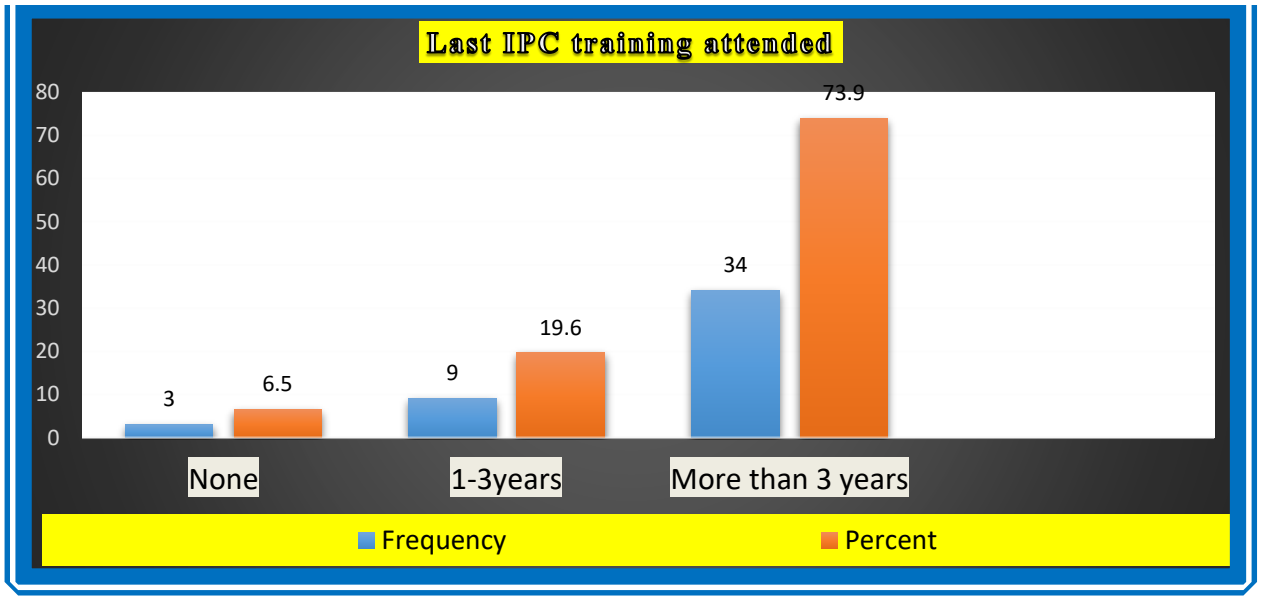

Figure 1. Respondents' last IPC training attended

The research results indicated that 73.9% (34) of participants received their last IPC training more than 3 years ago, followed by 19.6% (9) receiving their IPC training in the last 1-3years ago and 6.5% (3) indicated that they did not receive IPC training. None of the respondents indicated that they received IPC trainings in the last year or less than a year. The interviews with the senior management confirmed that the IPC trainings were intensified during the Covid-19 period.

4.3 Level of Knowledge Amongst HCWs On IPC Practices

In an interview with the Key Interview Informant respondent number 3, in her own words stated that "regular IPC trainings were conducted during the Covid-19 period, probably due to the fact that it was a pandemic". The WHO Director General, (2020) stated that the Covid-19 pandemic exposed many challenges and gaps in IPC in all regions and countries, thereby intensifying IPC programmes across the health system. Tirivangisi *et al*, (2023) stated that indeed little improvement was realised from 2018 to 2021 in the implementation of IPC national programmes, although increased attention was paid due to the Covid-19 pandemic. Thus, the frequency of IPC training indicates a gap in the implementation of IPC practices at the Hospital. Alhumaid *et al*, (2022) stated that national programs or campaigns on IPC greatly promote and ensure effective implementation of strategies and guidelines leading to a positive effect on HCWs' level of knowledge and improved compliance. Thus, the researcher noted that there is a positive correlation between good knowledge and compliance behaviour amongst HWCs.

4.3.2 Effectiveness of Hand Washing in Preventing HAIs.

Fig 2 shows effectiveness of hand washing in preventing HAIs. Eight-seven percent 87% (40) of the respondents answered that hand washing is truly an effective IPC tool in managing HAIs whilst 13% (6) did not answer correctly however this reflected that the participants had high levels of knowledge. A hundred percentage was recorded correctly by HCWs on the questions that Alcohol based hand rubs should be used even with visibly soiled hands, the application procedure of the standard precautions as well as the correct duration of hand washing. This shows that the HCWs high level of knowledge on the IPC standards. These results were also similar to Shacho *et al*, (2024)'s results which also stated that HCWs are knowledgeable on the IPC. However, the researcher observed that most of the HCWs theoretically answered this correct but do not really

practice for instance hand washing duration and do not always apply standard precaution except in extreme situations

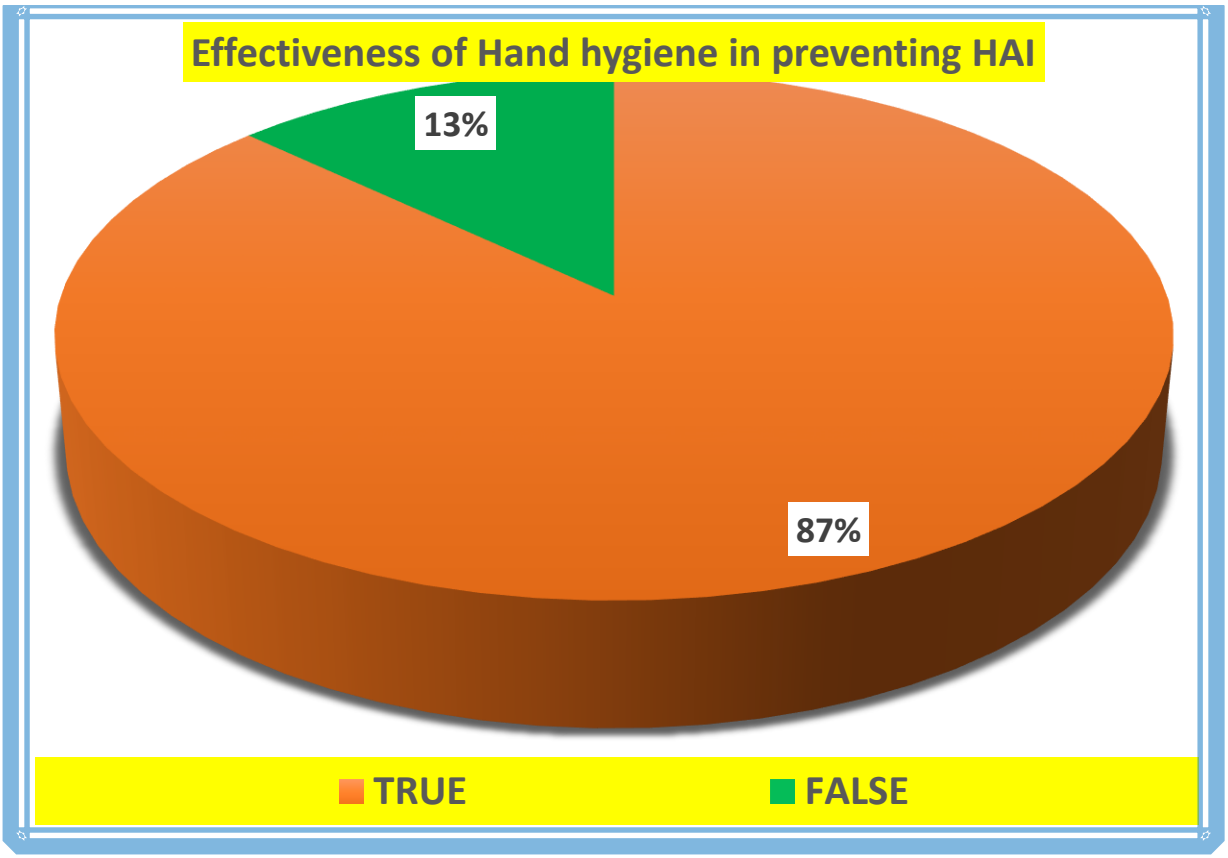

Figure 2 Effectiveness of hand hygiene in preventing HAIs

. These observations were proved to be true as interviews by patients confirmed that some of the nurses did not prioritise hand washing before attending to them but mostly after, and in most cases did not apply standard precautions on all patients regardless of diagnosis. WHO (2019) recommends that simple and affordable preventive measures such as hand hygiene should be adapted in the healthcare settings of resource constrained countries. Henceforth, hand hygiene is the initial step towards successful IPC and remains the basic and most effective measure to prevent HAIs. These results were similar to Bahegwa *et al*, (2022) who observed that the prevalent type of PPE which were mostly used by HCWs included only gloves and masks.

4.3.3 Proper Disposal of Sharp Objects.

Figure 3 below shows proper disposal of sharp objects.

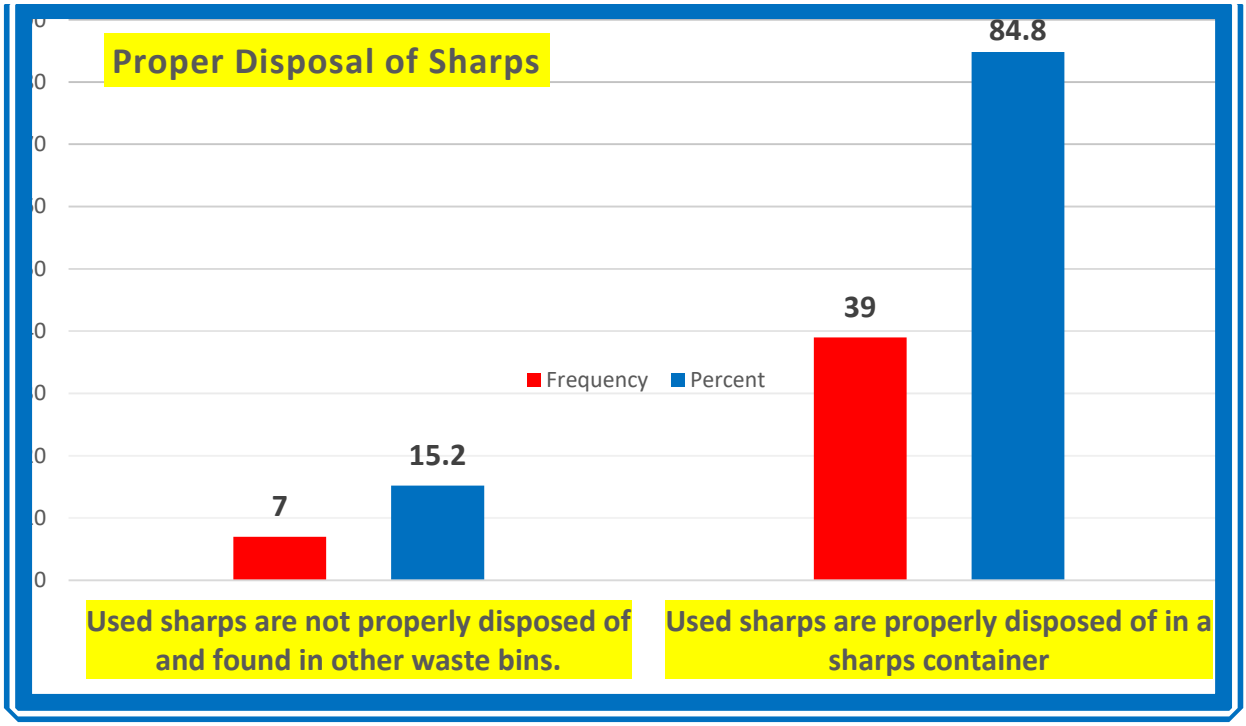

Figure 3. Proper disposal of sharps

The respondents, 85% (39) indicated that they knew how sharps were supposed to be disposed into sharps containers whilst 15% (7) answered that are not properly disposed of, as they are found in other waste bins and lying on the floor. The patients who were interviewed confirmed that most of the Nurses properly dispose sharp objects after use. These results conform to Alhmaid *et al*, (2022)'s results which shows that the HCWs are knowledgeable on sharp container's disposal. The researcher observed that the Hospital has an incinerator in which all sharp objects are disposed of. These studies however, contradict with Tirivangisi, *et al* (2023)'s results which stated that waste was not separated at hospital in his study. Additionally, Gezie (2020) found out that 56% of HCWs poorly segregate waste. Thus, knowledge on proper disposal of sharp objects is crucial in IPC practices.

4.3.4 Respiratory Hygiene and Cough Etiquette.

All the respondents responded that the respiratory hygiene and cough etiquette were observes, which included covering nose and mouth when sneezing or coughing. This showed that the HCWs were knowledgeable. However, there seemed to be a gap in the implementation as it was noted when the researcher observed that not all HCWs adhered to the requirement.

4.4.1. Attitude Amongst HCWS Towards IPC Practices

The participants indicated that the notion that "All IPC practices are very important to protect patients and health care workers" is true. The researcher realised that this question was correctly answered but highly opposed and not true in the practice. This led to the researcher' concluding that most of the HCWs selectively adhered and implemented IPC measures rather than practising comprehensive safe standards precautions. For instance, when performing procedures that gave greater exposure to blood or body fluids and or dealing with sharps there was high compliance. This agreed with finding by Asfaw (2022) who found out that 61% of the HCWs were not fully following IPC practices.

4.4.2 Level of Confidence to Practice IPC.

Figure 4 below shows HCWs' level of confidence to practice IPC.

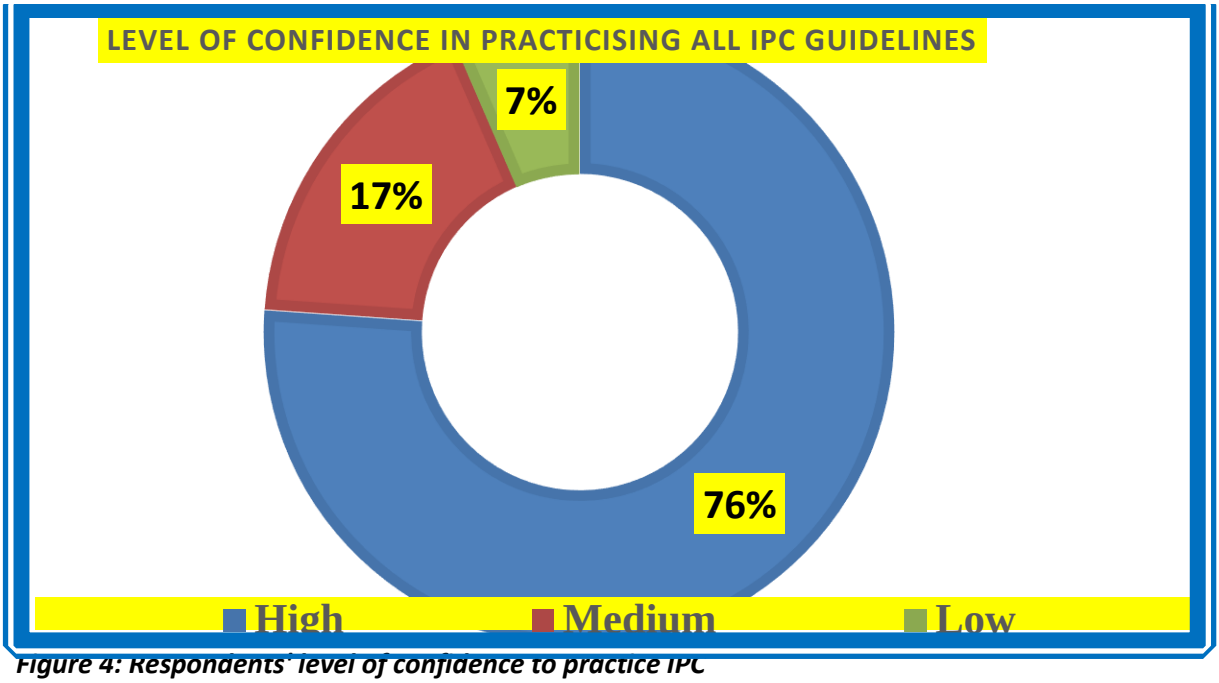

Figure 4: Respondents' level of confidence to practice IPC

In responding to their level of confidence in practising all IPC and following all guidelines and protocols, 76.1% (35) of the respondents indicated high of confidence, 17.4% (8) indicated that they had medium confidence, however, 6.5% (3) indicated that they had low confidence levels. This might have been attributed to different designations as well as availability of resources and varying level of knowledge amongst the HCWs at Victoria Chitepo Hospital. This agreed with Gezie, (2020) in studies which revealed that not all HCWs were confidence enough to practice all of the IPC procedures, thereby corresponding to this study results. These results were also confirmed by WHO (2020) which reported that there was inadequate implementation of all IPC practices, agreeing with 15.2% (7) of the respondents who indicated that the healthcare facilities in the institution met IPC minimum requirements.

4.4.3 Workplace Environment in Providing Support for IPC Practices.

Figure 5 below shows rating the levels of workplace environment in providing adequate support for IPC practices.

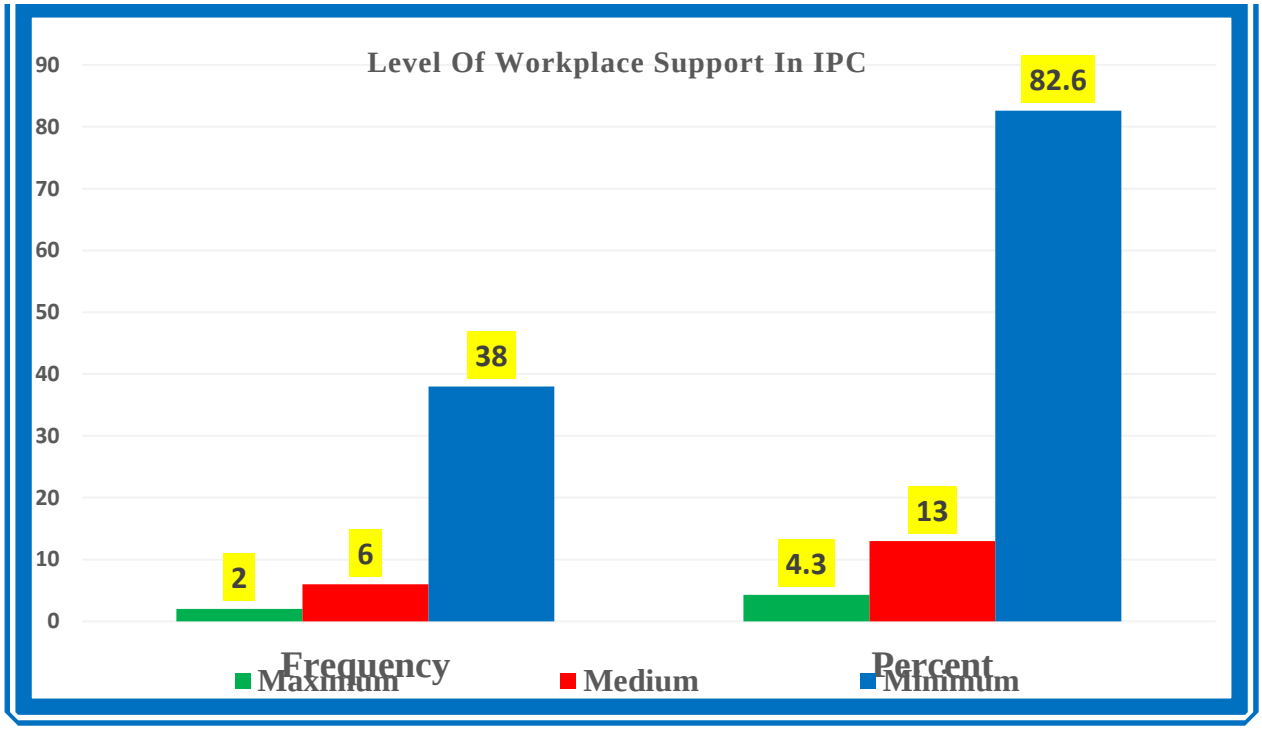

Figure 5: Rating levels of workplace support in IPC

In generating answers to the research question which said: “how do you rate the level of workplace environment in providing adequate support for IPC practices”, 4.3% (2) indicated that they received maximum support, 13.1% (6) indicated that they received medium support. However, 82.6% (38) indicated that they received minimum support. These results were confirmed by the management as they cited that there was no active IPC board at the hospital to facilitate effective and efficient support due to lack of expertise. Another challenge was of inadequate financial constraints due to limiting budgetary allocation to the IPC department.

4.4.4 HCWs’ Attitude Towards IPC In Time Management

Figure 6 below shows HCWs’ attitude towards IPC in time management.

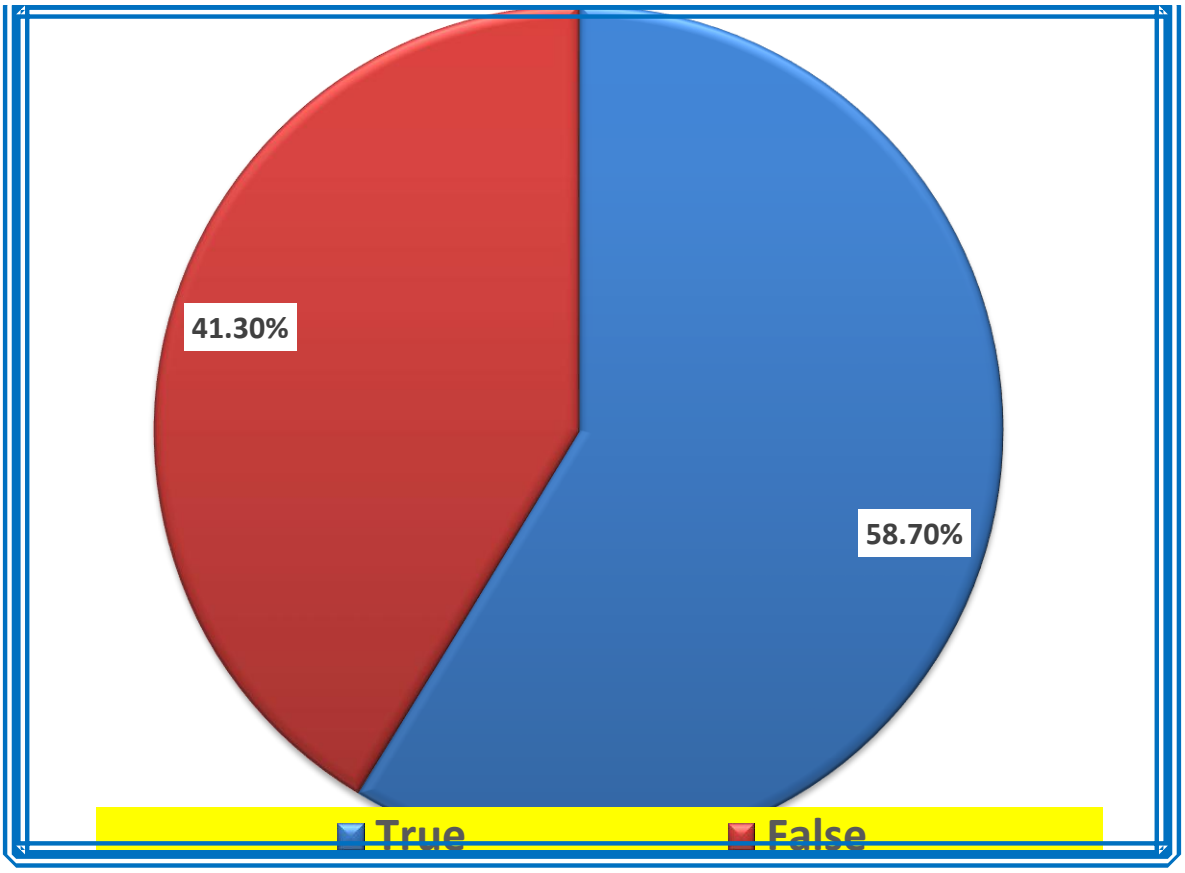

Figure 6: Respondents adherence to IPC practices

In response to the notion that adhering to IPC guidelines and practices always slowed down HCW’s work, 59% (27) of the respondents indicated they agreed as they indicated that it was true whilst 41% (19) indicated that it was not. This showed that most of HCWs had a negative attitude towards IPCs.

4.4.5 Level of Motivation to Follow IPC Guidelines

Figure 7 below shows the levels of motivation the research participants had on following IPC guidelines

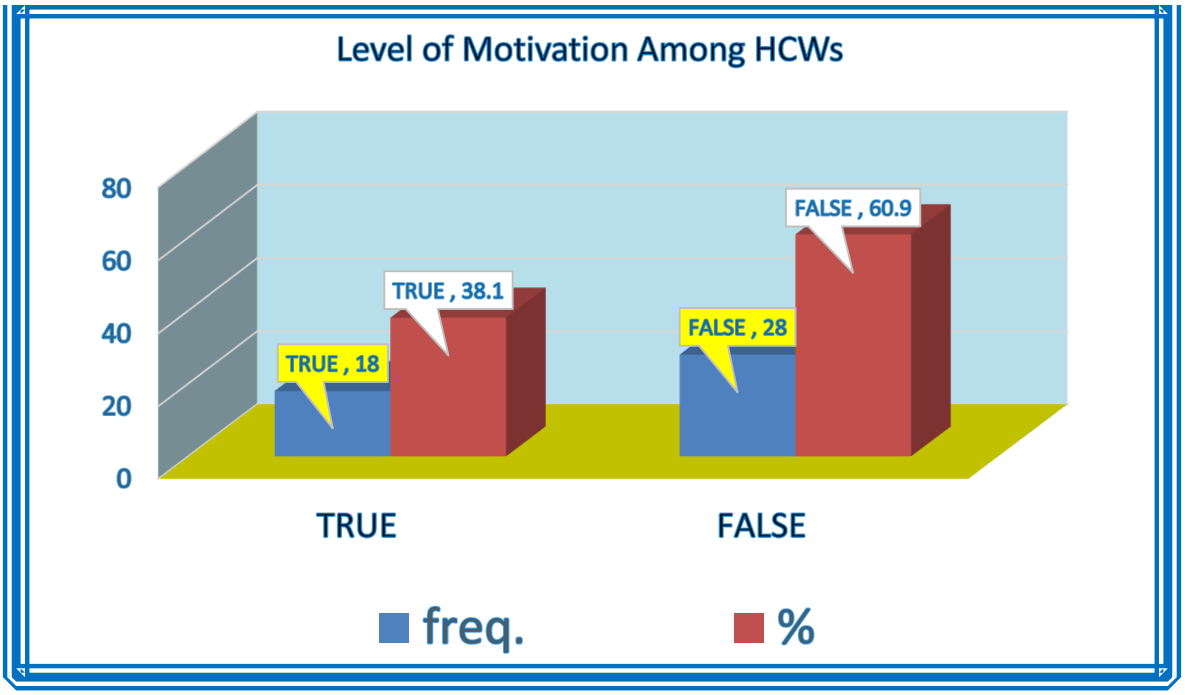

Figure 7: Level of motivation to follow IPC guidelines

Eighteen 39% (18) stated that they are truly motivated to follow IPC practices with or without supervision, whilst 61% (28) responded that they are falsely motivated to follow IPC practices with or without supervision\

4.4.6 Influence of IPC Practices on Patients' Outcomes

Fig 8 shows influence of IPC practices on patient's outcomes

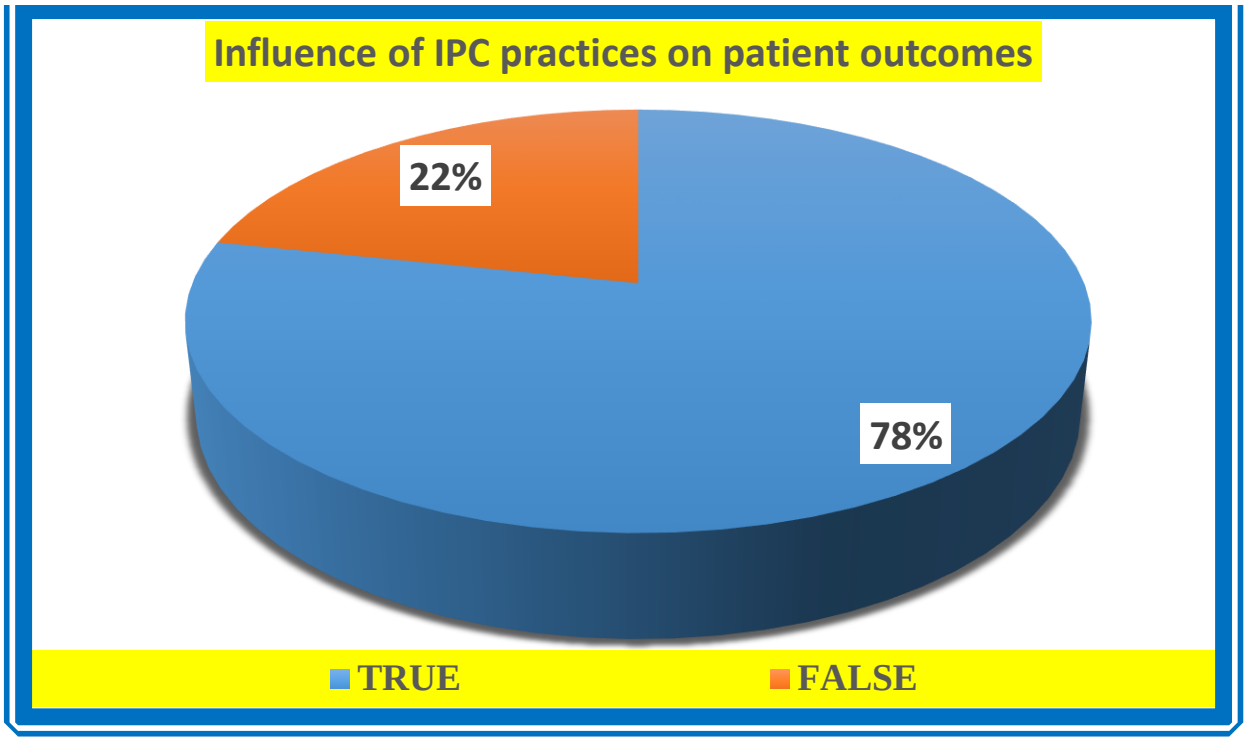

Figure 8: Influence of practices on patients' outcomes

Seventy-eight percent [(78%) (36)] attested that there's a great positive influence to patients' outcomes if IPC practices are followed whilst 22% (10) did not.

4.5 Behaviour of HCWs in IPC Practices

4.5.1: Frequency of Hand Washing Before and After Touching Every Patient

Figure 9 below shows frequency of hand washing before and after touching every patient The question on how often the HCWs washed their hands before touching every patient, and after touching every patient, 91.3% (42) of the respondents indicated that they sometimes did so whilst 8.7% (4) stated that they always do wash their hands before and after touching every patient while zero participants indicated that they never or rarely wash their hands.

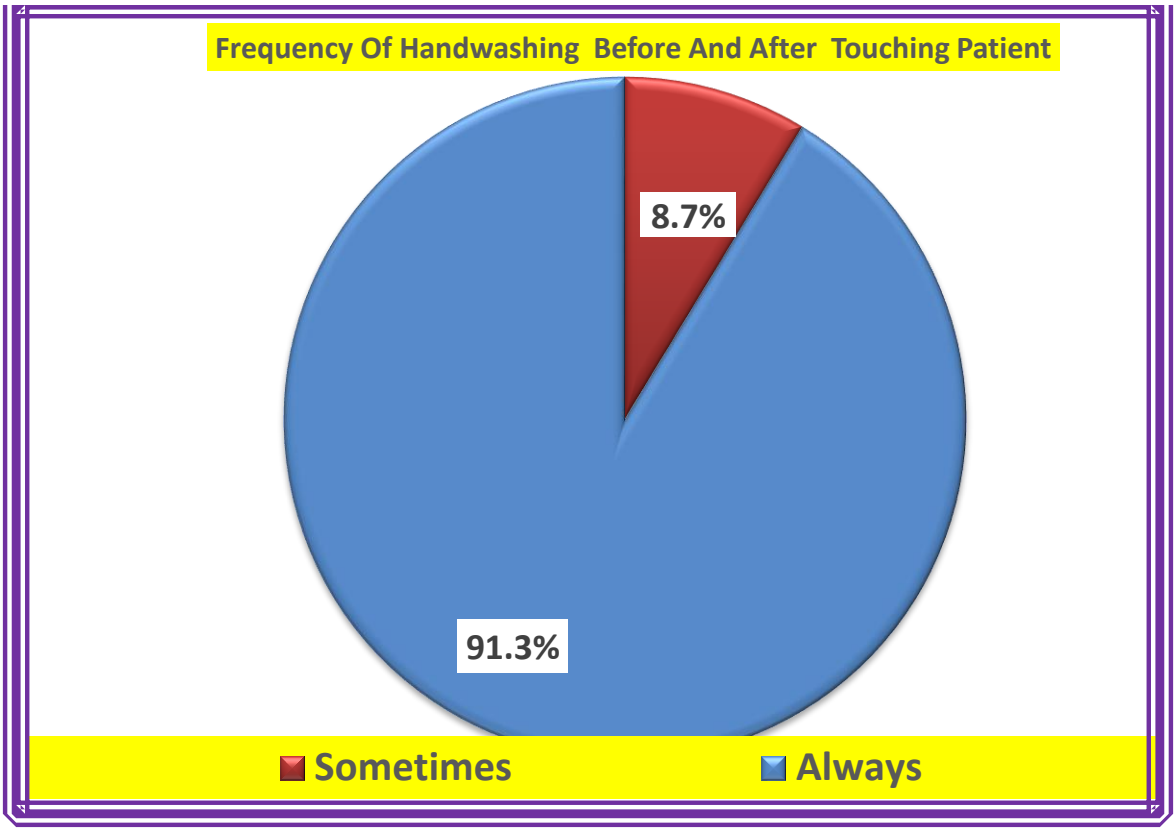

Figure 9: Frequency of hand washing before and after touching every patient

The findings revealed here were in tandem with findings of studies done by Tirivangisi, *et al* (2023), who stated that in most cases HCWs wash their hands only after touching patients. The respondents indicated that they always (100% response rate) wear gloves when touching body fluids. The greater part 67% (31) of participants cited that the correct duration for hand washing with water and soap, 33% (15) of participants incorrectly cited the time. This contradict with Tirivanhu *et al* (2023)'s results in which 28% (13) correctly cited the time to be taken wash hands while 72% (33) incorrectly cited the time.

4.5.2 Proper Disposal of Sharp Objects in Sharp Containers

Table 2 shows proper disposal of sharp objects in sharp containers

Proper disposal of sharp objects					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	**Always**	**46**	**100.0**	**100.0**	**100.0**

All of the respondents indicated that they always dispose of sharp objects in sharps containers. Bahegwa *et al*, (2022)'s results are similar to these results where he stated in his study that all the HCWs indicated that after using sharps they dispose them properly. The researcher's observations concluded that most of the HCWs seemed to exhibit higher compliance level in disposal of sharps. These results were also confirmed by Hokororo *et al*, (2021) in their study in Tanzania which revealed that 94 % of HCWs reported highest compliance on discarding used needles/sharps

4.5.3 Frequency of Infectious Patient Isolation

Figure 10 below shows frequency of infectious patient isolation

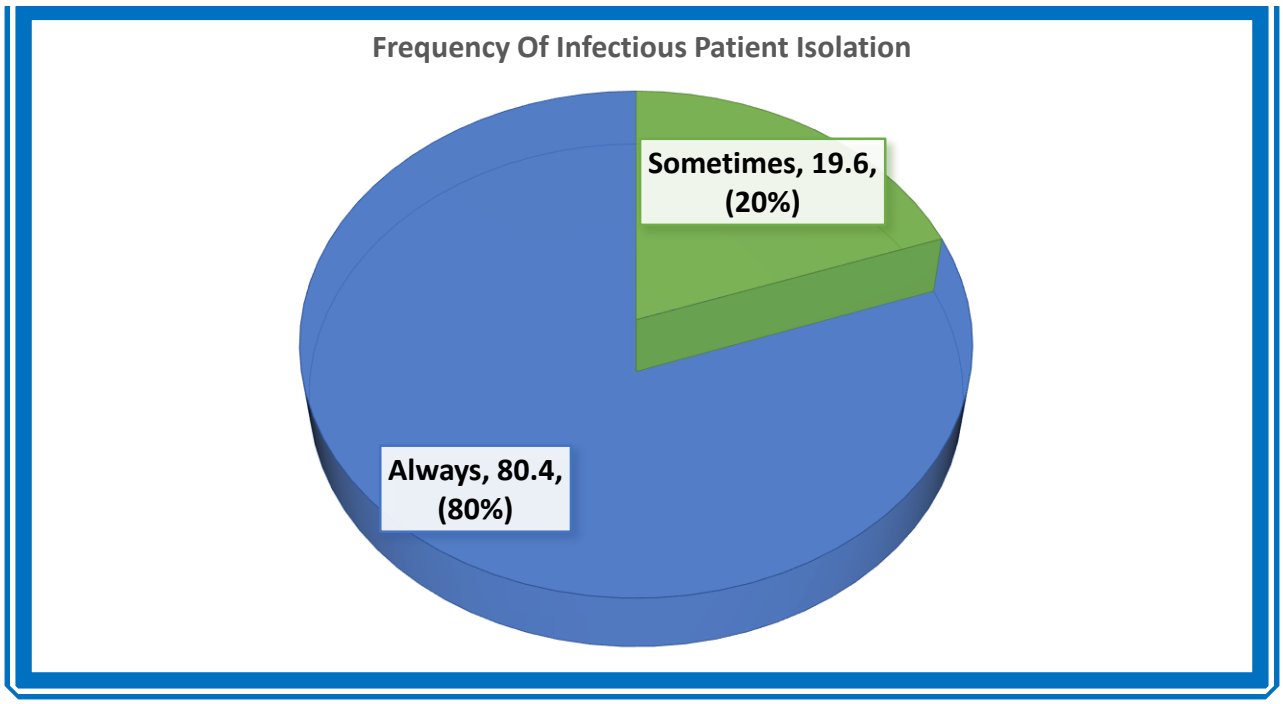

Figure 10: Frequency of infectious patient isolation

In answering the question on how often the HCWs isolated infectious patients 80% (37) responded that they always did that while 20% (9) responded that they sometimes did the isolation whilst none indicated on rarely and never. This showed that the Hospital was highly aware of the importance of isolation.

4.5.4 Frequency of Attending IPC Trainings

Figure 11 below shows the *respondents frequency* in attending IPC trainings.

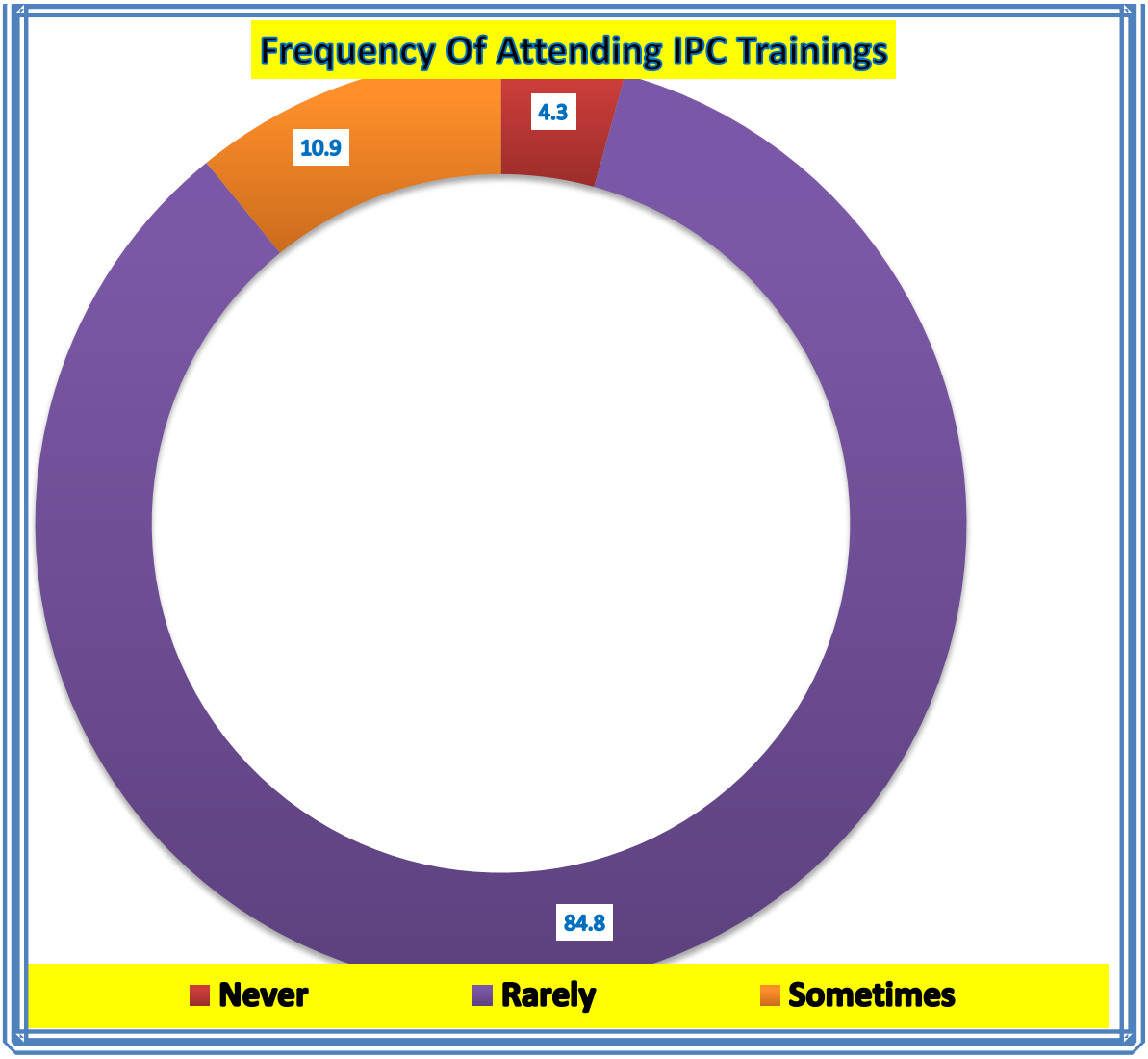

Fig11: Frequency of Attending IPC Trainings

The research results reported that 84.8% (39) of the respondents rarely attend IPC trainings, 10.9% (5) sometimes attend and 4.3% (2) never attended an IPC training. The HCWs admitted that despite their professional education, they did not receive any specific IPC training or orientation. The interviews also confirmed that the trainings on IPC were conducted henceforth, the trainings were only available for administrators and not frontline HCWs. These results were confirmed by Tirivangisi *et al*, (2023) who indicated that there were limited budget allocations to conduct frequent IPC trainings. There was also a positive correlation between level of knowledge and IPC

implementation. On the issue Shacho *et al*, (2024) stated that HCWs who reported having received adequate IPC training and education were much more applying it.

4.5.6 Reporting on IPC Breaches When Observed

Fig12 shows results from the question how often *the HCWs reported* IPC breaches when observed.

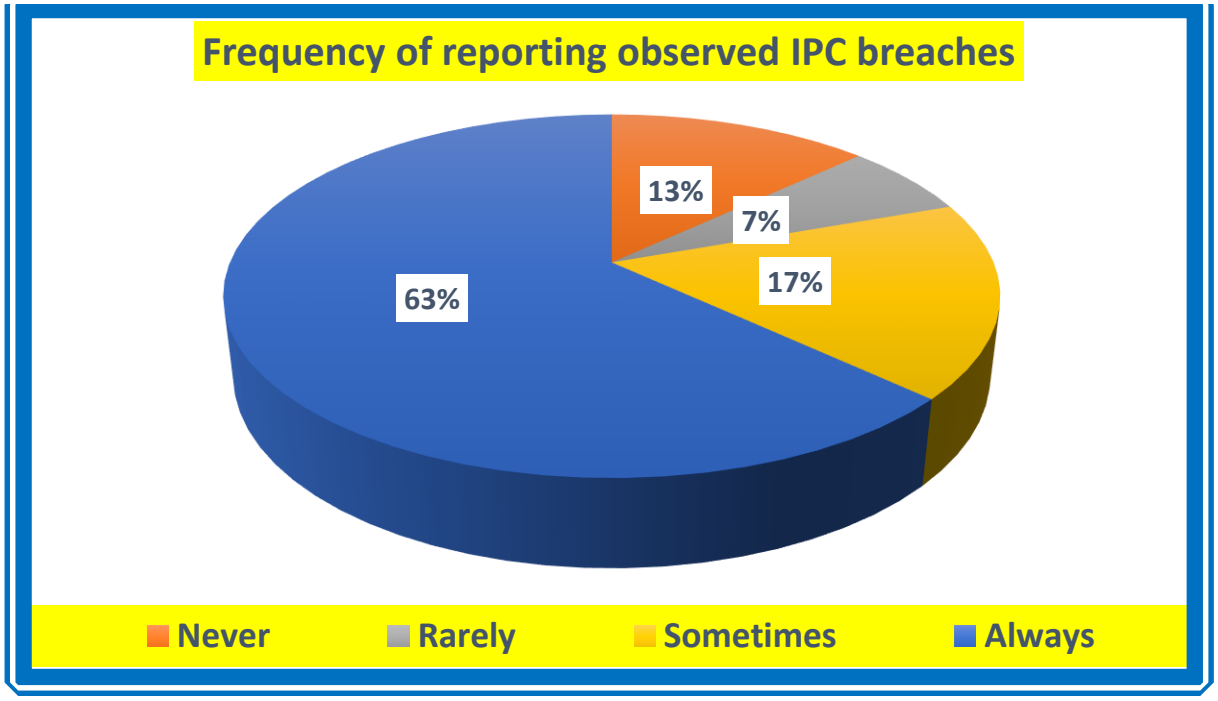

Figure 12: Frequency of reporting observed IPC breaches

In reporting the IPC breaches when observed, 63% (29) of the respondents indicated that they always did report, 17% (8) indicated that they sometimes did so, 13% (6) stated that they never reported whilst 7% (3) indicated that they rarely reported the cases. The researcher viewed that most of the IPC breaches were not reported mainly due colleague bias or horizontal hostility amongst the HCWs, of same level as well as hierarchy-induced silence amongst supervisors and subordinates as well as limited knowledge on the proper procedures amongst the HCWs. This was supported by Shacho *et al*, (2024) who indicated that HCWs demonstrated higher compliance with IPC practices than Doctors, however Shacho *et al did* report the breaches on IPC practices. Tirivangisi *et al*, (2023) also confirmed the situations, stating that most of the hospital outbreaks were neither reported nor documented, thereby contradicting to these results.

4.5.7 Reporting on Breaches Addressed

Figure 13 below shows how often the addressed breaches were reported

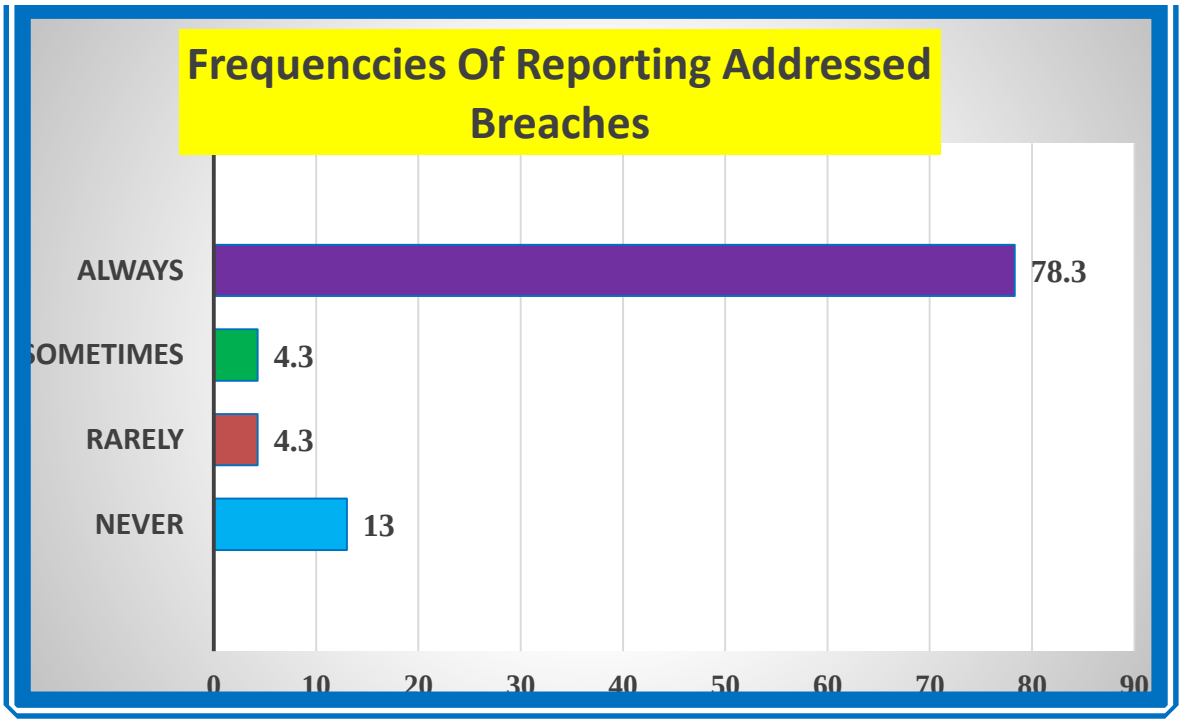

Figure 13 frequencies of reporting addressed breaches

As noted on Fig 4 above 78.3% (36) of the participants indicated that the addressed breaches were always reported, followed by 13% (6) who indicated they were never addressed, whilst 4.3% (2) reported they were rarely reported. The major cited reasons for this include limited healthcare resources, limited finances, and lack of proper facilities such as isolation units, sinks and bedding. These results were in tandem with those reported by Tirivanhu *et al* (2023) who stated that outbreaks are rarely documented, as there were limited records and reports at hospitals on IPC indicating it as an issue of concern.

4.5.8 Frequency of How HCWs Practice IPC Without Supervision

Fig 14 shows the responses from the participants on the frequency on how often the participants practiced IPC on their own, without supervision.

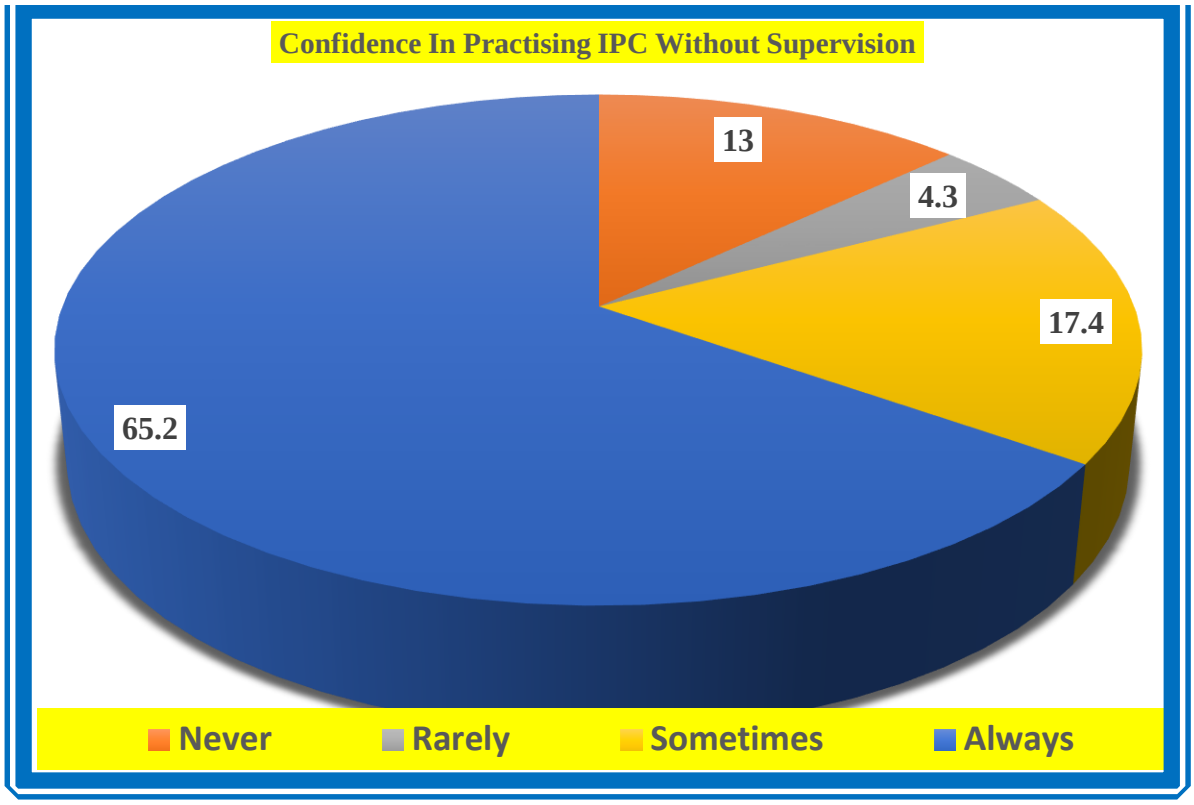

Figure 13 : Respondents' level of confidence in practising IPC without supervision

According to the survey, on the assessment of how often the research participants practised IPC on their own, without supervision, revealed that 65.2% (30), of the participants always practised; 17.4% (8) expressed that they sometimes practised, 13% (6) indicated that they never practised, whilst 4.3% (2) indicated that they rarely practised. These findings were quite similar to those revealed by Tirivangisi, *et al* (2023), who highlighted that junior staff who were interviewed indicated that they mostly work under close supervision.

4.6 Challenges Hindering Implementation of IPC at the Hospital.

The study revealed that There were varied factors which affected the implementation of IPC which included organisational, environmental and individual factors. In this research, the HCWs indicated that the major impediments to implementation of IPC practices included limited level of knowledge, limited financial resources to procure adequate PPE, poor IPC infrastructural facilities,

non-availability of equipment, high workload, higher patient to nurse ratio, time limitation, lack of implemented IPC guidelines and regulations. A study conducted by Asfaw (2022) indicated that 91.6% (42) of HCW also faced several challenges in implementing infection control and prevention.

4.7.0. Chapter Summary

This chapter presents the analysis and findings of a study assessing the level of knowledge, attitudes, and behaviour of Healthcare Workers (HCWs) towards Infection Prevention and Control (IPC) practices at Victoria Chitepo Provincial Hospital. The study utilized a mixed-methods approach, combining quantitative and qualitative data. The findings indicate that HCWs had a high level of knowledge on IPC practices, but there were gaps in their attitudes and behaviours. The study also revealed that the hospital's workplace environment provides minimal support for IPC practices, and HCWs often lacked motivation to follow IPC guidelines. The frequency of IPC training was low, and most HCWs rarely attended training sessions. The study concludes that there is a need for regular IPC training, improved workplace environment, and increased support for HCWs to ensure effective implementation of IPC practices. The findings have implications for policy and practice, highlighting the need for targeted interventions to improve IPC practices among HCWs. All these are summarised and concluded on in Chapter 5 to come next

CHAPTER 5: DISCUSSION, IMPLICATIONS, RECOMMENDATIONS SUMMARY AND CONCLUSION

5.1. Introduction

This chapter presents a comprehensive summary of the major findings, discussion, conclusion, and recommendations of the study on knowledge, attitudes, and behaviors of healthcare workers toward infection prevention and control at Victoria Chitepo Hospital, Mutare, Zimbabwe. The purpose of this study was to assess the level of knowledge, attitudes, and behaviour regarding infection prevention and control practices among healthcare workers at Victoria Chitepo Provincial Hospital in 2025. The chapter is organized into six sections: (i) a summary of the study's key findings; (ii) major findings on the level of knowledge regarding standard infection prevention and control guidelines, attitudes towards the application of IPC practices, and practices of healthcare workers in preventing and controlling infections; (iii) a discussion of the findings, exploring the implications of the results and comparing them to existing literature; (iv) a conclusion that synthesizes the main findings and implications of the study; (v) recommendations for policy, practice, and future research, aimed at improving infection prevention and control practices among healthcare workers; and (vi) suggestions for further research topics that can build on the findings of this study. By presenting these elements, this chapter aims to contribute to the understanding of infection prevention and control practices among healthcare workers and inform strategies to improve patient safety and healthcare outcomes.

5.2. Summary

The study on knowledge, attitudes, and behaviors of healthcare workers toward infection prevention and control at Victoria Chitepo Hospital, Mutare, Zimbabwe, aims to address the inadequate implementation of infection prevention and control practices in healthcare settings. The study is motivated by the significant impact of healthcare-associated infections on patient outcomes and healthcare costs. The research process followed in this study involved identifying the problem of inadequate infection prevention and control practices, justifying the study's importance, setting specific objectives, formulating research questions, selecting a research design, choosing a mixed methods approach, defining the study population, determining the sampling

procedure and size, selecting research instruments (interview guide and questionnaire), and conducting data collection procedures.

The research design used in the study was a descriptive case study incorporating a mixed methods approach, combining qualitative and quantitative data collection and analysis methods. Purposive sampling was employed to select participants based on their relevance to the study, with a sample size of 46 healthcare workers at Victoria Chitepo Hospital. Data was collected using interview guides for in-depth qualitative insights and questionnaires for quantitative data. The study population included doctors, nurses, laboratory personnel, and support staff involved in patient care at the hospital.

The data collection procedures involved obtaining consent from the Medical Superintendent, explaining the study purpose to participants, self-administering questionnaires to 46 healthcare workers, and conducting face-to-face interviews with 6 key informants using an interview protocol. The study focused on assessing the level of knowledge, attitudes, and behaviors related to infection prevention and control practices among healthcare workers at the hospital.

The research process followed in this study aimed to provide comprehensive insights into the current practices and challenges faced by healthcare workers regarding infection prevention and control. By identifying areas for improvement and proposing targeted interventions, the study intends to contribute to enhancing infection prevention and control measures at Victoria Chitepo Hospital for the benefit of patients, healthcare workers, and the community at large.

practices due to lack of knowledge, limited resources, and high workload. The lack of IPC guidelines, regulations, and infrastructural facilities was also highlighted as a significant barrier. Additionally, the respondents mentioned the non-availability of adequate equipment and PPE, as well as high patient-to-nurse ratios and time limitations, as key challenges in implementing IPC practices. These findings align with the literature that suggests that challenges in IPC implementation are often multifaceted and require a comprehensive approach to address.

5.3.0. Major Findings

In summary, the study conducted at Victoria Chitepo Provincial Hospital revealed the following findings in response to the three research questions:

5.3.1. Level of Knowledge Regarding Standard Infection Prevention and Control Guidelines

The study revealed that healthcare workers (HCWs) at Victoria Chitepo Provincial Hospital have a high level of knowledge regarding standard infection prevention and control (IPC) guidelines. The majority of HCWs demonstrated correct knowledge of hand hygiene and disposal of sharp objects. However, despite this high level of knowledge, there was a noticeable gap between theoretical understanding and practical application. Observations showed lapses in hand hygiene duration and inconsistent application of standard precautions, suggesting that knowledge alone is insufficient to ensure compliance with IPC practices. This finding is consistent with previous studies, highlighting the need for ongoing training and support to bridge the gap between knowledge and practice. The study also found that most HCWs had not received specific IPC training beyond their basic training, underscoring the importance of continuous education and training in IPC.

5.3.2. Attitudes Towards the Application of IPC Practices

The study found that HCWs generally have a positive attitude towards IPC practices, acknowledging their importance in reducing healthcare-associated infections (HAIs). However, there was a discrepancy between stated attitudes and actual implementation, with selective adherence to guidelines. Confidence levels in practicing IPC varied among HCWs, with some expressing low confidence due to factors like designation and resource availability. HCWs reported minimal support from the workplace environment for IPC practices, highlighting challenges such as the lack of an active IPC board and financial constraints. These findings suggest that HCWs' attitudes towards IPC practices are influenced by various factors, including their work environment and available resources. Negative attitudes and lack of motivation among some HCWs were identified as significant barriers to effective IPC implementation, emphasizing the need to address attitudinal barriers and foster a culture of accountability and commitment to IPC practices.

5.3.3. Practices of HCWs in Preventing and Controlling Infections

The study revealed that HCWs demonstrated acceptable behaviours in certain aspects of IPC, such as proper disposal of sharp objects and isolation of infectious patients. However, there were areas of concern, including inconsistent handwashing before and after patient contact and low attendance at IPC training sessions. The study also identified challenges in reporting and addressing IPC breaches, with underreporting attributed to colleague bias, hierarchy-induced silence, and limited healthcare resources. These findings suggest that while HCWs have good intentions to follow IPC practices, they face challenges in implementing them due to various factors, including limited resources and inadequate training. The study highlights the importance of addressing these challenges and providing support to HCWs to ensure effective IPC implementation and prevent HAIs. Limited resources, inadequate training, and high workload were identified as key barriers to effective IPC implementation, underscoring the need for healthcare facilities to prioritize IPC and invest in necessary resources to create a conducive environment for compliance with IPC practices.

5.4.0. Discussion of Findings

5.4.1. Level of Knowledge Regarding Standard Infection Prevention and Control Guidelines

The assertion that healthcare workers at Victoria Chitepo Provincial Hospital have a high level of knowledge regarding standard infection prevention and control guidelines but a noticeable gap between theoretical understanding and practical application is consistent with previous studies. According to Allegranzi et al. (2022), knowledge of infection prevention and control among healthcare workers is vital for the correct implementation of measures, but lack of knowledge and poor attitudes among healthcare professionals are significant contributors to non-compliance with infection prevention and control protocols.

Studies have shown that healthcare workers' knowledge of IPC practices is often influenced by the amount of formal IPC training received (Chitimwango, 2018). However, despite having good knowledge of IPC practices, healthcare workers may not always translate this knowledge into practice due to various factors such as limited resources, inadequate training, and high patient volumes (Tirivangisi et al., 2023).

The finding that most healthcare workers had not received specific IPC training beyond their basic training underscores the importance of continuous education and training in IPC. According to the World Health Organization (WHO, 2021), IPC training and education are critical components of effective IPC programs. Providing ongoing training and support to healthcare workers can help bridge the gap between knowledge and practice and improve compliance with IPC protocols. Similar studies have reported discrepancies between knowledge and practice among healthcare workers. For example, a study in Zambia found that nurses and other healthcare workers had average knowledge levels of IPC practices, but their practices were often influenced by the amount of formal IPC training received (Chitimwango, 2018). Another study in Iran found that healthcare workers had good knowledge of IPC practices, particularly in sterilization techniques and patient isolation, but there were still gaps in practice (Awwad et al., 2023).

The remaining gap that remained unplugging is the inconsistent application of standard precautions and lapses in hand hygiene duration. To address this gap, it is recommended that healthcare facilities provide ongoing training and support to healthcare workers, including regular feedback and supervision, to improve compliance with IPC protocols. Additionally, healthcare facilities should ensure that IPC policies and guidelines are in place and easily accessible to healthcare workers.

5.4.2. Attitudes Towards the Application of IPC Practices

The study's findings on Healthcare Workers' (HCWs) attitudes and behaviours towards Infection Prevention and Control (IPC) practices at Victoria Chitepo Hospital in Mutare, Zimbabwe, highlight significant challenges in implementing effective IPC measures. Despite HCWs generally having a positive attitude towards IPC practices, there is a notable discrepancy between their stated attitudes and actual implementation, with selective adherence to guidelines. Studies have shown that HCWs in low-resource settings often face challenges in adhering to IPC guidelines due to limited resources, inadequate training, and high patient volumes (Bahegwa et al., 2022; Alhmaid et al., 2022). Research has also highlighted the importance of knowledge, attitudes, and behaviours in IPC implementation, with positive attitudes linked to higher compliance and willingness to engage in IPC measures (Chitimwango, 2018; Allegranzi et al., 2022). The World Health Organization (WHO) emphasizes the need for IPC programs at national, district, and facility levels to oversee IPC implementation and allocate necessary resources and support (WHO, 2021).

However, the study highlights the specific challenges faced by HCWs in Zimbabwe, including lack of support from the workplace environment, minimal resources, and inadequate IPC infrastructure. The findings suggest that HCWs' confidence levels in practicing IPC vary, with some expressing low confidence due to factors like designation and resource availability. There is a need for more context-specific research on IPC implementation in Zimbabwean healthcare settings.

5.4.3. Practices of HCWs in Preventing and Controlling Infections

The study on "Knowledge, Attitudes, and Behaviours of Healthcare Workers Toward Infection Prevention and Control at Victoria Chitepo Hospital, Mutare, Zimbabwe" highlights crucial findings that align with existing literature on infection prevention and control (IPC) in healthcare settings. The assertion that healthcare workers (HCWs) demonstrated acceptable behaviors in certain aspects of IPC, such as proper disposal of sharp objects and isolation of infectious patients, but struggled with inconsistent handwashing and low attendance at IPC training sessions, underscores the complexity of implementing effective IPC practices in resource-constrained environments. The Studies have consistently shown that IPC training significantly improves HCWs' knowledge and practices. For instance, a study in Zambia found that nurses and other HCWs had average knowledge levels, often influenced by the amount of formal IPC training received (Chitimwango, 2018). Limited resources, inadequate training, and high workload are well-documented barriers to effective IPC implementation in low-income countries (Bahegwa et al., 2022; Alhmaid et al., 2022).

Research highlights discrepancies between HCWs' knowledge, attitudes, and actual practices, emphasizing the need for targeted interventions to bridge these gaps (Nair et al., 2019). While existing literature emphasizes global challenges in IPC implementation, the study at Victoria Chitepo Hospital specifically highlights the impact of colleague bias, hierarchy-induced silence, and limited healthcare resources on reporting and addressing IPC breaches. The study underscores the importance of developing context-specific IPC programs that address the unique challenges faced by HCWs in resource-constrained settings.

The research also revealed challenges hindering the effective implementation of IPC practices at the hospital, including limited resources, knowledge gaps, and organizational factors. Addressing these challenges through targeted interventions, regular training, and improved workplace support

may enhance compliance with IPC guidelines and improve infection control outcomes at Victoria Chitepo Provincial Hospital. The study underscores the importance of continuous education and support for healthcare workers to ensure the effective prevention and control of healthcare-associated infections and safeguard patient outcomes. Further research and resource allocation are needed to strengthen IPC practices and protect both HCWs and patients from the risks associated with inadequate infection control measures.

5.5.0. Conclusion

The study found that the majority of outbreaks of HAIs were not documented or reported, leading to a lack of evidence supporting the importance of infection prevention and control in hospitals.

The research findings noted that a significant number of HCWs especially the nurses and general staff who are always providing daily nursing care did not attend Infection control workshops. This indicates poor planning as most of the HCWs spent more than 5 years post qualification without IPC training. The senior nurses who indicated that they managed to attend IPC training workshop were expected to give feedback to their respective staff, did not fulfil their mandate as required.

There has been clear evidence that regular infection prevention and control plays a pivotal role in reducing hospital acquired infections. It serves as the first line of defence against infection transmission, effectively breaks the chain of contamination from hospital surfaces and devices and it prevents medical complications that can delay recovery and inflate healthcare costs. The evidence is clear, proper IPC saves lives. In essence it constitutes of simple tasks, but it has a huge impact on patient safety and hospital efficiency. Every person in the healthcare environment, doctor, nurse, personal support worker, patient, even visitors had a part to play in keeping and maintaining IPC standards. The responsibility is shared and the rewards are huge, a safer and more effective healthcare system.

In conclusion, the study revealed that the level of knowledge of IPC practices is fairly high, although a huge gap has been identified in the upgrading the knowledge base of IPC amongst HCWs at Victoria Chitepo Provincial Hospital as evidenced by few IPC trainings held. A positive

attitude on IPC has been noted amongst HCWs in implementing IPCs, however there is a need to continuously encourage the HCWs. Additionally, a fair behaviour has been reported but there is a need for improvement in the full and proper implementation of all IPC practices to reduce HAIs.

At Victoria Chitepo Provincial Hospital, the level of knowledge among healthcare workers is fairly high, although there are gaps in upgrading the knowledge base of IPC amongst HCWs, with few IPC trainings held. In answering the research question which says "What is the attitude of healthcare workers towards the application of infection prevention and control practices at Victoria Chitepo Provincial Hospital?" it was quite clear that healthcare workers have a positive attitude towards IPC, acknowledging its importance, but face challenges in confident implementation due to factors like resource availability and workplace support.

Practices of HCWs at Victoria Chitepo Provincial Hospital vary, with acceptable behaviours in certain aspects of IPC, but concerns exist regarding inconsistent handwashing and low attendance at training sessions, indicating a need for improvement in the full and proper implementation of all IPC practices.

5.6.0. Recommendations

Basing on the gaps identified as the researcher assessed the similarities and differences which existed between the expected as shown through literature review and the actual situation which existed the researcher came up with the following recommendations. The VCPH top management in collaboration with the mother ministry and other stakeholders needs to seriously consider to do the following:

i. Set up IPC boards and provide necessary resources and support to HCWs.
ii. Provide regular training and education to HCWs on IPC practices, including hands-on training and simulation-based education.
iii. Implement regular monitoring and feedback mechanisms to improve HCWs' adherence to IPC guidelines.
iv. Develop and make IPC policies and guidelines easily accessible to HCWs.
v. Provide adequate staffing, equipment, and supplies to support IPC practices.
vi. Establish surveillance systems to monitor IPC practices and provide regular feedback to HCWs.

vii. Encourage a culture of safety within healthcare facilities, promoting open reporting of IPC breaches and near misses.

viii. Regularly review and update IPC protocols based on emerging research.

5.7.0. Research topic for further study

In order to effectively bridge the existing gaps, the researcher suggest that the research topic which says "Evaluating the Effectiveness of IPC Programmes in Reducing Hospital-Acquired Infections in Zimbabwean Healthcare Facilities: A Mixed-Methods Study", should be carried out

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APPENDIX 1-CONSENT FORM

My name is Adreen Maringe. I am an IPC Post graduate student in the Department of Health Science at Bindura University of Science Education. I am researching on the topic entitled "An assessment of knowledge, attitudes and behaviour regarding infection prevention and control practices among Health Care workers at Victoria Chitepo Hospital". I would be grateful if take part in this research. The results will be used for academic purposes only and will be treated confidentially. To maintain confidentiality, no name or phone number should be disclosed at any part of this survey and also feel free to withdraw at any time if you wish to do so. You are kindly requested to answer all the questions as honestly as possible. The participation in this study is purely voluntary and last only 10 to 20 minutes to answer. I assure you that all the information will be kept very secure and only accessible to me and my supervisor at BUSE only.

If you encounter any challenges or have any questions concerning this study you can contact me during working hours at my mobile number **+263772900547.**

I have read and understand the contents above and willing to participate in the study.

Participate Signature …….. Date……

Researcher Signature …… Date……

APPENDIX 2- QUESTIONNAIRE

My name is Adreen Maringe. I am an IPC Post graduate student in the Department of Health Science at Bindura University of Science Education. I am researching on the topic entitled "An assessment of knowledge, attitudes and behaviour regarding infection prevention and control practices among Health Care workers at Victoria Chitepo Hospital". The results will be used for academic purposes only and will be treated confidentially. Your participation in this questionnaire is highly appreciated.

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

1. **Name of Department/Ward** [Please tick]: Surgical/Medical/OPD/Maternity/ICU/Children

2**. Sex** [Please tick] ☐ M F

3. **Age** [Please tick] below 35 years / 35- 50 years / Above 50 years

4. **Designation** [Please tick]: Doctor/ Nurse /Laboratory Staff/ General Staff

5. **Number of years in Service** [Please tick]: less than 3years / 3-10 years / more than 10 years

6. **Last IPC Training attended** [Please tick]: None/less than a year/1 year/ 1-3 years /more than 3 years

SECTION B: LEVEL OF KNOWLEDGE AMONGST HCWs ON IPC PRACTICES

Please tick where appropriate: True/ False

7. Hand Hygiene is most effective for prevention of HAIs: True/ False

8. Alcohol based hand rubs should be used even with visibly soiled hands: True/False

Please tick the correct answer

9. Standard precaution should be applied to……..

a) Patients with infectious diseases only

b) Patients in Isolation only

c) All patients regardless of diagnosis

10. What's the correct duration for hand washing with water and soap?

a) 20 seconds

b) 10seconds

c) 30-60 seconds

11. PPE includes

a) Gloves only

b) Gloves, gowns, masks and eye shield

c) Masks and gowns

12. Used sharps should be……

a) Disposed in a sharps container without recapping it

b) Recapped before disposal

c) Put in bins with other waste

13. The following is part of Respiratory hygiene and cough etiquette

a) Sneezing is done in hands

b) Cover nose and mouth when sneezing or coughing.

SECTION C: ATTITUDE AMONGST HCWs TOWARDS IPC PRACTICES

Indicate your level of agreement by choosing/ ticking correct statement

14. All IPC practices are very important to protect patients and health care workers: True/ False

15Level of confidence to practice IPC and follow all guidelines and protocols: High/Medium/ow

16. How do you rate the level of workplace environment in providing adequate support for IPC practices: Maximum/Medium/Minimum

17. Adhering to IPC guidelines and practices slows down my work always: True/ False

18. With or without supervision l am motivated to follow IPC practices: True/False

19. There's a great positive influence to patients outcomes if IPC practices are followed: True/ False

SECTION C: BEHAVIOUR OF HCWs IN IPC PRACTICES

Kindly tick your correct answer

Self-reporting IPC behaviour	Never	Rarely	Sometimes	Always
20. How often do you wash your hands before and after touching every patient?				
21. How often do you wear gloves when touching body fluids?				
22. How often do you properly dispose sharp objects?				
23. How often do you isolate infectious patients?				
24. How often do you attend IPC trainings?				
25. How often do you report IPC breaches when observed?				
26. How often are the breaches addressed when reported?				
27. How often do you practice IPC on your own, without supervision?				

28.What are the challenges hindering implementation of IPC at the hospital?.....
.....
.....

29. In your opinion, what do you think can be done to improve IPC measures at the hospital?

……
……
……

Thank you!

APPENDIX 3-UNSTRUCTURED INTERVIEW GUIDE

My name is Adreen Maringe. I am an IPC Post graduate student in the Department of Health Science at Bindura University of Science Education. I am researching on the topic entitled "An assessment of knowledge, attitudes and behaviour regarding infection prevention and control practices among Health Care workers at Victoria Chitepo Hospital". The results will be used for academic purposes only and will be treated confidentially. Your participation in this interview is highly appreciated. I am kindly requesting you to participate in this study by responding to the questions to your best knowledge. Take note that participation in this study is purely voluntary and you are not going to receive and token for your participation furthermore, you are free to withdraw any time you feel uncomfortable. All the information you provide shall be confidential and only be used for this study. You are free to accept or reject your participation, should you have any questions you can ask me before we proceed.

Guiding Questions

1. Which ward / department were you admitted in?
2. How do you rate the HCW's level of knowledge on hygiene?
3. Did the nurse wash their hands before and after touching you?
4. Did they use the gloves?
5. How the Doctor/Nurse did dispose of the sharp objects used on you?
6. Did the Nurse/Doctor prioritise hygiene when attending your and other patients?
7. Did you receive any talk on hygiene before or during your admission?
8. How did you rate the nurse/doctor's attitude on practising hygiene?
9. Was the nurse who attended you, under supervision?
10. How do you rate the behaviour of the nurse who attended you?
11. Did the nurse or doctor who attended you report any breaches experienced or observed during your admission?
12. What do you think can be done to improve hygienic measures at the hospital?

THANK YOU!

APPENDIX 4- KEY INFORMANT INTERVIEWS

My name is Adreen Maringe. I am an IPC Post graduate student in the Department of Health Science at Bindura University of Science Education. I am researching on the topic entitled "An assessment of knowledge, attitudes and behaviour regarding infection prevention and control practices among Health Care workers at Victoria Chitepo Hospital". The results will be used for academic purposes only and will be treated confidentially. Your participation in this questionnaire is highly appreciated.

Guiding Questions

1. Are there any IPC measures at the Hospital? If yes, which are they?
2. Does the hospital have an IPC policy or guideline?
3. If not, what are the reasons for not having one?
4. Is the staff aware of the policy/ guideline? If yes, how are they informed about it?
5. How do you rate your staff's level of knowledge on IPC?
6. Do you carry routine inspections on IPC issues at your hospital?
   a)If Yes, how often?
   b) if No, why?
7. In your view, does the hospital staff prioritise IPC?
8. How do you view the HCWs' attitude towards IPC?
9. In your view, how does the level of knowledge amongst HCWs affect implementation of IPC at the hospital?
10. In your view, how does attitudes of HCWs affect implementation of IPC at the hospital?
11. In your view, how does the behaviour of HCWs affect implementation of IPC at the hospital?
12. What are the challenges hindering implementation of IPC at the hospital?
13. What do you think can be done to improve the implementation of IPC practices at the hospital?

THANK YOU!

APPENDIX 5-LETTER OF CONSENT