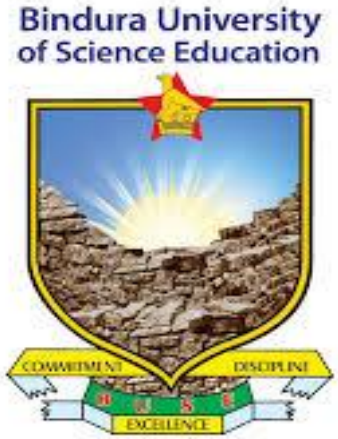

ASSESSMENT OF HEALTHCARE WORKER'S KNOWLEDGE, ATTITUDES AND PRACTICES TOWARDS HAND HYGIENE AT BAINES AVENUE CLINIC IN HARARE, ZIMBABWE

by

MAZANJI MWANZA

REGISTRATION NUMBER: B227441A

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR POSTGRADUATE DIPLOMA IN INFECTION PREVENTION AND CONTROL

(PGDIPC)

YEAR: 2025

SUPERVISOR: MR N HANDIREKETI

APPROVAL FORM

The undersigned certifies that they have supervised, read and recommended to Bindura University of Science Education for acceptance, a research project entitled: **Assessment of healthcare worker's knowledge, attitudes and practices towards hand hygiene at Baines Avenue clinic in Harare, Zimbabwe,** submitted in partial fulfilment of the requirements of the Postgraduate Diploma in Infection Prevention and Control.

To be completed by student.

The undersigned certify that this dissertation meets the preparation guidelines as presented in the Faculty Guide and Instructions for typing dissertations

…M. Mwanza……. ……28/06/25…….

Signature of student Date

II. To be completed by supervisor.

I certify that I supervised **MAZANJI MWANZA**, registration number **B227441A** in carrying out the research entitled, "**Assessment of health care worker's knowledge, attitudes and practices towards hand hygiene at Baines Avenue Clinic, Harare, Zimbabwe, in 2025.**", in partial fulfilment of the requirements for the award of Post Graduate Diploma in Infection Prevention and Control (PGDIPC)and recommend that it proceeds for examination.

Supervisor: N Handireketi

17/09/2025

Signature of Supervisor Date

III. To be completed by Chairperson of the Department.

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

17.09.2025

Signature of Chairman Date

RELEASE FORM

Name of Author: Mazanji Mwanza

Title of Project: Assessment of healthcare worker's knowledge, attitudes and practices towards hand hygiene at Baines Avenue clinic in Harare, Zimbabwe.

Programme: Post Graduate Diploma in Infection Prevention and Control

Year Granted: 2025

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DECLARATION

I declare that a study entitled:

Assessment of healthcare worker's knowledge, attitudes and practices towards hand hygiene at Baines Avenue clinic in Harare, Zimbabwe is my own presentation and it has not been submitted before for any Degree/Diploma programme or examination in any university. I know that Bindura University of Science Education has strict academic writing rules and I understand the consequences of Breaking such rules. My work is original and all sources are properly cited. I did this work by myself and with the help of my assigned Research Supervisor. This final report was created by myself.

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ABSTRACT

Hand hygiene is the most effective measure for reducing Healthcare Associated Infections universally yet it remains a global challenge. This study explored the knowledge, attitudes and practices of healthcare workers at Baines Avenue Clinic in Harare, Zimbabwe, regarding hand hygiene and identifies factors influencing adherence. The study employed a qualitative case study research design, utilizing the Health Belief Model, Theory of Planned Behaviour, and Social Cognitive Theory including semi-structured interviews and focus groups with 20 purposefully selected healthcare workers. The study yielded a 70% response rate. Data was analysed thematically to reveal patterns in knowledge, attitudes, practices and systemic barriers to hand hygiene compliance. Preliminary literature suggested that gaps in knowledge, attitudes, practices, resource limitations, and workplace culture significantly affect adherence. The study aimed to offer policy recommendations, training interventions, and institutional strategies to enhance hand hygiene compliance and reduce HAIs. The results confirmed a strong foundational possession in knowledge regarding hand hygiene among Health care workers at Baines Avenue Clinic. However, while knowledge was widespread, its application in daily practice was occasionally inconsistent due to contextual constraints.

ACKNOWLEDGEMENTS

For this study to be a success, I would like to express my sincere gratitude to my tutors who took me through the two years of the programme, my supervisor, Mr Handireketi, for all the invaluable guidance, support, patience, encouragement and constructive feedback, without him the journey was not going to be a success. I am also grateful to Bindura University of Science Education, Department of Health Sciences for their logistical and academic support. Special thanks to Baines Avenue Clinic management and staff who gave their time and shared experiences. I also thank my family and friends for their encouragement and moral support throughout the study. To all the mentioned and the unmentioned your support made this study a success. Thank you.

DEDICATION

This research is dedicated to my family, friends and my tutors whose unwavering support, love, guidance and support have shaped who I am. Your encouragement and sacrifices gave me the strength when I needed it most. I am forever grateful.

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CHAPTER 1 - INTRODUCTION

1.1 Introduction

Hand hygiene is universally recognised as a crucial, inexpensive and important measure in preventing Health Care Associated Infections and ensuring patient safety (WHO 2022). Hand hygiene practices among health care workers is emphasised as a key strategy to infection prevention and control. Despite established guidelines and awareness campaigns, adherence among health care workers remains sub optimal influenced by factors such as attitudes habitual practices and knowledge. Assessing these factors is essential for identifying gaps that may contribute to poor compliance. Understanding the attitudes and behaviours regarding hand hygiene habits is crucial as knowledge alone does not correlates to correct practice This study investigates the knowledge and attitudes of HCWs at Baines Avenue Clinic in Harare, Zimbabwe, in 2025, aiming to identify barriers to compliance as well as opportunities for improvement in hand hygiene practices. This chapter highlights the background to the study, problem statement, purpose of the study, research objectives, research questions, significance of the study, delimitation, limitations of the study and organisation of the study.

1.2 Background to the Study

Hand hygiene is a cornerstone of infection prevention in healthcare environments, playing an important role in reducing healthcare-associated infections (HAIs) and ensuring patient safety, WHO, (2022). Despite its importance, compliance with hand hygiene protocols among healthcare workers (HCWs) often remains suboptimal, influenced by knowledge gaps, attitudes, practices and workplace conditions. Studies have highlighted that HCWs' hands are primary vectors for pathogen transmission, highlighting the need for consistent adherence to hand hygiene practices (Singh, Roshan, & Barbara, 2023). Research conducted in various healthcare environments has demonstrated that interventions targeting knowledge and attitudes can reduce HAIs (Alhumaid, Al Mutair, Al Alawi, Alsuliman, Ahmed, Rabaan, & Al-Omari, 2021). Furthermore, fostering a safety culture and implementing systemic measures has proven effective in enhancing hand hygiene practices across diverse settings (Eka Kotebe General Hospital, 2022).

Hand hygiene is universally recognized as the most effective measure for preventing healthcare-associated infections (HAIs), which remain a significant global health challenge, WHO 2019). Despite its critical importance, compliance among healthcare workers (HCWs) is inconsistent worldwide, with adherence rates varying significantly across regions and healthcare settings. According to the World Health Organization (WHO 2023), global hand hygiene compliance averages around 40% without intervention, with intensive care units achieving slightly higher rates of 59.6% (WHO, 2022). In low- and middle-income countries (LMICs), compliance rates are even more concerning, with some studies reporting levels as low as 9.1%, contributing to disproportionately high rates of HAIs compared to high-income countries (WHO, 2023). These disparities highlight the urgent need for targeted interventions to improve hand hygiene practices in resource-constrained environments such as Zimbabwe.

Moreover, HAIs affect millions of patients annually, leading to increased morbidity, mortality, and financial burdens on healthcare systems (WHO 2024). For example, in LMICs, approximately 15 out of every 100 patients admitted to acute care facilities acquire at least one HAI during their hospital stay, compared to seven patients in high-income countries (WHO, 2022). These infections are often preventable through proper hand hygiene performed at critical moments during patient care. However, HCWs face numerous barriers to compliance, including inadequate training, lack of supplies such as soap and alcohol-based hand rubs, and understaffing (Environmental Health Insights, 2024). A study conducted at Eka Kotebe General Hospital in Ethiopia revealed a hand hygiene compliance rate of only 22.2%, with factors such as the presence of hand hygiene indication posters and training significantly influencing adherence (Environmental Health Insights, 2024).

In addition, mixed findings have emerged regarding HCWs' attitudes toward hand hygiene practices. While self-reported compliance rates often exceed 90%, observational studies frequently reveal much lower adherence levels. For instance, Bharara *et al.* (2020) observed that nurses demonstrated higher compliance rates compared to physicians and technicians in a hospital environment in India. However, actual adherence varied significantly depending on the clinical area as well as workload intensity. This discrepancy between knowledge and practice highlights behavioural barriers that must be addressed through targeted interventions aimed at fostering positive attitudes and sustainable practices (Bharara *et al.,* 2020).

In sub-Saharan Africa, HAIs remain a pressing public health concern due to infrastructural challenges and limited resources. A study conducted during the Ebola outbreak in Guinea

revealed that fear-driven compliance temporarily improved hand hygiene practices but declined post-crisis as vigilance waned (Roshan *et al*., 2020). Observations indicated lapses in critical moments such as glove changes and pre-procedure handwashing despite routine use of alcohol-based hand rubs during patient care (Feroz *et al.*, 2020). These findings highlight the need for sustained interventions that address both individual behaviours and systemic barriers.

Moreover, The COVID-19 pandemic further emphasized the importance of hand hygiene in infection control but exposed persistent challenges in maintaining compliance across diverse healthcare settings. A quality improvement report from Moscow found that implementing WHO multimodal strategies improved compliance rates from baseline levels but required continuous monitoring to sustain adherence (Müller et al., 2022). Similarly, a study conducted in Saudi Arabia demonstrated that empowering patients to remind HCWs about hand hygiene practices increased compliance by 15%, highlighting innovative approaches to addressing this issue (Ahmed Awaji & Al-Surimi, 2016).

In Zimbabwe, HAIs remain a significant issue due to inconsistent hand hygiene practices among HCWs. Research conducted at district hospitals identified barriers such as limited access to handwashing facilities and insufficient training on infection control protocols (Singh, Roshan, & Bharara, 2023). Anecdotal evidence from Baines Avenue Clinic in Harare suggests variability in HCWs' knowledge and attitudes toward hand hygiene. While some staff demonstrate awareness of its importance, adherence remains inconsistent due to high patient loads and infrastructural inadequacies. Local studies have shown that educational programs and access to alcohol-based hand rubs can improve compliance rates; however, these efforts often face challenges related to resource constraints and a lack of managerial support (Environmental Health Insights, 2024). Addressing these systemic issues is essential for enhancing hand hygiene practices and reducing HAIs at healthcare facilities like Baines Avenue Clinic.

1.3 Statement of the Problem

Healthcare-associated infections (HAIs) pose a considerable worldwide health concern, impacting millions annually and leading to heightened morbidity, mortality, and financial strain on healthcare systems. Although hand hygiene is the most effective strategy to prevent

healthcare-associated infections (HAIs), compliance among healthcare professionals is insufficient, with global adherence rates averaging approximately 40% without intervention and only achieving 59.6% in critical care environments (WHO, 2022). In low- and middle-income nations like Zimbabwe, compliance rates are significantly lower, resulting in elevated rates of healthcare-associated infections compared to high-income countries (WHO, 2023). The situation is exacerbated by resource limitations, insufficient training, and substandard infrastructure, with approximately fifty percent of worldwide healthcare facilities lacking fundamental hygiene services (WHO, 2023). The degree of non-compliance with hand hygiene measures among healthcare personnel at Baines Avenue Clinic in Harare, Zimbabwe, remains ambiguous, necessitating intervention to mitigate avoidable infections and enhance patient safety results. Moreover, inconsistent hand hygiene practices among healthcare workers exacerbate the risk of healthcare-associated infections, notwithstanding established guidelines. The study aims to examine the knowledge and attitudes of healthcare workers at Baines Avenue Clinic in Harare, Zimbabwe in 2025, concerning hand hygiene practices.

1.4 Purpose of the study

The purpose of this study is to assess the knowledge, attitudes and practices of healthcare workers at Baines Avenue Clinic in Harare, Zimbabwe, in 2025 regarding hand hygiene and to identify factors influencing compliance. It seeks to provide insights into existing gaps and barriers to effective hand hygiene, with the ultimate goal of informing strategies to improve adherence and reduce the risk of HAIs.

1.5 Research objectives

Main Objective

To determine health care worker's knowledge, attitudes and practices towards hand hygiene at Baines Avenue Clinic in Harare, Zimbabwe in 2025.

Specific Objectives

a) To assess the knowledge of health care workers towards hand hygiene at Baines Avenue Clinic in Harare, Zimbabwe in 2025.
b) To determine the attitudes of healthcare workers towards hand hygiene protocols at Baines Avenue Clinic, in Harare Zimbabwe in 2025.
c) To identify factors that influence hand hygiene protocols among healthcare workers at Baines Avenue Clinic in Harare Zimbabwe, in 2025.

1.6 Research questions

a) What is the level of knowledge about hand hygiene practices among health care workers at Baines Avenue Clinic?
b) What are the attitudes of healthcare workers towards hand hygiene protocols at Baines Avenue Clinic?
c) What are the factors that influence compliance with hand hygiene protocols among healthcare workers at Baines Avenue Clinic.

1.8 Significance of the Study

1.8.1 To Policy Makers

This study provides relevant data on the knowledge, attitudes, and compliance of HCW with hand hygiene practices, which are essential for reducing HAIs. These findings proffer evidence-based insights to inform the development as well as implementation of national infection prevention and control (IPC) policies. By addressing barriers such as resource constraints and training gaps, policymakers can create targeted interventions that improve hand hygiene compliance, thus enhancing patient safety and reducing the economic burden associated with HAIs.

1.8.2 To the Ministry of Health and Child Care

The Ministry of Health and Child Care can use the findings of this study to strengthen its IPC programs at healthcare facilities in the country. The study highlights key factors influencing hand hygiene compliance that can guide resource allocation and the design of key educational campaigns. Improved hand hygiene practices will not only reduce HAIs but also contribute to better health outcomes.

1.8.3 To Healthcare Workers

By identifying these gaps in knowledge and attitudes, the study can help design customised training programs that empower healthcare workers to adopt better practices. Enhanced compliance will protect both patients and healthcare workers from infections, fostering a safer working environment and improving professional satisfaction (Fouad & Eltaher, 2018).

1.8.4 To Bindura University of Science Education

This study contributes key research on hand hygiene practices and compliance in the Zimbabwean healthcare environment. It enriches the body of knowledge on IPC strategies in

low-resource environments such as Zimbabwe and serves as a reference point for future studies. In addition, the study strengthens the university's role in addressing public health challenges in line with education 5.0.

1.8.5 To Baines Avenue Clinic

This study is important to Baines Avenue Clinic as it provides insights into the knowledge and attitudes of healthcare workers. By identifying gaps in knowledge and barriers to compliance, the clinic can develop interventions to improve hand hygiene adherence among its staff. Enhanced compliance will lead to a reduction in HAIs, which are a major concern for patient safety and quality of care. In addition, improved hand hygiene practices can also enhance the clinic's reputation by demonstrating a commitment to patient safety and adherence to international standards, such as those set by the World Health Organization (WHO) (WHO, 2022).

1.8.6 To the Researcher

This study is useful to the researcher as it contributes to advancing the body of knowledge in the field of IPC, particularly in resource-constrained environments. By investigating the knowledge and attitudes about hand hygiene among healthcare workers at Baines Avenue Clinic, the researcher addresses an important gap in understanding barriers to effective hand hygiene practices. The findings will not only enhance the researcher’s expertise in public health and healthcare management but also align with global priorities set by the World Health Organization (WHO), such as improving hand hygiene practices to reduce HAIs (WHO, 2023).

1.9 Delimitation of the study

This study focuses on assessing the knowledge and attitudes of healthcare workers regarding hand hygiene practices rather than directly observing their compliance with protocols. By narrowing the scope to knowledge, attitudes and practices, the study avoids logistical challenges associated with real-time observation and promotes a manageable research process.

The study is conducted over six months, allowing sufficient time for data collection, analysis, and interpretation. This timeframe ensures that the research remains focused and feasible within the constraints of academic deadlines while providing a snapshot of hand hygiene

knowledge and attitudes during this specific period. However, findings may not fully capture long-term trends or changes in behaviour beyond this duration.

Furthermore, the study targets HCWs at Baines Avenue Clinic in Harare, Zimbabwe. This demographic delimitation allows for an in-depth exploration of hand hygiene practices within a specific healthcare environment. However, findings may not be generalizable to other healthcare facilities with differing resources or organizational cultures.

Moreover, the population includes nurses, physicians, and support staff involved in patient care at Baines Avenue Clinic. By including these groups, the study captures a detailed and comprehensive view of hand hygiene knowledge and attitudes across various roles within the healthcare system. However, it excludes other professionals who may indirectly influence hand hygiene practices, such as administrators and external consultants.

1.10 Limitations of the study

The study focuses on assessing the knowledge and attitudes of healthcare workers regarding hand hygiene practices, rather than directly observing their compliance with protocols. This limitation means that the findings may not fully reflect actual hand hygiene behaviour, as self-reported data can be subject to bias or inaccuracies. To address this limitation, future research could incorporate observational studies or audits of hand hygiene practices to complement the current findings and provide a more comprehensive understanding of compliance.

In addition, the study is conducted over a six-month period, which provides a limited timeframe to capture long-term trends in hand hygiene practices. This temporal constraint may affect the generalizability of the findings. To mitigate this limitation, the study will ensure rigorous data collection within the specified period and recommend follow-up studies over longer durations to validate and expand upon the results.

The study targets healthcare workers at Baines Avenue Clinic in Harare, Zimbabwe, limiting its scope to a single healthcare institution. This demographic focus restricts the generalisability of findings to other clinics or healthcare environment with differing organizational cultures. To address this limitation, the study will recommend comparative research across multiple healthcare institutions in Zimbabwe to identify broader trends and variations.

1.11. Chapter summary

This chapter provided the introduction to the study, background to the study, the statement of the problem, research objectives, and research questions. Furthermore, it outlined why the research is important to different stakeholders. The scope of the study was described under delimitations and the limitations of the study were also outlined. The following chapter focusses on literature review of the study.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter provides an overview of the literature related to hand hygiene practices among healthcare workers, focusing on the knowledge, attitudes, and compliance factors that influence adherence to hand hygiene protocols. Understanding these elements is crucial for developing effective strategies to improve hand hygiene compliance and reduce healthcare-associated infections (HAIs). The literature review will explore the concept of hand hygiene and the theoretical frameworks that underpin the study, examine existing research on hand hygiene practices, and discuss the significance of addressing barriers to compliance in the healthcare environment.

2.1 Key conceptual terms

2.1.1 The concept of hand hygiene

Hand hygiene refers to a health practice aimed at reducing the transmission of microorganisms, including antibiotic-resistant pathogens and HAIs. The concept encompasses practices such as handwashing with soap and water, antiseptic handwashing, alcohol-based hand rubbing, and surgical hand antisepsis (CDC, 2023). A working definition for this study is that hand hygiene refers to the process of cleaning hands using soap and water, antiseptic agents, or alcohol-based hand rubs to remove transient microorganisms and prevent the transmission of infections in healthcare environments, (WHO,2020).

2.1.2. Healthcare-Associated Infections (HAIs)

HAIs are defined as infections that are acquired by patients during their stay in healthcare facilities that were not present or incubating at the time of admission. Invasive surgeries, dirty equipment, or failures in infection control measures including poor hand hygiene could cause these diseases (WHO, 2022). Affecting millions of patients yearly, HAIs create notable worldwide health problem by raising morbidity, death, and strain on healthcare systems.

Limited resources and infrastructural issues in LMICs like Zimbabwe cause HAIs to be disproportionately more common (Environmental Health Insights, 2024). By lowering microbial transmission between HCWs and patients, efficient hand hygiene techniques are acknowledged as the most powerful tool for avoiding HAIs (Roshan et al., 2020).

2.1.3 Knowledge

Knowledge is the healthcare professionals' awareness of the need of hand hygiene in avoiding HAIs as well as their knowledge of suggested techniques and policies. Empirical studies show that HCWs still lack knowledge because of inadequate training and restricted access to instructional materials (Environmental Health Insights, 2024; CDC, 2023). For instance, HCWs could not know when hand hygiene is most important or misinterpret the effectiveness of alcohol-based hand rubs compared to soap and water.

2.1.4 Attitudes

Attitudes are defined as healthcare professionals' views and convictions on the relevance of hand hygiene procedures in their regular activities. While negative attitudes like seeing hand hygiene as time-consuming can impede compliance, positive attitudes are linked to greater rates of compliance. Researches show that HCWs' views on infection prevention actions are significantly influenced by workplace culture. For instance, hospitals with strong leadership backing for infection control usually encourage more favourable staff attitudes (Bharara et al., 2020; WHO Regional Office for Africa, 2022). Attitudes towards protocol compliance are also shaped by behavioural impediments such as complacency or unwillingness to change.

2.1.5 Practices

Practices are defined as the actions taken to clean hands to remove harmful microorganisms and prevent transmission of these, protecting the patient and health care worker. These practices include antiseptic hand rubs (alcohol- based sanitizers), handwashing with soap and water, surgical hand antisepsis, employing the correct technique during the 5 moments of hand hygiene with jewellery free hands to improve hand hygiene effectiveness, (WHO,2020). Researches show that washing hands with soap and water is effective in removing microorganisms in health care environments (Rose *et al*.,2023)

FIG 1 CONCEPTUAL FRAMEWORK

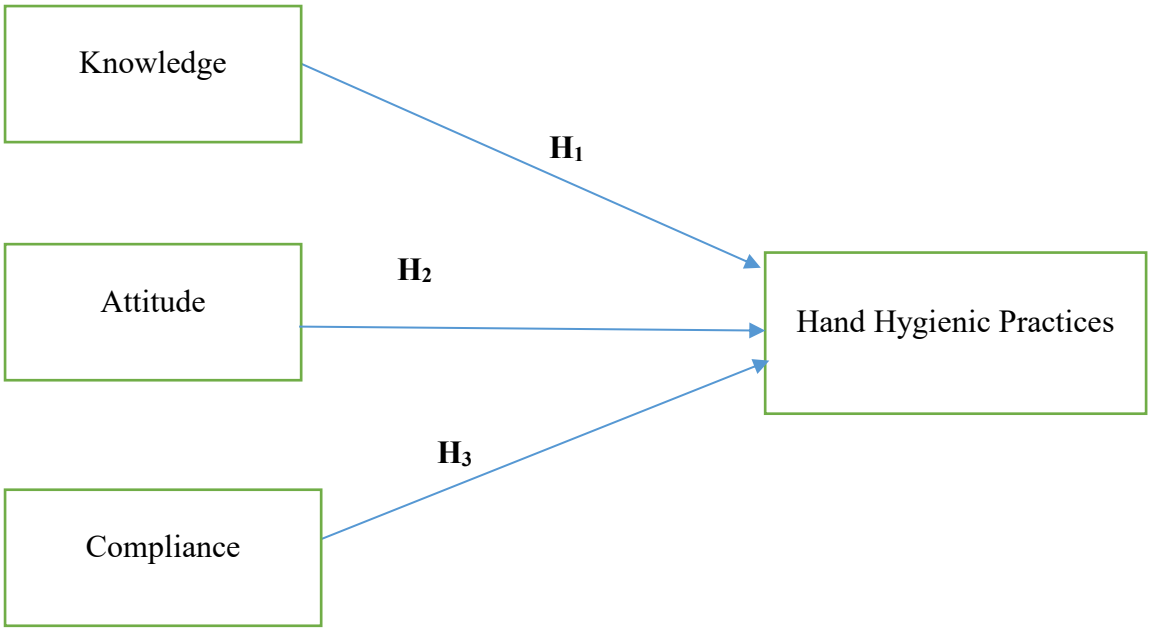

Figure 1: Proposed Conceptual Framework, Source (Researcher).

2.2. THEORETICAL FRAMEWORKS

2.2.1 Health Belief Model (HBM)

The Health Belief Model (HBM), developed by Rosenstock, is a psychological framework that elucidates health behaviours through individuals' views of susceptibility, severity, advantages, and barriers associated with a certain action. In the realm of hand hygiene, the Health Belief Model (HBM) is important as it clarifies how healthcare professionals assess the risks of healthcare-associated infections (HAIs) and the efficacy of hand hygiene in their prevention. A research by Bawean *et al*. (2024) revealed that perceived vulnerability to HAIs significantly affected hand hygiene compliance among nurses, with those recognising larger risks exhibiting greater adherence to protocols.

The approach highlights the significance of cues to action, including educational interventions or reminders, in facilitating behaviour modification. Elmelegy *et al* (2018) conducted a study demonstrating that teaching programs based on the Health Belief Model enhanced hand hygiene compliance among critical care unit nurses by tackling perceived obstacles and emphasising the advantages of appropriate hand hygiene. By concentrating on

these elements, the HBM offers a systematic framework for developing interventions aimed at certain beliefs and perceptions that affect compliance. The Health Belief Model corresponds with the study's aim of evaluating healthcare workers' knowledge and attitudes around hand cleanliness. The study can discover gaps in understanding that impede compliance by analysing perceptions of susceptibility and severity. Furthermore, tackling perceived obstacles via training sessions guided by the Health Belief Model can enhance adherence rates at Baines Avenue Clinic.

2.2.2 Theory of Planned Behaviour (TPB)

Ajzen's Theory of Planned Behaviour (TPB) posits that behaviour is influenced by three key factors: attitudes toward the behaviour, subjective norms, and perceived behavioural control. In the context of hand hygiene, TPB explains how healthcare workers' attitudes toward hand hygiene practices, workplace norms, and their confidence in performing these actions impact compliance. For instance, Pittet *et al*. (2016) highlighted that hand hygiene compliance rates were higher among healthcare workers who felt social pressure from colleagues or supervisors to adhere to protocols.

Subjective norms play a critical role in shaping compliance behaviours. Healthcare workers are more likely to follow hand hygiene protocols if they perceive that their peers value and practice them consistently. Similarly, perceived behavioural control, such as access to resources like soap or alcohol-based sanitizers, can either facilitate or hinder adherence. Studies have shown that improving infrastructure and providing adequate supplies significantly enhance compliance rates (Karadag, Iseri, Yildirim, & Etikan, 2016). TPB supports the study's focus on evaluating attitudes and identifying factors influencing compliance at Baines Avenue Clinic. By exploring workplace norms and resource availability, the study can recommend strategies for fostering a positive organizational culture that promotes adherence to hand hygiene practices.

2.2.3 Social Cognitive Theory (SCT)

Bandura's Social Cognitive Theory highlights the significance of observational learning, reinforcement, and self-efficacy in influencing behaviour (Bandura, 2013). In healthcare settings, SCT posits that healthcare professionals acquire hand hygiene practices through the observation of colleagues and superiors, and are incentivised by positive reinforcement for compliance with standards. A webinar by Homan (2016) emphasised that fostering a

supportive atmosphere and delivering real-time feedback can markedly enhance adherence to hand hygiene measures.

Self-efficacy is an important element of SCT, denoting an individual's conviction in their capacity to execute a behaviour effectively. Healthcare professionals exhibiting elevated self-efficacy are more inclined to adhere to hand hygiene protocols, particularly under adverse circumstances such as excessive workloads or limited resources (Bandura, 2013). Furthermore, organisational support, including training initiatives and evident leadership commitment, bolsters positive behaviours and promotes ongoing compliance. SCT corresponds with the study's objective of finding factors that affect compliance at Baines Avenue Clinic. The study can provide solutions for boosting self-efficacy and ensuring consistent adherence to hand hygiene standards by analysing observational learning and reinforcement mechanisms within the clinic's organisational culture.

2.3 Empirical Literature Review

Jamera (2019) conducted a study to evaluate hand hygiene behaviours among healthcare professionals in Mutoko and Mudzi areas of Zimbabwe. The study employed direct observational techniques and structured interviews to target healthcare workers across diverse healthcare settings. The findings indicated a non-compliance rate of 29.3%, attributed to obstacles including resource deficiencies, inadequate manpower, and substandard infrastructure. This study offers significant insights into compliance in Zimbabwe; nevertheless, it does not investigate the knowledge and attitudes of healthcare workers, which are essential for comprehending the underlying variables affecting compliance, a primary emphasis of the current research.

Furthermore, Burke and Dworkin (2018) executed a cluster-randomized controlled trial to assess the effects of two treatments aimed at primary carers in Harare, Zimbabwe. The study population comprised carers directly targeted by campaigns and those indirectly affected via their children. The results indicated an increase in handwashing frequency at important times from 5% to 28%, although no substantial enhancements in microbiological handwashing efficacy were seen. This study emphasises household handwashing behaviours instead of those practiced in clinical settings or by healthcare workers, resulting in a deficiency in comprehending HCWs' adherence in healthcare situations.

Moreover, Khumalo *et al*. (2024) carried out a qualitative study in eleven regions of Zimbabwe to ascertain the obstacles and enablers of hand hygiene during the COVID-19 epidemic. The demographic comprised health workers, local health workers, church leaders, traditional healers, educators, youth leaders, and the general populace. Principal obstacles encompassed deficiencies in understanding, insufficient conviction regarding hand cleanliness, restricted access to infrastructure, and sociocultural views. This study examines pandemic-specific factors influencing hand hygiene in the general public, as opposed to standard procedures among healthcare workers in a medical environment.

Hoque *et al*. (2024) utilised Wash'Em methods for program design to perform a process evaluation aimed at developing handwashing interventions for people affected by crises in Zimbabwe. The study sample comprised displaced individuals residing in temporary shelters. The results underscored the necessity of customising interventions to meet unique needs while also revealing hurdles, including cultural obstacles and resource constraints. This study examines behavioural treatments for vulnerable individuals but does not investigate compliance variables among healthcare workers or healthcare environments.

In addition, Alemayehu *et al.* (2024) performed an observational research analysing compliance rates among ICU nurses at Eka Kotebe General Hospital over a three-month period. The sample comprised 40 ICU nurses. The findings indicated a compliance rate of merely 22%, hindered by obstacles including excessive workloads and insufficient access to sanitisers. This study is confined to ICU settings and does not examine larger healthcare contexts or factors such as knowledge and attitudes that influence compliance, which is the subject of the current research. Additionally, Al-Tawfiq (2024) examined obstacles to hand hygiene adherence among physicians in many institutions by survey methodologies aimed at physicians from several specialities (n=300). The results indicated time limits, insufficient motivation, and skin discomfort from sanitisers as primary obstacles. Gap: This study concentrates solely on physicians, neglecting multi-disciplinary viewpoints and the Zimbabwean circumstances pertinent to this research.

Moreover, Fouad (2018) performed a descriptive cross-sectional study evaluating nurses' knowledge and attitudes towards hand hygiene practices through structured questionnaires. The sample comprised 150 nurses employed in public hospitals. Findings revealed that although the majority of nurses recognised WHO criteria, only fifty percent complied due to resource deficiencies and cultural challenges within the workplace. The study omits

additional healthcare professionals and relevant Zimbabwean circumstances crucial to this investigation.

Mara and Evans (2018) investigated hand hygiene behaviours among healthcare workers at two district hospitals through surveys and focus group discussions involving nurses, physicians, and support personnel (n=200). The findings indicated suboptimal compliance rates attributable to insufficient training and infrastructural deficiencies. The study, although pertinent to sub-Saharan Africa, does not examine Zimbabwean healthcare environment or emphasise the knowledge and attitudes essential for enhancing compliance.

2.4. Chapter summary

This chapter provides a comprehensive overview of the theoretical framework underpinning the study, focusing on the Health Belief Model, the Theory of Planned Behaviour, and Social Cognitive Theory. These frameworks offer insights into how knowledge, attitudes, practices and environmental factors influencing hand hygiene compliance among healthcare workers. The chapter also reviewed the study objectives. A thorough literature review was conducted to explore recent studies related to these objectives, highlighting gaps in current research, particularly in low-resource settings like Zimbabwe. In addition, empirical studies from different contexts were examined to understand the complexities of hand hygiene compliance. These studies highlighted the importance of education, workplace culture, and infrastructural support in enhancing adherence to hand hygiene protocols. The literature also identified significant knowledge gaps, including inadequate training and negative attitudes, which hinder compliance. The chapter concludes by highlighting the need for context-specific interventions tailored to address these gaps in Zimbabwean healthcare environments. The next chapter will focus on the research methodology adopted for this study, detailing the research design, research instruments, data collection methods and procedures, analytical approaches used to achieve the study objectives.

CHAPTER 3: METHODOLOGY

3.0 RESAERCH METHODOLOGY

The plan and the approach for collecting and analysing data aiming to answer research questions with rigour and clarity, John Creswell (2018).

This study adopted an interpretivist research philosophy, which emphasizes understanding and interpreting the meanings that individuals assign to their experiences and behaviours. Interpretivism is particularly suitable for exploring complex social phenomena like healthcare workers' knowledge, attitudes, and compliance with hand hygiene protocols, as it allows for an in-depth examination of subjective experiences and contextual factors (Creswell & Creswell, 2018). By focusing on the interpretive nature of human behaviour, this philosophy enabled the researcher to uncover nuanced insights into why healthcare workers adhere to or deviate from hand hygiene practices.

The justification for adopting an interpretivist philosophy lies in its ability to capture the richness and complexity of human experiences. Unlike positivist approaches that seek to quantify behaviour, interpretivism delves into the meanings and interpretations that individuals give to their actions, providing a deeper understanding of the social and cultural contexts influencing hand hygiene compliance (Bryman, 2016). This is important for studies conducted in diverse healthcare environments like Zimbabwe, where cultural and organizational factors significantly impact behaviour.

3.1 Research Design

Burns and Groove (2018) defines research design as a blueprint for conducting a study with maximum control over factors that may interfere with validity of findings.

This study employed a qualitative case study research design, focusing on in-depth interviews and focus groups to gather rich, contextual data about healthcare workers' experiences with hand hygiene practices. A phenomenological approach guided this study focussing on understanding the lived experiences of health care workers regarding hand hygiene practices. Qualitative designs are ideal for interpretivist studies as they allow for the exploration of subjective meanings and interpretations (Creswell,2018; Lumen learning,2016). By using this

design, the study uncovered themes and patterns related to knowledge, attitudes, practices and compliance factors that were not be apparent through quantitative methods.

This design is justified because it aligned with the interpretivist goal of understanding human behaviour in context. Qualitative methods enable researchers to engage in detailed discussions with participants, capturing the nuances of their experiences and the meanings they assign to their actions (Creswell & Plano Clark, 2017). This approach was effective for exploring complex issues like hand hygiene compliance, where individual perceptions and organizational culture play important roles.

3.1.1 Research Strategy

The research strategy involved a case study approach, focusing on Baines Avenue Clinic in Harare, Zimbabwe. Case studies are ideal for interpretivist research as they allow for an in-depth examination of a specific context, enabling the researcher to explore the unique factors influencing hand hygiene practices within that setting (Yin, 2018). By concentrating on one clinic, the study focussed deeply into the cultural, social, and organizational factors shaping healthcare workers' behaviours. This strategy was justified because it enabled the researcher to explore the complexities of hand hygiene compliance within a real-world setting. Unlike broader surveys that might overlook contextual nuances, a case study provided detailed insights into how local factors influence behaviour (Creswell & Creswell, 2018). This approach was effective for generating actionable recommendations tailored to the specific needs of Baines Avenue Clinic.

3.1.2 Target Population

According to Pilot and Beck (2024), target population is the entire group of individuals who meet the specific inclusion criteria relevant to the research question that a researcher intends to study and to which the research findings are meant to be generalized.

Healthcare personnel at Baines Avenue Clinic directly engaged in patient care made up the target population. Included were doctors, nurses, and support personnel. These categories were chosen for their important part in infection prevention by means of hand hygiene practices. Focussing on this group was reasonable since every group added particular value to hand hygiene compliance. For instance, while support personnel manage environmental cleanliness both essential aspects of infection prevention and control, nurses usually have the

greatest patient contact rates (WHO, 2022). Including all these categories guaranteed that the research accurately and thoroughly depicted hand hygiene procedures inside the clinic.

3.1.3 Sampling Methodology

Sampling involves selecting participants purposefully to best address research questions, Creswell and Creswell (2022).

This study employed purposive sampling to select participants who were most relevant to the research objectives. Nurses, physicians, and support staff who have been employed at Baines Avenue Clinic for over a year were included in this study. The sampling approach was justified because it allowed the researcher to focus on individuals who had experience and were directly involved in hand hygiene practices. This method is particularly effective when studying detailed behaviours or phenomena within a defined group (Patton, 2015). By targeting experienced healthcare workers, the study ensured that participants provided key insights into knowledge gaps.

3.1.4 Sample Size

A sample size of 20 participants was used for this study: 8 nurses, 6 physicians, and 6 support staff members. This size was determined based on feasibility considerations and recommendations from similar qualitative case studies in healthcare environments. This sample size was justified because it balanced depth with breadth. While smaller samples allow for more detailed qualitative analysis during interviews, including a diverse range of participants ensured that findings are a representative of different roles within the clinic as recommended by Creswell & Creswell (2018). In a 2022 systematic review by Hennink and Kaiser, saturation was generally reached with 7-17 interviews and 4-8 focus groups when a deeper understanding of the themes was achieved.

3.2 RESEARCH INSTRUMENTS

Pilot and Hunger (2018), defined research instruments as valid, reliable and appropriate tools which are used to systematically collect, measure and analyse data relevant to the research questions.

Key informant interview guide and focus group discussion guide were the proposed data collection tools. Included in these tools are the responded background indicating gender and work experience, open-ended questions relating to study objectives and questions on knowledge, attitudes and practices towards hand hygiene, factors influencing hand hygiene

compliance and recommendations for improving hand hygiene. Open-ended questions were employed as they were useful in fostering conversation, gaining deeper insights and encouraging critical thinking.

3.3 DATA COLLECTION PROCEDURES

Semi-structured interviews were used to collect in-depth data about healthcare workers' experiences and perceptions regarding hand hygiene practices. This method was particularly effective for capturing rich, contextual insights into participants' subjective experiences and interpretations. Interviews allow participants to share their personal stories and meanings in a flexible and open-ended manner, which is essential for understanding the nuances of hand hygiene compliance (Creswell & Creswell, 2018). For instance, a recent study by Smith *et al.* (2022) demonstrated that semi-structured interviews provided valuable insights into healthcare workers' perceptions of barriers to hand hygiene adherence in a hospital setting.

The justification for using semi-structured interviews lies in their ability to provide detailed, qualitative data that align with the interpretivist philosophy. This approach enabled participants to express their thoughts and feelings freely, offering a deeper understanding of the meanings they assigned to their behaviours (Braun & Clarke, 2020). Interviews also allow for follow-up questions and probes, which may clarify participants' responses and uncover additional themes that might not be apparent through other methods (Kvale & Brinkmann, 2015). This flexibility is crucial for exploring complex issues like hand hygiene compliance, where individual perceptions and organizational culture play significant roles.

In addition, focus groups were utilised to collect data, facilitating discussions among healthcare professionals regarding their experiences and perspectives of hand hygiene procedures. This approach is effective for gathering collective thoughts and examining the interactions among participants' viewpoints (Krueger & Casey, 2015). Focus groups facilitated useful discussions among members, enabling them to express their perspectives and considered others' viewpoints, thereby uncovering common themes and patterns associated with hand hygiene compliance (Creswell & Plano Clark, 2017). A study by Johnson *et al*. (2020) employed focus groups to ascertain prevalent obstacles to hand hygiene compliance among healthcare professionals in a clinical environment.

Interviews were conducted face to face and by telephone where the participants were not around and group discussions were carried out in a selected quiet environment for selected consented participants. All respondents for interviews and focus group discussion were

assigned a numerical participant identity code to ensure privacy and confidentiality. Interviews and group discussions were carried out for 10 to 15 minutes.

Review of secondary data

This study incorporated secondary data to enhance the breadth and depth of the analysis. Secondary data refers to information that was originally collected for purposes other than the current research objectives, such as clinical records, government reports, or healthcare surveys (PubMed, 2017). The use of secondary data is valuable in healthcare research as it provides access to large datasets that are often representative and longitudinal, reducing the time and cost associated with primary data collection (PMC, 2021).

The secondary data was sourced from publicly available healthcare reports, infection control guidelines from the World Health Organization (WHO), and clinical records from Baines Avenue Clinic. These sources provided important insights into existing hand hygiene compliance rates, healthcare-associated infection trends, and institutional protocols. For example, WHO guidelines offer standardized benchmarks for evaluating hand hygiene practices globally (WHO, 2022). Moreover, clinical records from the clinic can provide historical data on compliance rates and infection outcomes, enabling a retrospective analysis of trends over time.

3.4 DATA ANALYSIS

Pilot and Beck (2017), defined data analysis as the process of systematically applying logical techniques to describe and illustrate, condense, recap and evaluate data.

Semi-structured interviews were analysed using Braun and Clarke's (2022) six-phase approach to thematic analysis, which is widely regarded as a vigorous method for qualitative data analysis. The process begins with familiarization, where the researcher immerses themselves in the interview transcripts by reading and re-reading the data to identify preliminary ideas. This is followed by generating initial codes, which involves systematically tagging meaningful segments of text related to the study's objectives, such as knowledge gaps, attitudes, and compliance factors. Once coded, the data is organized into potential themes that capture recurring patterns or concepts across participants' responses.

The justification for applying thematic analysis to interview data lies in its ability to uncover rich, nuanced insights into participants' subjective experiences. Semi-structured interviews often yield detailed narratives that require a systematic approach to identify underlying

meanings and connections (Lochmiller, 2021). By focusing on individual responses, thematic analysis enabled researchers to explore personal perceptions and interpretations of hand hygiene practices, offering a deeper understanding of healthcare workers' behaviours in a given context. Furthermore, Braun and Clarke's approach ensures rigor and transparency by providing a clear framework for analysing qualitative data (Braun & Clarke, 2020).

Focus group data was also analysed using thematic analysis but with specific attention to group dynamics and shared experiences. While Braun and Clarke's six-phase method remained applicable, additional emphasis was placed on identifying themes that emerged from interactions between participants. For example, patterns of agreement or disagreement within the group were coded to understand collective attitudes toward hand hygiene practices. The analysis also considered how participants influenced each other's perspectives during discussions, revealing social norms and organizational culture factors that impacted compliance to best practices.

Thematic analysis is predominantly suited for focus group data because it captures both individual viewpoints and collective insights (ATLAS.ti, 2024). Unlike interviews that focus solely on personal narratives, focus groups provide a platform for participants to engage with each other's ideas, generating richer data about shared experiences and group dynamics (Lochmiller, 2021). This method allowed the researcher to uncover themes that reflect broader cultural or organizational influences on hand hygiene compliance. For instance, recurring discussions about resource availability or peer pressure can highlight systemic barriers affecting adherence (ATLAS.ti, 2024).

After analysing interviews and focus groups separately, the findings were integrated to provide a comprehensive understanding of healthcare workers' knowledge, attitudes, and compliance factors. Themes identified from individual interviews were compared with those emerging from focus groups to identify overlaps and discrepancies. This triangulation ensured that the study captured both personal experiences and collective perspectives, enhancing the validity of the findings (Braun & Clarke, 2020).

Thematic analysis is justified as it aligns with the interpretivist philosophy adopted in this study. It allows researchers to delve beyond surface-level information by systematically uncovering patterns and meanings embedded in qualitative data (Lochmiller, 2021). Moreover, thematic analysis is flexible enough to accommodate diverse data sources such as

the semi-structured interviews and focus groups, while maintaining methodological rigor (Braun & Clarke, 2020).

Validity and Reliability

To ensure validity and reliability of the study, member checking and peer debriefing was employed. Member checking involves sharing findings with participants to confirm accuracy, while peer debriefing involves discussing findings with colleagues to enhance credibility. These measures are justified because they enhance the trustworthiness of qualitative findings. Member checking ensures that interpretations align with participants' experiences, while peer debriefing provides an external perspective on the analysis process (Creswell & Creswell, 2018). This approach strengthens the validity and reliability of the study's conclusions.

Ethical Consideration

In the conduct of this study, ethical approval was obtained from Bindura University Research Board as well as Baines Avenues Clinic before commencing data collection. This step was crucial for ensuring that the study adhered to ethical standards and guidelines for research involving human participants. Participants provided informed consent after being thoroughly briefed about the study's objectives, procedures, potential risks, and benefits. This process involved providing participants with detailed information about the study, including how data was to be collected, analysed, and stored, as well as their rights to withdraw from the study at any time without punishment as recommended by Resnik *et al*. (2020). To maintain confidentiality, all participant responses were anonymised. This involved removing any identifying information from transcripts and using pseudonyms or codes to protect participants' identities. Anonymization ensures that participants' privacy is respected and that their responses cannot be traced back to them, reducing potential risks or consequences associated with participation as advised by Resnik *et al*. (2020).

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

This chapter presents data, analyses, and discusses the results from semi-structured interviews conducted with healthcare workers at Baines Avenue Clinic. Fourteen of the twenty Respondents who were invited for the study responded. The responses were thematically analysed based on the study's objectives. Each objective is unpacked through the sub-themes, that emerged from the study and these are supported by direct quotations from respondents (coded R1 to R14), interpreted and discussed in light of existing literature.

4.2 Response Rate

Of 20 healthcare workers, 14 took part in the interviews, giving the survey a 70% response rate. Particularly in phenomenological studies where rich, in-depth data is given priority above large sample sizes, this degree of involvement is seen sufficient for qualitative research (Creswell & Creswell, 2018). A 70% response rate shows a great degree of involvement and relevance of the subject to the target audience. Patton (2015) claims that qualitative rigour is more dependent on the quality and depth of answers than statistical representativeness. Furthermore, the variety in years of expertise among participants improved the depth and validity of the findings collected. This strong response rate also aligns with studies like Johnson *et al*. (2020), where a similar rate yielded comprehensive thematic saturation in exploring healthcare behaviour.

4.3 Demographic profile of respondents

Out of the 20 selected Respondents, 14 healthcare workers took part in the interviews, yielding a 70% participation rate.

4.3.1 Gender of respondents

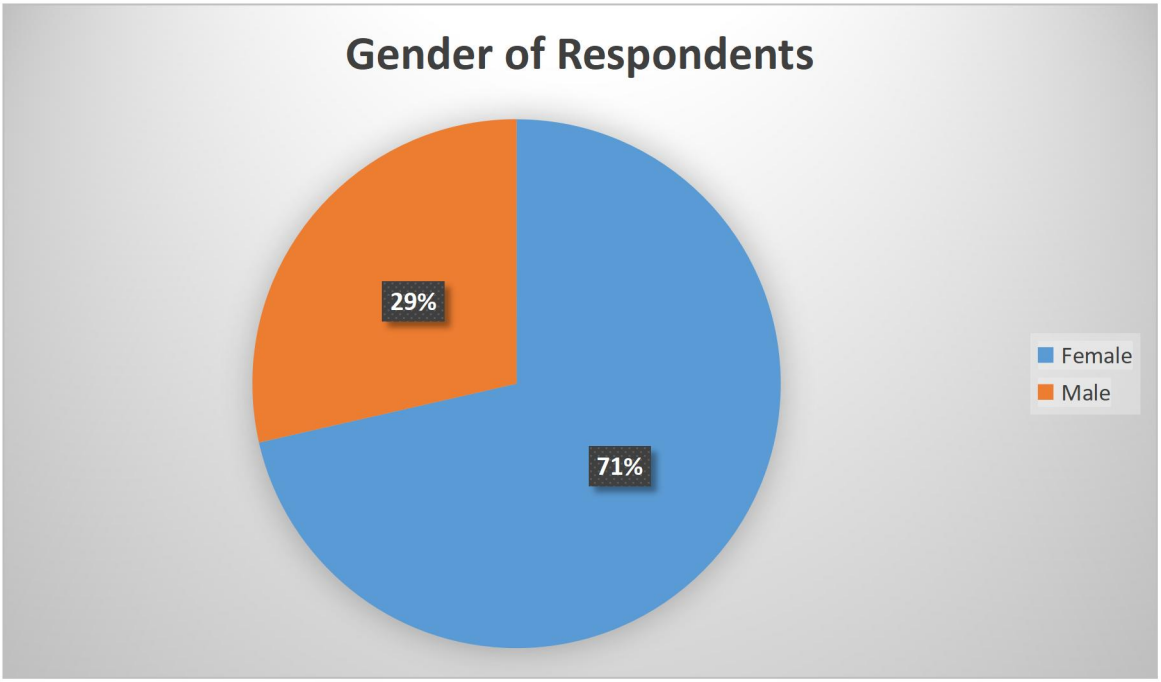

Figure 4.1: Gender of respondents Source (Primary data, 2025)

With respect to the gender of respondents as indicated in figure 4.1 above, 10 were female and 4 were male respondents. This indicated a female-dominated workforce at Baines Avenue Clinic.

4.3.2 Work experience of respondents

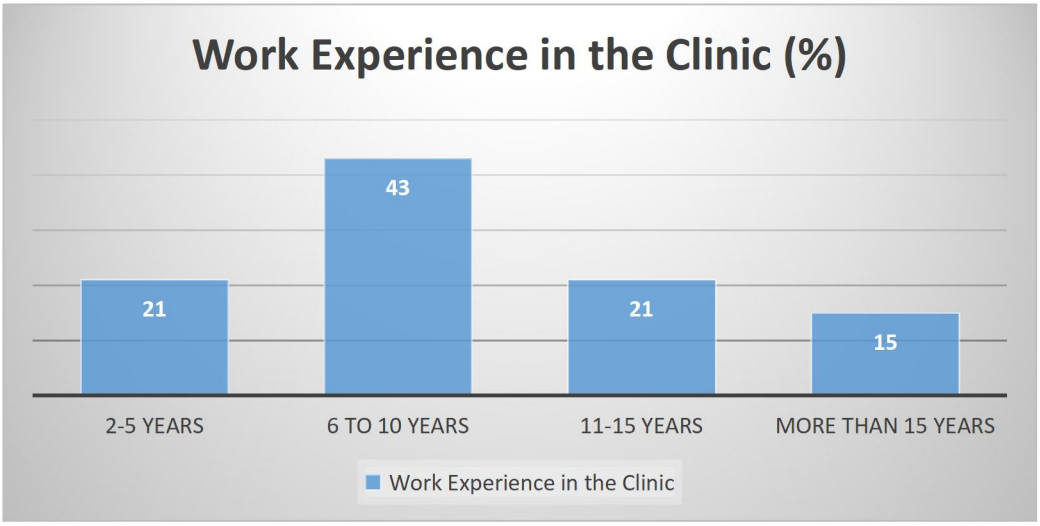

Figure 4.2: Work experience of respondents Source (Primary data, 2025)

The respondents' length of service within the clinic ranged across various experience levels as shown in figure 4.2 above. 21% had worked at the clinic for 2 to 5 years, 43% for 6 to 10 years, another 21% for 11 to 15 years, and 15% for more than 15 years. This range in work experience within the institution adds substantial depth to the study, as it includes both relatively new and long-serving HCWs. Such diversity improves the validity and credibility of the results, as advised by Creswell and Creswell (2018), who contend that including different points of view in qualitative research boosts the richness and dependability of the data. Patton (2015) also observes that having Respondents with diverse degrees of expertise helps to find common patterns spanning several knowledge sets and professional settings. The demographic variety in this study therefore enhances the transferability of the findings and helps to provide a more complex knowledge of hand hygiene behaviours in the clinic setting.

4.4 The level of knowledge of hand hygiene practices among healthcare workers at Baines Avenue Clinic

4.4.1 Understanding hand hygiene as an infection control measure

Respondents generally demonstrated a strong foundational understanding of hand hygiene. R1 had to say that *"making sure hands are clean always prevents spread of infection from one patient to another."* Similarly, R3 highlighted that *"hand hygiene involves a process of cleaning hands with disinfectants to prevent spread of infections."* R5 added by stating that *"hand hygiene is part of infection control and must be done using water, soap, or sanitizers before and after patient contact."*

These responses suggest that HCWs at Baines Avenue Clinic recognize hand hygiene as an essential barrier against microbial transmission. The study finding aligns with WHO guidelines (2022), which identify hand hygiene as the foundation of infection prevention. The emphasis on preventing transmission echoes findings by Roshan *et al*. (2020), which established that hand hygiene is key in reducing healthcare-associated infections (HAIs).

4.4.2 Awareness of critical moments for hand hygiene

The data reflect a clear awareness among HCWs of the WHO's Five Moments for Hand Hygiene. R4 stated that

"the five moments for hand hygiene include before touching a patient, before clean/aseptic procedures, after body fluid exposure, after touching a patient, and after touching the patient's surroundings."

R6 supported this by saying that

> *"I always wash my hands before and after any procedure, especially when handling wounds or dressings."*

Likewise, R8 mentioned that

> *"hand hygiene should be practiced before contact, after exposure, and before moving to another patient to avoid cross-infection."*

This degree of awareness guarantees that essential chances for infection prevention are not ignored. It backs results from Frontiers in Public Health (2024), which show that understanding of hand hygiene moments relates to greater compliance rates.

4.4.3 Familiarity with hand hygiene methods and materials

Majority of the respondents indicated that they are familiar with hand hygiene methods and resources that are used. R2 emphasized that, *"I use soap and water mostly, but also alcohol-based rubs when needed."* In addition, R7 noted that *"scrubbing is essential, especially before aseptic tasks or surgery."* Also R10 remarked that *"we rely on sanitizers, but water and soap are used when hands are visibly soiled."*

The data shows a solid awareness of the several techniques and the suitable environments for their application. It also corresponds with CDC (2023) guidelines and WHO (2022) recommendations, which stress that while alcohol-based hand sanitizers are useful in most clinical situations, soap and water should be used when hands are obviously filthy.

4.5 The attitudes of healthcare workers towards hand hygiene protocols

4.5.1 Positive attitude of the role of hand hygienic practices

The respondents indicated a positive perception of the role of hand hygienic practices. R1 indicated that *"it is my professional role to prevent infections because patient care revolves*

around us." R11 added that *"without hand hygiene, we compromise both patient and staff safety."* In the same context, R6 observed that *"hand hygiene is not just a policy but a personal commitment to protect everyone in the ward."*

These responses show a considerable internalisation of professional duty among HCWs. Their views fit the Theory of Planned Behaviour, which holds that positive attitudes greatly affect compliance (Pittet *et al*., 2016). This also reinforces Alhumaid *et al.* (2021), who underlined the importance of attitude as a powerful predictor of behaviour preventing infections.

4.5.2 Motivation through team culture and patient safety

R2 said, "*Knowing my behaviours have an impact on patients drives me on.*" R8 said, "*My co-workers and I always motivate one another to wash hands.*" R13 also said, "*reminders and collaboration help us stay compliant.*"

The theme highlights the social aspects of compliance, particularly the function of group responsibility and cooperation. It fits with the Social Cognitive Theory, which emphasises the importance of observational learning and peer reinforcement (Bandura, 2013).

4.5.3 Management support

It emerged from the study that there is positive management support. R3 noted that *"our Infection Control Officer often visits and gives feedback."* R4 stressed that *"management provides both the materials and training we need."* R12 mentioned that *"the leadership here genuinely cares about hygiene practices and supports us with policies and follow-ups."*

These comments imply that attitudes towards compliance in line with hygienic norms are significantly shaped by leadership. Effective leadership support associates with stronger hand hygiene behaviours (Europe PMC, 2015), mostly when accountability and feedback mechanisms are in place.

4.6 The factors influencing compliance with hand hygiene protocols among healthcare workers

4.6.1 Resources availability

Many of those who answered underlined how much their compliance was shaped by regular access to resources and appropriate training. While R3 said that "*refresher courses keep us attentive,"* R10 said that "*we never run out of soap or sanitizer."* R7 said, "*Every sanitizer in the ward's assist a lot."* These answers show that if necessary supplies and information are easily accessible, compliance is more possible and sustainable.

These findings support the Alhumaid *et al.* (2021) findings that compliance with hand hygiene protocols is directly affected by the availability of infrastructure and training. Regular training and practical tools help to maintain the relevance of hygiene and build confidence.

The findings imply that measures meant to increase compliance should give continual professional development top priority together with infrastructural uniformity. Clinics have to make sure no ward is under-equipped and that education is not a one-time event but an ongoing process adjusting to evolving knowledge and difficulties.

4.6.2 Workload and physical discomfort as barriers

Many of the respondents said that the practical reality of their workplace compromises hand hygiene routines. R2 said that "*handwashing can be skipped to save time during crises,*" implying that in high-stress situations, quick clinical response takes priority over infection control procedures. This emphasises how, even if people are aware of basic practices, the need to deliver treatment could unavoidably put hand hygiene to the background. R4 bemoaned the "*skin dryness and irritation caused by regular use of sanitiser,"* highlighting the physical price of using alcohol-based solutions all day long. R9 said, "*cognitive overload and weariness cause us to skip proper hygiene procedures on hectic shifts sometimes,*" adding that such gaps in compliance result from rushing and forgetting.

These responses show that although healthcare professionals are usually knowledgeable and driven, the work environment sometimes limits their capacity to continuously follow procedures. High patient loads, emergency situations, and physical side effects of hygiene products create a conflict between desirable practices and practical measures. This finding echoes results from a qualitative study carried out in NICU by Birgand *et al.* (2019), who identified time pressure and skin-related discomfort as prevalent barriers to hand hygiene adherence across healthcare environments. Fouad and Eltaher (2018) further argue that such physical barriers are under-recognized yet have a tangible influence on daily behaviour.

Addressing these issues requires more than awareness campaigns—it calls for strategic interventions, such as optimizing staff-to-patient ratios to alleviate pressure during peak periods, redesigning workflows to naturally accommodate hygiene practices, and providing dermatologically friendly sanitizing options. By reducing the physical and logistical burdens on staff, healthcare organisations can create an environment that better supports consistent and effective hand hygiene behaviour.

4.6.3 Infrastructure and environmental limitations

Environmental factors also turned out to be a hindrance to compliance. R11 found that "*some sinks are too far,*" *while R6 said "hand messages are not always well situated in all wards*." "*We occasionally miss visual cues like posters*," R5 noted. Though they may appear little, these constraints can interfere with work and undermine regular hygiene habits. These difficulties support WHO recommendations (2019), which underline the need of having effective, accessible hand hygiene infrastructure right at the point of treatment. Even well-meaning employees could miss necessary actions when fundamental items like sinks and dispensers are either broken or inconveniently placed. Jamera (2019) also noted comparable problems in Zimbabwean environments, indicating how such logistical lapses can undermine compliance. Healthcare institutions should do frequent infrastructure audits and guarantee best placement of hygiene stations and reminders to help to offset these issues. Dealing with environmental obstacles is not only about convenience; it actually influences results of infection prevention.

4.7 Strategies to improve compliance

4.7.1 Continuous training and capacity building

Many people underlined lifelong learning as essential as a strategy to improve compliance. R2 submitted that *"frequent workshops would keep everyone alert,"* while R14 recommended *"quarterly refresher sessions to improve consistency."* R5 noted that *"practical demonstrations of proper techniques are helpful."* These insights suggest that healthcare workers recognize the value of training not just for knowledge, but for behavioural reinforcement.

Tandfonline (2021) claims that well-organised, regular educational courses greatly enhance the theoretical knowledge as well as the practical execution of hand hygiene standards. Learning has to be strengthened constantly to guarantee that information becomes habitual behaviour.

Institutions should thus institutionalise regular training, including hands-on courses, to guarantee information is not only preserved but also internalised. Educating staff members empowers them and helps them to develop both skills and drive, so naturally including compliance into patient care.

4.7.2 Use of visual aids and technology

Respondents proposed visual tools and technology as useful compliance aids. R3 explained that *"charts showing handwashing steps are useful,"* while R12 said that *"posters in toilets and wards help remind us."* R6 suggested the use of *"automated dispensers to make the process easier."* These tools act as cognitive and procedural nudges, guiding behaviour in the right direction.

This is consistent with Müller *et al*. (2022), who discovered that technological tools and visual cues greatly increase hand hygiene compliance. Visual signals are passive reinforcing; automated systems lower memory and manual labour dependence, both of which are constrained during stress. Using posters, signage, or smart dispensers to include these tools into clinic design can support training, establish habit loops, and lower execution obstacles.

4.7.3 Leadership involvement and monitoring

The respondents recognized the value of active leadership in maintaining hygiene standards. R1 emphasized the need for *"more follow-ups from supervisors,"* R8 said *"regular feedback would motivate us,"* and R13 observed that *"visible leadership promotes accountability."* These comments indicate that healthcare workers value guidance, oversight, and reinforcement from above. Leaders should be active Respondents in promoting hygiene. Audits, feedback loops, and role modelling can help to accomplish this. Leadership walking the talk raises the probability of staff compliance. These results support Bandura's Social Cognitive Theory (2013), which emphasises that the social environment including modelling from authoritative figures shapes behaviour not only by individual knowledge but also by

other factors. In addition, Pittet *et al*. (2016) similarly showed that institutions with engaged leadership tend to have higher hygiene compliance rates.

4.8 Chapter Summary

This chapter presented the findings from interviews with 14 healthcare workers. The data were organized into themes that corresponded with the study's objectives. Direct quotes and analysis of every sub-theme revealed insights on the knowledge, attitudes, compliance issues, and improvement plans about hand hygiene practices. The results confirm that although awareness is usually great, regular practice calls for ongoing support via infrastructure, training, supervision, and leadership. The next chapter concludes the study and offers recommendations based on these findings.

CHAPTER FIVE

DISCUSSION, IMPLICATIONS, RECOMMENDATIONS, SUMMARY AND CONCLUSION.

5.1 Introduction

This chapter provides a synthesis of the research study which investigated the knowledge, attitudes and compliance factors regarding hand hygiene practices among healthcare workers at Baines Avenue Clinic in Harare, Zimbabwe. It begins by highlighting the results of the study in connection to study objectives. The chapter then gives implications, offers study recommendations, and suggestions for future research by means of a summary before drawing to a conclusion. The chapter tried to combine the knowledge acquired and suggest practical plans to improve hand hygiene compliance, hence helping to lower HAIs.

5.2 DISCUSSION

Using semi-structured interviews with 14 Baines Avenue Clinic healthcare professionals, the study was based in qualitative research. Thematic analysis revealed main areas of research: knowledge, attitudes, practices, elements affecting compliance, and improvement strategies. The results show that healthcare professionals showed sufficient understanding of hand hygiene policies, including the Five Moments for Hand Hygiene and appropriate application techniques. Respondents also expressed good views, seeing hand hygiene as a moral and professional obligation.

Notwithstanding these advantages, certain compliance obstacles were found. These included time constraints, physical discomfort from regular sanitiser usage, and infrastructure shortcomings including badly located or broken hygiene facilities. Furthermore, the study found several practical and organisational techniques suggested by Respondents to increase hand hygiene compliance, such as continuous training, visual aids, and managerial supervision.

Qualitative research considers a 70% response rate (14 out of 20 Respondents) to be strong and lets for a deep investigation of topics. The sample guaranteed that the results represented

both new viewpoints and institutional memory by including Respondents from different professional backgrounds. This diversity strengthens the credibility of the findings, in line with Creswell and Plano Clark (2017), who argue that variation in Respondents' backgrounds enhances data richness in qualitative inquiry.

5.2.1 Assessing the knowledge of hand hygiene practices

The study shows that healthcare workers at Baines Avenue Clinic possess strong foundational knowledge regarding hand hygiene. Most respondents correctly recognised the WHO's Five Moments for Hand Hygiene and knew when and how to apply alcohol-based hand rubs or soap and water. The respondents showed knowledge of both the justification for hand hygiene and its operational details. This suggests that previous training and institutional guidelines have successfully imparted the necessary information. However, while knowledge was widespread, its application in daily practice was occasionally inconsistent due to contextual constraints.

5.2.2 Determining attitudes toward hand hygiene protocols

Respondents generally held positive attitudes toward hand hygiene practices, describing them as central to patient care and professional integrity. Often driven by worries for patient safety and peer responsibility, many saw compliance as both a personal and group duty. The results confirm the theoretical view of the Health Belief Model and the Theory of Planned Behaviour, which claims that health-related behaviours are significantly influenced by perceived benefits and social norms. Therefore, attitudinal foundations are present, but they need strengthening through institutional support and regular role modelling.

5.2.3 Identifying factors influencing compliance

Compliance was hindered by several practical and structural barriers despite having knowledge and good behaviour and attitudes. Often, hand hygiene was deprioritized due to high workload and crises. Regular adherence was also inhibited by skin discomfort from regular use of alcohol-based products. Moreover, environmental obstacles like faraway or damaged sinks and badly positioned sanitisers hampered hand hygiene compliance. These results highlight a typical pattern in underfunded environments, where infrastructure and human resource constraints reduce the conversion of desire into action.

5.2.4 Recommending strategies to improve compliance

Participants suggested feasible ways to overcome the obstacles they encountered. These consisted of more leadership participation, strategic positioning of visual aids, introduction of skin-friendly hygiene products, and frequent training and refresher seminars. These suggestions show a need for cultural strengthening and institutional investment. Particularly stressed was leadership involvement since it creates responsibility and establishes the tone for clinic-wide hygiene standards.

5.3 IMPLICATIONS

- The study findings imply that Health care workers at Baines Avenue Clinic have good knowledge and also have positive attitudes regarding hand hygiene which is fundamental in reducing incidences of HAIs, ensuring patient safety and quality of care.
- Strong knowledge background and positive attitudes are important but must be supported by institutional management, continuous education and training, timely feedback and environmental cues in order to translate knowledge into consistent hand hygiene practice
- Workload, time constraints, organisational culture, habitual behaviours and availability of resources affect hand hygiene practices and compliance as evidenced by the findings
- Positive attitudes lead to greater commitments and adherence to hand hygiene protocols making practices more effective.

5.4 RECOMMENDATIONS

The study's recommendations are tailored to key stakeholders as shown below

5.4.1 For Policymakers

- Formulate and enforce an institutional hand hygiene policy that aligns with national and WHO standards.
- Allocate specific budgets for IPC programs
- Introduce mandatory hand hygiene training modules in healthcare certification.

5.4.2 For the Ministry of Health and Child Care

- Strengthen monitoring systems for hand hygiene practices across healthcare institutions.
- Integrate hand hygiene performance indicators into national healthcare quality frameworks.
- Launch national awareness campaigns focused on the importance of hand hygiene among frontline healthcare workers.

5.4.3 For Baines Avenue Clinic Management

- Conduct quarterly training and refresher courses for all clinical and support staff.
- Appoint hand hygiene champions in each department to monitor and motivate staff.
- Ensure adequate infrastructure, such as well-placed hand rub dispensers and functional sinks.
- Promote a safety culture through recognition and reward systems for exemplary compliance.

5.4.4 For Healthcare Workers

- Embrace hand hygiene as a daily ethical obligation tied to patient safety.
- Participate proactively in training and advocate for better working conditions.
- Offer peer support and mentorship to newer staff regarding best practices.

5.4.5 For Bindura University of Science Education

- Include modules on IPC and behavioural change strategies in health-related academic degree programs.
- Collaborate with healthcare facilities for field research and pilot projects.
- Foster innovation in health promotion tools such as visual media and low-cost dispensers.

5.5 SUMMARY

The study had a 70% respond rate. The findings showed that there was a good foundational knowledge regarding hand hygiene among staff at Baines Avenue Clinic. However,

knowledge and attitudes required for good hand hygiene practices and their capacity to follow is affected by workload, discomfort, infrastructure shortcomings, human resource constraints and crisis. Bridging the gap between awareness and action in infection prevention will call for a mix of policy reform, environmental and management support, and ongoing education and continuous feedback going forward.

5.6 CONCLUSION

According to the findings of the study, it was noted that health care workers had good foundational knowledge regarding hand hygiene, attitudinal foundations are present but they need strengthening through institutional support and regular role modelling. Hand hygiene practices were deprioritised due to emergencies, crisis, infrastructure and human resources constraints. This implies that management involvement and support, educational training programmes, materials, adequate and well positioned infrastructure, human resources and policy reforms establish a tone for clinic wide hand hygiene standards.

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Appendices

APPENDIX A: APPROVAL LETTER FROM INSTITUTION WHERE DATA WILL BE COLLECTED

30/1/25
Approved:
Supervisor — Matron.

6849 Weasly
Harare

BAINES AVENUE CLINIC
MATRON
Rabecha
07 APR 2025
66 BAINES AVENUE
P.O. BOX BE 190,
BELVEDERE, HARARE

29 January 2025

To The Clinical Directors
To The Matron
Baines Avenue Clinic
No 66 Baines Avenue
Harare.

Dear Sir/Madam

REF: APPLICATION FOR PERMISSION TO CARRY
A RESEARCH PROJECT FOR ACADEMIC
PURPOSE IN PARTIAL FULFILLMENT OF
CURRENT STUDIES: PGDIPE

I the undersigned am attached with
Bindura University of Science Education
undertaking the named studies. I am
seeking permission to carryout a
research project for academic purposes
Attached is a letter from the educ

Thank you for all the assistance
the sixth module of my studies. Your sup
in education is greatly appreciated

Yours faithfully

APENDIX B: INFORMED CONSENT FORM

BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE

DEPARTMENT OF HEALTH SCIENCES

INFORMED CONSENT FORM

PROJECT TITTLE	**Assessing healthcare worker's knowledge, attitudes and practices towards hand hygiene at Baines Avenue Clinic in Harare, Zimbabwe, in 2025.**
Principal investigator	**Mazanji Mwanza (Student, Post Graduate Diploma in Infection Prevention and Control, Bindura University of Science Education) Faculty of Science Department of Health Sciences**
Phone Numbers	**+263779604016/+263714074242**

SUBJECT: Research on assessing healthcare worker's knowledge, attitudes and practices health regarding hand hygiene at Baines Avenue Clinic, in Harare, Zimbabwe, in 2025

I Mazanji Mwanza, a student enrolled in the Postgraduate Diploma program in Infection Prevention and Control at Bindura University of Science Education, am conducting a

research at Baines Avenue Clinic focussing on knowledge and attitudes of health care workers towards hand hygiene practices.

You have been selected to answer a series of questions on the topic. The insights you provide are extremely important and will remain confidential. Therefore, please do not write your name on this document, I will be using numerical identifiers instead. I encourage you to answer the questions as honestly as possible. The research material will be stored securely.

Participation in this study is completely voluntary, and there will be no financial gain in participating. You may withdraw from the study any time and your withdrawal will not affect your work relations with Baines Avenue Clinic. Your input during the 10 -15-minute interview period and group discussion period would be greatly valued

The information collected will solely be used for this research and will be stored in the Health Science Department archives at Bindura University of Science Education for the duration of the project. Access to this data will be restricted to me and my supervisor. If you have any inquiries regarding this study, please feel free to reach out to me during the week at Bindura University's Department of health Science. Bag 1020, Bindura, by phone at +263779604016 or by email at mazamwa@gmail.com.

I hereby confirm that I have read and under understood the information above and willingly agree to participate in the study

_____

Participant Signature Date

Researchers Signature Date

APENDIX C. RESEARCH INSTRUMENTS

a) FOCUS GROUP DISSCUSION GUIDE

Focus Group Guide for Healthcare Workers at Baines Avenue Clinic

The purpose of this group discussion is to solicit information regarding an investigation of the knowledge and attitude of health care workers on hand hygiene practices at Baines avenue clinic in Harare, Zimbabwe**.** The guide includes questions on the level of knowledge about hand hygiene practices, the attitudes of healthcare workers towards hand hygiene protocols, practices of hand hygiene, factors that influence compliance with hand hygiene protocols and how hand hygiene compliance can be improved among healthcare workers. The information you provide will go a long way in determining the state of hand hygienic practices in Zimbabwe. The discussion should only take 10-15 minutes to complete.

1. Exploring knowledge of hand hygiene

- Let's discuss what hand hygiene means to you in your daily work. What are the most important practices you follow?
- Can you share your thoughts on when hand hygiene is most critical during patient care?
- How confident do you feel about your knowledge of hand hygiene techniques and guidelines?

2. Attitudes and perceptions about hand hygiene practices

- How do you feel about the hand hygiene practices currently in place at this clinic?
- What motivates or discourages you and your colleagues from following these protocols?
- In your view, how seriously do healthcare workers here take hand hygiene, and why?

3. Exploring practices of health care workers about hand hygiene

- Let's discuss the typical situations when you wash or sanitize your hands during clinical activities and patient care. What factors remind you or encourage you to practice hand hygiene regularly?
- How do social norms or the behaviour of other people around you influence your hand hygiene practice?
- What role do knowledge and awareness play in your hand hygiene habits?

4. Identifying factors affecting compliance

- What are some common challenges you and your colleagues face in maintaining hand hygiene?
- How do factors like workload, availability of supplies, or clinic environment affect hand hygiene practices?
- Can you share any examples where compliance was difficult or easy, and what made the difference?

5. Suggestions for Improvement

- What ideas do you have for improving hand hygiene compliance among healthcare workers here?
- How could training or awareness programs be made more effective?
- What support or changes from management would help you and your colleagues maintain better hand hygiene?
- Are there any innovations or tools you think could assist in improving compliance?

Thank you for your time and valuable insights. Your feedback is helpful for this research.

b) KEY INFORMANT INTERVIEW GUIDE

Research instrument (Interview Guide)

Dear Respondent,

The purpose of this interview is to solicit information regarding an assessment of the knowledge, attitude and practices of health care workers regarding hand hygiene practices at Baines avenue clinic in Harare, Zimbabwe**.** The guide includes questions on the level of knowledge about hand hygiene practices, the attitudes of healthcare workers towards hand hygiene protocols, factors that influence compliance with hand hygiene protocols and how can hand hygiene compliance be improved among healthcare workers. The information you provide will go a long way in determining the state of hand hygienic practices in Zimbabwe. The interview should only take 10-15 minutes to complete.

Respondent background

1. Indicate your Gender (M/F)

2. How long have you been working in this clinic?

Less than 1 year	
2 to 5 years	
6 to 10 years	
11 to 15 years	
More than 15 years	

Study objectives

1. Knowledge about Hand Hygiene Practices

- Can you describe what you understand by hand hygiene in a healthcare environment?
- What are the key moments when you think hand hygiene should be performed during patient care?
- What methods of hand hygiene are you familiar with and use in your daily work?

- How do you think hand hygiene helps in preventing healthcare-associated infections (HAIs)?

2. Attitudes towards Hand Hygiene Protocols

- How important do you think hand hygiene is in your role as a healthcare worker?
- What motivates you to follow hand hygiene protocols?
- Are there any challenges or frustrations you experience when trying to comply with hand hygiene guidelines?
- How do you perceive the support from management regarding hand hygiene practices?

3.**Practices towards hand hygiene**

- Can you describe your typical hand hygiene routine during patient care for your day?
- Have your hand hygiene practices changed recently? what influenced these changes
- What challenges do you face in practicing hand hygiene consistently during clinical work?

4. Factors Influencing Compliance with Hand Hygiene

- What factors make it easier for you to comply with hand hygiene protocols?
- What barriers or obstacles do you face that prevent you from consistently practicing hand hygiene?
- How does workload or time pressure affect your hand hygiene practices?
- Are there any environmental or resource-related issues that impact your ability to maintain hand hygiene?

5. Recommendations for Improving Hand Hygiene Compliance

- What changes or improvements would you suggest to help healthcare workers comply better with hand hygiene protocols?
- How could training or education on hand hygiene be enhanced at this clinic?
- What role do you think leadership and management should play in improving hand hygiene practices?

- Are there any tools or resources you believe would support better hand hygiene compliance?

Thank you for your time and valuable insights. Your feedback will be very helpful for this research.