



BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCES

DEPARTMENT OF HEALTH SCIENCES

**BARRIERS TO IMPLEMENTING STANDARD PRECAUTIONS AMONGST
HEALTHCARE WORKERS AT MILTON PARK MEDICAL CENTRE.**

BY (B226988A)

**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS OF THE POSTGRADUATE DIPLOMA IN INFECTION
PREVENTION AND CONTROL.**

JUNE 2025

DECLARATION

I, MACHIMBIRIKE MOLLINE, declare that this study is my own effort and is a true reflection of research executed by me. This research in full or part thereof has not been submitted for examination for any degree at any other university/institution. No part of this dissertation may be reproduced, stored in any retrieval system, or transmitted in any form, or by any means (e.g. electronic, mechanical, photocopying, recording or otherwise) without the prior express permission of me the author, or Bindura University of Science Education on my behalf.

I, MACHIMBIRIKE MOLLINE, grant Bindura University of Science Education permission to reproduce this dissertation in whole or in part, in any manner or format, which Bindura University of Science Education may deem fit.

...Molline Machimbirike.....

Name of Student

Signature

APPROVAL FORM

TITLE OF THE PROJECT: BARRIERS TO IMPLEMENTING STANDARD
PRECAUTIONS AMONGST HEALTHCARE WORKERS AT MILTON PARK MEDICAL
CENTRE.

To be completed by the student

I certify that this dissertation meets the preparation guidelines as presented in the faculty guideline
and instructions for typing dissertations

...MOLLINE... MACHIMBIRIKE...

...26.../.....05...../.....25.....

Name of Student

Signature

Date

To be completed by the supervisor

This dissertation is suitable for submission to the faculty.

This dissertation has been checked for conformity with the faculty guidelines.

...../...../.....

Name of Supervisor

Signature

Date

To be completed by the department chairperson

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.

...../...../.....

Name of Chairman

Signature

Date

DEDICATION

This research project is dedicated to my husband, Taurai Zvoushe, my brother Felix Machimbirike as well as to my children, Anashe and Mufaro. I would like to thank you all for your unwavering support, love, and tolerance when I deprived you of the time you needed. I am aware that it was difficult for you while I was away, but because of your faith in me, I was able to carry on even when things were difficult. I love you so much. My parents, Mr. and Mrs. Machimbirike, thank you for encouraging me. To my friends Precious and Phyllis, you held my hand to pull through during the most difficult times. You were my pillars through it all. I will always be grateful.

ACKNOWLEDGEMENTS

The author would like to thank everyone who took part in the study for their contributions to its success. A special thank you to my supervisor, Ms. A Manwere, for her genuineness, as well as for her consistent support, expert direction, help, and constructive criticism that helped me create this thorough academic work. Additionally, I would like to express my gratitude to the chairwoman and all of the lecturers from the Department of Health Sciences at the Bindura University of Science Education for their direction and superb academic support throughout the training time. I want to thank my superiors at Milton Park Medical Centre for allowing me to carry out my studies at the institution, a special thanks goes to my colleagues and workmates for making the study a success.

Finally, I want to express my gratitude to God for guiding me through all of the challenges. I am a testimony, have seen your love all the days of my life.

ABSTRACT

This study investigates the barriers to implementing standard precautions among healthcare workers at Milton Park Medical Centre, a private healthcare facility in Harare, Zimbabwe. Despite established infection prevention and control (IPC) policies, compliance remains inconsistent due to institutional and individual challenges. Using a quantitative cross-sectional design and stratified random sampling, data were collected from 36 healthcare workers via structured questionnaires. Findings reveal that institutional barriers such as insufficient PPE, inadequate training, and weak policy enforcement, alongside individual factors like time constraints, perceived low infection risk, and over reliance on personal experience, hinder adherence to IPC protocols. The study is grounded in the Health Belief Model, highlighting how perceived barriers and cues to action influence behavior. Results indicate that while IPC policies exist, their effectiveness is undermined by inconsistent enforcement and limited behavioral reinforcement. The study recommends regular IPC training, stronger managerial oversight, improved resource provision, and behavior change interventions to enhance compliance, ultimately contributing to safer healthcare delivery in private settings.

Keywords: Infection prevention and control (IPC), standard precautions, healthcare-associated infections (HAIs), institutional barriers, individual barriers, private healthcare, Zimbabwe, Health Belief Model.

Table of Contents

DECLARATION	iii
APPROVAL FORM	i
DEDICATION	v
ACKNOWLEDGEMENTS	vi
ABSTRACT	vii
CHAPTER 1	1
INTRODUCTION AND BACKGROUND	1
1.0 Background of the Study	1
1.1 Purpose of the Study	3
1.2 Statement of the Problem	3
1.3 Research Objectives	4
1.4 Research Questions	4
1.4 Conceptual Framework	4
1.5 Definition of terms	7
Standard Precautions	7
Infection Prevention and Control (IPC)	7
Healthcare-Associated Infections (HAIs)	7
Personal Protective Equipment (PPE)	7
Hand Hygiene Compliance	8
Regulatory Compliance in Private Healthcare Facilities	8
1.6 Chapter Summary	8
CHAPTER TWO	9
LITERATURE REVIEW	9
2.0 Chapter Introduction	9
2.2 Theoretical Framework	9
2.3 EMPIRICAL REVIEW	10
2.3.1 Individual Barriers Affecting Implementation of Standard Precautions	10
2.3.2 Institutional Barriers Affecting Implementation of Standard Precautions	11
2.3.3 Effectiveness of Existing Infection Prevention and Control (IPC) Policies	13

2.4 Gaps in Literature.....	14
2.5 Chapter Summary	15
CHAPTER 3	16
METHODOLOGY	16
3.1 Chapter Introduction	16
3.2 Research Design	16
3.3 Research Approach	17
3.4 Target Population.....	18
3.5 Sample and Sample Size.....	19
3.6 Sampling Techniques	20
3.7 Data Sources	21
3.8 Data Collection Techniques	22
3.9 Data Analysis.....	23
3.10 Ethical Considerations.....	24
CHAPTER 4	25
PRESENTATION AND DISCUSSION OF FINDINGS	25
4.0 Introduction	25
4.1 Response Rate.....	25
Table 4.1: Questionnaire Distribution and Response Rate	25
4.3 Demographic Profile of Respondents	26
Table 4.3.1: Gender of Respondents	26
Table 4.3.2: Age Group of Respondents	26
Table 4.3.3: Professional Cadre of Respondents	27
Table 4.3.4: Years of Work Experience at the Facility.....	27
Table 4.3.5: IPC Training in the Last 12 Months	28
Table 4.3.6: Department/Unit of Work	28
4.4 Institutional Barriers to Standard Precaution Implementation	29
Table 4.4.1: Descriptive Statistics – Institutional Barriers (N = 36).....	29
4.5 Individual Barriers to Standard Precaution Adherence	30
Table 4.5.1: Descriptive Statistics – Individual Barriers (N = 36)	30
4.6 Effectiveness of Existing IPC Policies.....	31
4.5 Chapter Summary	32
CHAPTER FIVE	33

Summary, Discussion and Recommendations	33
5.1 Introduction	33
5.2 Discussion of Findings	33
Effectiveness of Existing IPC Policies.....	33
Objective 1: Institutional Barriers	33
Objective 2: Individual Barriers.....	35
Objective 3: Effectiveness of IPC Policies.....	35
5.3 Conclusions	37
5.4 Recommendations	37
5.5 Implications of the Study	38
Professional Practice.....	38
Policy	38
Research.....	39
Education	39
5.6 Chapter Summary	39
REFERENCES	41

CHAPTER 1

INTRODUCTION AND BACKGROUND

1.0 Background of the Study

The implementation of standard precautions in healthcare settings is a critical measure for preventing healthcare-associated infections (HAIs), ensuring both patient and healthcare worker safety (Mandishona, 2023). According to the World Health Organization (WHO, 2022), adherence to these precautions, including hand hygiene, use of personal protective equipment (PPE), safe injection practices, and environmental disinfection, reduces infection transmission rates in healthcare settings by over 50%. The Centers for Disease Control and Prevention (CDC, 2023) further emphasizes that failure to adhere to these precautions has been linked to outbreaks of severe infections, including Methicillin-Resistant *Staphylococcus Aureus* (MRSA) and *Clostridium difficile*.

A study by Allegranzi et al. (2022) used a systematic review approach to analyze global compliance with hand hygiene protocols and found that while high-income countries reported an average compliance rate of 71%, low- and middle-income countries (LMICs) recorded as low as 34%. The study's findings imply that access to resources, ongoing training, and strict regulatory policies play a pivotal role in ensuring adherence. Furthermore, Oliveira et al. (2021) conducted a qualitative study across various European healthcare facilities, using in-depth interviews with infection control officers to assess barriers to standard precautions. Their findings highlighted that while knowledge levels were generally high, behavioral adherence was influenced by workload, personal risk perception, and institutional enforcement of IPC policies. The study recommended that hospitals integrate behavioral reinforcement strategies to improve compliance. Despite well-established frameworks in high-income settings, adherence remains inconsistent, particularly in resource-constrained environments, necessitating region-specific strategies to address these gaps.

Across sub-Saharan Africa, systemic challenges such as resource shortages, insufficient training, and weak policy enforcement mechanisms have impeded effective implementation of standard precautions among healthcare workers. Mayer et al. (2022) conducted a mixed-methods study assessing compliance with IPC measures in South African hospitals, utilizing structured observations and self-reported surveys among 500 healthcare workers. The study found that only 47% of participants adhered to all recommended precautions, with PPE unavailability and staff

shortages cited as primary barriers. The study's implications highlight the need for government intervention in securing PPE supplies and enhancing workforce capacity to alleviate workload pressures.

Similarly, a study by Kimani et al. (2022) in Kenya used a cross-sectional survey approach involving 800 healthcare workers from both urban and rural hospitals. The research revealed that while 82% of respondents understood standard precaution protocols, only 38% complied consistently due to limited access to hand hygiene stations, high patient loads, and inadequate IPC training. The study suggested that periodic refresher training programs and infrastructural improvements could significantly enhance compliance. Furthermore, the Africa Centres for Disease Control and Prevention (Africa CDC, 2023) has urged regional governments to integrate standard precautions into national health policies, stressing that adherence gaps in Africa are exacerbated by weak regulatory enforcement and the absence of structured monitoring mechanisms. Despite these recommendations, many countries, including Zimbabwe, continue to struggle with ensuring healthcare worker compliance due to financial and institutional constraints.

In Zimbabwe, HAIs remain a significant public health challenge, particularly in high-volume urban medical centers. The Ministry of Health and Child Care (MoHCC) has developed several frameworks to enforce standard precautions, including the National Infection Prevention and Control Guidelines (2019) and the Zimbabwe Occupational Safety and Health Policy (2021), which mandate healthcare facilities to implement IPC measures and provide regular staff training. However, studies indicate persistent gaps in adherence, particularly in private healthcare institutions. Chinogurei et al. (2024) conducted a quantitative study assessing compliance levels in 15 healthcare facilities across Harare, including both public and private hospitals. Using structured observations and self-administered questionnaires among 400 healthcare workers, the study found that only 57% adhered to all standard precautions, with private facilities recording a lower compliance rate due to reduced regulatory oversight. The study's key implication is the urgent need for stringent enforcement of IPC policies in private healthcare settings, coupled with mandatory training programs.

Existing literature on infection prevention and control (IPC) in Zimbabwe predominantly focuses on public healthcare institutions, resulting in limited understanding of how private healthcare facilities manage adherence to standard precautions. This study seeks to address that gap by

focusing on Milton Park Medical Centre, a private healthcare facility. It will examine institutional barriers that hinder the effective implementation of standard precautions and explore individual-level challenges faced by healthcare workers in adhering to IPC guidelines. Furthermore, the study will evaluate the effectiveness of existing IPC policies in promoting compliance with standard precautions within the private healthcare context. The findings will offer evidence-based insights that can inform targeted interventions aimed at improving infection prevention practices in Zimbabwe's private healthcare sector.

1.1 Purpose of the Study

The purpose of this study is to investigate the barriers to implementing standard precautions among healthcare workers at Milton Park Medical Centre in Harare, Zimbabwe. Despite the well-documented importance of infection prevention and control (IPC) measures in reducing healthcare-associated infections (HAIs), compliance among healthcare workers remains inconsistent, particularly in private healthcare facilities where regulatory oversight may be less stringent than in public hospitals. This study aims to identify the key institutional, individual, and systemic challenges that hinder the effective implementation of standard precautions, including hand hygiene, personal protective equipment (PPE) use, safe injection practices, and environmental sanitation.

1.2 Statement of the Problem

Healthcare-associated infections (HAIs) remain a significant threat to patient safety and healthcare worker well-being, requiring strict adherence to standard precautions, such as hand hygiene, personal protective equipment (PPE) use, safe injection practices, and environmental sanitation. Despite established infection prevention and control (IPC) guidelines in Zimbabwe, compliance among healthcare workers, particularly in private healthcare facilities, is inconsistent. Inadequate regulatory oversight in private settings often results in lower adherence rates compared to public hospitals. Studies indicate that non-compliance with IPC measures can increase the risk of infections, with research showing that up to 30% of healthcare workers in Zimbabwe fail to consistently follow hand hygiene protocols (Mandishona, 2023).

Anecdotal evidence from Milton Park Medical Centre suggests several barriers to effective IPC practices, including insufficient training, limited PPE, heavy workloads, and a perceived low risk of infection among staff. Inadequate enforcement of IPC policies and the absence of regular audits

are additional institutional challenges identified across healthcare settings (Mayer, 2023). Despite these issues, there is limited research on the specific barriers affecting adherence to standard precautions in private healthcare facilities like Milton Park. This study will investigate the key barriers to IPC compliance at Milton Park Medical Centre, focusing on both individual and institutional factors, and evaluating healthcare workers' knowledge, attitudes, practices (KAP), IPC resource availability, and organizational policies governing infection control.

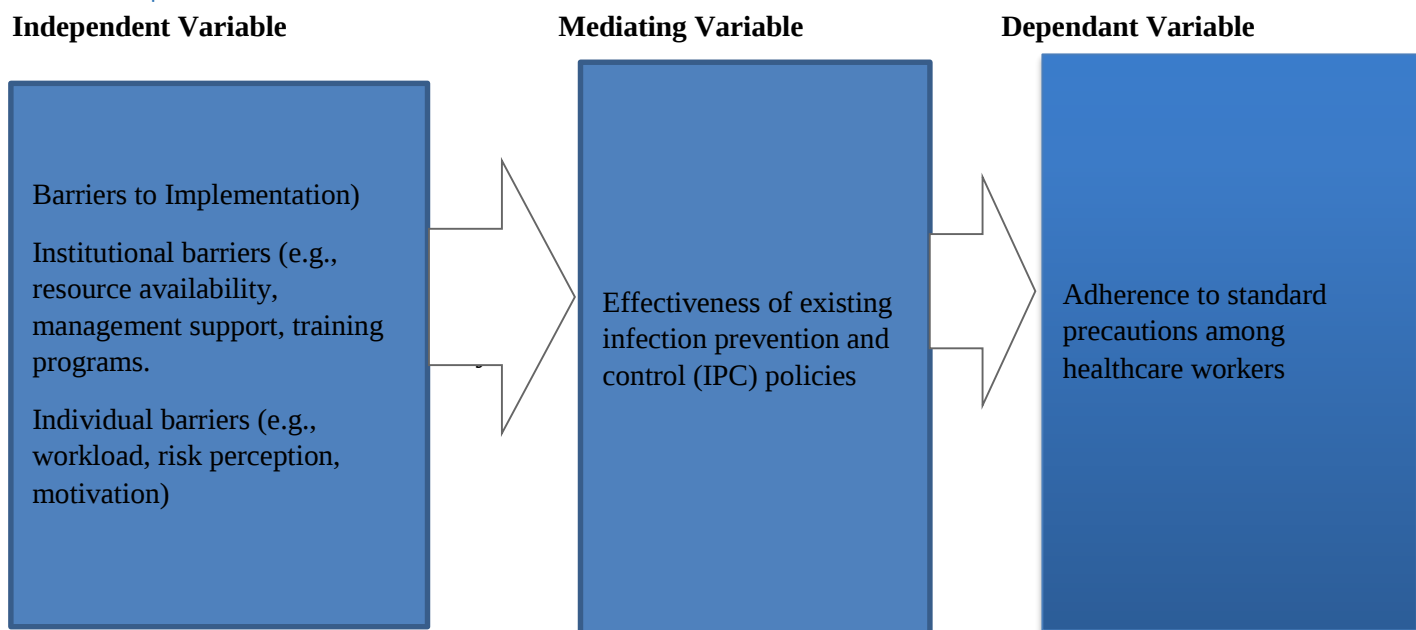
1.3 Research Objectives

- To identify institutional barriers affecting the implementation of standard precautions among healthcare workers at Milton Park Medical Centre.
- To identify the individual barriers affecting the implementation of standard precautions among healthcare workers at Milton Park Medical Centre.
- To evaluate the effectiveness of existing infection prevention and control (IPC) policies in ensuring adherence to standard precautions in private healthcare settings.

1.4 Research Questions

- What institutional barriers hinder the implementation of standard precautions among healthcare workers at Milton Park Medical Centre?
- What individual barriers prevent healthcare workers at Milton Park Medical Centre from adhering to standard precautions?
- How effective are the current infection prevention and control (IPC) policies at Milton Park Medical Centre in ensuring adherence to standard precautions among healthcare workers

1.4 Conceptual Framework



The conceptual framework for this study illustrates the interaction between independent, moderating, and dependent variables, providing a structured approach to understanding barriers to implementing standard precautions among healthcare workers at Milton Park Medical Centre. It is grounded in infection prevention theories and empirical studies that highlight how personal, institutional, and regulatory factors influence adherence to standard precautions (Allegranzi et al., 2020; Tartari et al., 2019). The framework identifies three primary independent variables—knowledge, attitudes, and practices (KAP) of healthcare workers, institutional barriers, and individual barriers—that directly affect compliance. Healthcare workers' level of awareness and attitudes toward standard precautions significantly influence their adherence. Studies have shown that healthcare workers with adequate training, strong infection prevention knowledge, and positive perceptions are more likely to implement protective measures, whereas poor knowledge, misconceptions about transmission risks, and negative attitudes contribute to low compliance (Labrague et al., 2021). The KAP of healthcare workers is shaped by access to training, availability of up-to-date guidelines, and their perception of infection risks within the workplace. If knowledge gaps exist, workers may unknowingly violate precautionary measures, increasing the risk of healthcare-associated infections (HAIs).

Beyond individual knowledge, institutional factors play a crucial role in shaping adherence. The study considers institutional barriers such as the availability of infection prevention resources, management support, and the enforcement of IPC guidelines as critical determinants of compliance. Research indicates that inadequate supply of personal protective equipment (PPE), lack of hand hygiene facilities, absence of infection control training programs, and weak enforcement mechanisms contribute to non-adherence in healthcare settings (Salama et al., 2020). Healthcare facilities that do not prioritize IPC programs often have high rates of non-compliance, placing both workers and patients at risk (Haile et al., 2021). Furthermore, healthcare administrators' commitment to infection prevention determines how effectively policies are implemented. Without active monitoring, supervision, and routine audits, healthcare workers may disregard standard precautions, either due to complacency or a perception that violations will go unnoticed. Thus, institutional barriers function as systemic constraints that either enable or hinder adherence to infection control practices.

Individual factors further influence compliance, including workload, perceived risk, and professional motivation. High patient loads, staff shortages, and fatigue contribute to non-adherence, as healthcare workers may prioritize efficiency over safety protocols (Deressa et al., 2020). Studies suggest that healthcare workers under significant time pressure often fail to follow hand hygiene protocols or PPE usage guidelines due to workload constraints. Additionally, some healthcare professionals perceive a low risk of infection, particularly when treating non-infectious patients, leading to inconsistent adherence (Alhumaid et al., 2021). If workers believe that certain patients pose minimal risk, they may neglect precautions, thereby increasing the potential for cross-infection. Addressing these personal barriers requires targeted interventions, such as behavioral change strategies, workload redistribution, and continuous professional development programs that emphasize the importance of IPC measures across all patient interactions.

While independent variables shape adherence, the moderating variable—the effectiveness of existing infection prevention and control (IPC) policies—acts as a regulatory framework governing compliance. IPC policies are meant to standardize infection control practices, ensuring that healthcare workers have clear guidelines on standard precautions. However, the impact of these policies depends on enforcement mechanisms, training provisions, and institutional commitment to implementation. In Zimbabwe, private healthcare facilities, including Milton Park Medical Centre, operate under IPC guidelines set by the Ministry of Health and Child Care (MoHCC), the World Health Organization (WHO), and the Centers for Disease Control and Prevention (CDC) (WHO, 2021). However, gaps in enforcement, weak monitoring structures, and limited policy awareness reduce their effectiveness. A study by Akanbi et al. (2021) found that even when policies exist, their impact is often diminished by poor institutional oversight, lack of compliance monitoring, and minimal repercussions for violations. Effective IPC policies must not only exist but be actively reinforced through periodic audits, strict accountability measures, and regular updates to align with emerging infectious disease threats.

The dependent variable in this framework is adherence to standard precautions, which is influenced by the interaction between healthcare workers' KAP, institutional and individual barriers, and the effectiveness of IPC policies. Adherence is not solely dependent on knowledge but also on institutional support, access to necessary resources, and strict policy enforcement (Ayalew et al., 2022). If all influencing factors are aligned—healthcare workers are well-trained,

institutions provide adequate IPC resources, and policies are strictly enforced—adherence is likely to be high, reducing the risk of HAIs. Conversely, if gaps exist in any of these areas, non-compliance increases, endangering both healthcare workers and patients. The interplay between these variables underscores the complexity of infection prevention and control in private healthcare settings, highlighting the need for a multi-level approach to improving compliance.

1.5 Definition of terms

Standard Precautions

Standard precautions include infection control measures such as hand hygiene, PPE use, and environmental sanitation, designed to minimize pathogen transmission in healthcare settings (WHO, 2021). They are crucial for preventing healthcare-associated infections (HAIs) but face challenges in low-resource settings due to PPE shortages and inadequate training (Labrague et al., 2021). In Zimbabwe, adherence is inconsistent, particularly in private healthcare settings (Moyo & Chikwasha, 2021).

Infection Prevention and Control (IPC)

IPC refers to practices aimed at preventing infectious disease spread in healthcare facilities, including hand hygiene, isolation precautions, and sterilization (WHO, 2021). Inadequate IPC in resource-limited settings contributes to increased morbidity and mortality from preventable infections (Akanbi et al., 2021). In Zimbabwe's private sector, IPC challenges include weak enforcement and limited resources (Chinogurei et al., 2024).

Healthcare-Associated Infections (HAIs)

HAIs are infections acquired during healthcare treatment and are preventable with proper adherence to IPC measures (WHO, 2021). Infections such as pneumonia and bloodstream infections lead to increased costs and prolonged hospital stays (Deressa et al., 2020). In Zimbabwe, HAI rates remain high, particularly in private healthcare, due to poor IPC implementation (Moyo & Chikwasha, 2021).

Personal Protective Equipment (PPE)

PPE, such as gloves and masks, protects healthcare workers from infectious agents (WHO, 2021). Non-compliance is a global issue, especially in low-resource settings where PPE shortages hinder effective infection control (Labrague et al., 2021). In Zimbabwe's private hospitals, PPE shortages are a major barrier to IPC (Chinogurei et al., 2024).

Hand Hygiene Compliance

Hand hygiene compliance involves consistent handwashing and sanitization to reduce pathogen transmission. It is the most effective infection prevention strategy, yet adherence is often suboptimal (Allegranzi et al., 2020). In Zimbabwe's private healthcare sector, challenges include inadequate infrastructure and limited oversight (Chinogurei et al., 2024).

Regulatory Compliance in Private Healthcare Facilities

Regulatory compliance refers to adherence to infection control policies set by health authorities. In private healthcare, compliance is often hindered by financial constraints and lack of oversight (WHO, 2021). In Zimbabwe, inconsistent adherence to IPC guidelines in private hospitals is a major concern (Moyo & Chikwasha, 2021). Strengthening policy enforcement is critical for improving compliance (Akanbi et al., 2021).

1.6 Chapter Summary

This chapter introduced the study by presenting the background of the study, objectives and research questions and the conceptual framework. The chapter explored the barriers to implementing standard precautions among healthcare workers, focusing on global, regional, and local perspectives. It highlighted the importance of infection control in reducing healthcare-associated infections and examined factors affecting compliance, such as institutional constraints, workload, and resource limitations (Alhumaid et al., 2021; Ayalew et al., 2022). In Zimbabwe, national policies exist (MoHCC, 2020), but challenges persist, especially in private healthcare settings (Moyo & Chikwasha, 2021). The chapter established the study's purpose, emphasizing the need to address compliance barriers in private hospitals and fill the gap in existing research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Chapter Introduction

A literature review is a comprehensive survey and analysis of existing research, theories, and scholarly work on a specific topic. It synthesizes and critically evaluates the findings of previous studies, identifying trends, gaps, and key themes. The purpose of a literature review is to provide a foundation for the research study by offering context, highlighting current knowledge, and justifying the need for further investigation (Booth, Sutton, & Papaioannou, 2016). This chapter presents a comprehensive review of the theoretical and empirical literature related to infection prevention and control (IPC) in healthcare settings, with a specific focus on Zimbabwe's private healthcare sector. The chapter further explores relevant theoretical framework, the Health Belief Model (HBM) which provide insights into the factors influencing IPC adherence. Additionally, the empirical review examines healthcare workers' knowledge, attitudes, and practices (KAP), institutional and individual barriers to compliance, and the effectiveness of existing IPC policies.

2.2 Theoretical Framework

This study is guided by the Health Belief Model (HBM), a psychological theory developed to explain and predict health-related behaviors through individuals' attitudes and beliefs. The HBM asserts that a person's likelihood of engaging in a health behavior such as infection prevention depends on their perceptions of susceptibility, severity, benefits, and barriers. It also considers the influence of cues to action and self-efficacy in shaping health behavior (Rosenstock, 1974; Glanz, Rimer, & Viswanath, 2020).

In relation to the first objective of the study, which seeks to identify institutional barriers to the implementation of standard precautions, the HBM explains that perceived barriers such as limited personal protective equipment (PPE), insufficient training, and weak policy enforcement can discourage healthcare workers from following infection prevention protocols. When these barriers are present within healthcare institutions, even staff who understand the benefits of standard precautions may find it difficult to comply (Glanz et al., 2020).

The second objective, which aims to identify individual barriers to compliance, is addressed through several constructs within the HBM. Healthcare workers who perceive a low risk of contracting healthcare-associated infections (HAIs), or who believe that such infections are not severe, may lack motivation to follow hand hygiene or PPE use protocols. In addition, workers with low self-efficacy may not feel capable of performing standard precautions correctly, which further decreases the likelihood of compliance (Rosenstock, 1974).

The third objective of the study, which assesses the effectiveness of existing infection prevention and control (IPC) policies, can be understood using the HBM's concept of cues to action. Institutional strategies such as signage, training, supervision, and feedback can serve as prompts that trigger healthcare workers to act in line with IPC protocols. These cues are important in reinforcing desired behaviors and translating knowledge into consistent action, particularly in healthcare settings like Milton Park Medical Centre (Glanz et al., 2020).

2.3 EMPIRICAL REVIEW

2.3.1 Individual Barriers Affecting Implementation of Standard Precautions

Individual-level barriers often present complex challenges in infection prevention and control. In the United States, Barnes et al. (2021) conducted a mixed-methods study across five hospitals in California, which revealed that risk perception and personal motivation greatly influenced compliance among healthcare workers. Many respondents admitted to only partially complying with standard precautions when time constraints, fatigue, or familiarity with patients lowered their perceived risk of infection. The study found that 40% of nurses skipped hand hygiene protocols during non-invasive procedures, believing them to be low-risk. Similarly, in South Korea, Lee et al. (2020) discovered that emotional exhaustion and fear of blame for reporting mistakes discouraged open dialogue about IPC breaches. Healthcare workers facing burnout or emotional fatigue were less likely to adhere consistently to IPC measures. In Turkey, a study by Demir and Sari (2019) indicated that limited understanding of cross-contamination pathways contributed to inconsistent glove use and poor disinfection practices. These findings collectively illustrate how personal beliefs, knowledge gaps, and emotional states can significantly influence compliance with standard precautions, even in well-resourced healthcare systems.

Across the African region, individual barriers to standard precaution adherence are shaped by knowledge deficits, cultural attitudes, and occupational stress. In Ghana, a study conducted by

Opoku et al. (2023) found that only 47% of healthcare workers correctly identified the full list of standard precautions recommended by the World Health Organization. Inadequate pre-service training and limited access to up-to-date IPC materials were key contributors to knowledge gaps. Additionally, informal mentorship practices often passed down incorrect methods, normalizing poor habits over time. In Kenya, Onyango et al. (2022) identified fear of job loss and peer pressure as important psychological barriers. Healthcare workers reported avoiding confrontation with colleagues who violated IPC protocols, citing a desire to maintain workplace harmony. This social dynamic hindered accountability and perpetuated non-compliance. In Algeria, Mahdjoubi et al. (2021) explored self-reported behavior among nurses in public hospitals and found that over 60% admitted to reusing gloves or neglecting mask use during patient assessments. Reasons cited included discomfort, overconfidence in personal immunity, and low perceived risk. These regional studies demonstrate how knowledge, peer influence, and perceived invulnerability act as strong individual-level barriers across African healthcare systems.

In Zimbabwe, individual-level challenges to standard precaution adherence have been documented in both urban and peri-urban health facilities. A study by Mudzengi and Chikomo (2024) in the Midlands Province explored healthcare workers' attitudes toward hand hygiene and PPE use. The researchers found that although most respondents acknowledged the importance of IPC measures, actual practice was irregular. Nearly 55% of healthcare workers reported skipping handwashing when the facility was busy, and 33% admitted to reusing PPE due to habit, not shortage. Moreover, the study highlighted that some staff viewed IPC as a low priority task delegated to junior personnel. This perception reduced personal responsibility and led to inconsistent practice. The findings emphasize that even when resources are available, individual behavior, shaped by attitudes, workplace culture, and prioritization of tasks, remains a major factor influencing the implementation of standard precautions in Zimbabwe's healthcare environment.

[2.3.2 Institutional Barriers Affecting Implementation of Standard Precautions](#)

Institutional barriers remain a persistent challenge in achieving full compliance with standard precautions across various global healthcare systems. In the United Kingdom, a cross-sectional study conducted in London hospitals revealed that administrative delays in policy enforcement and unclear infection prevention guidelines were major contributors to non-compliance with standard precautions (Thompson et al., 2020). The study highlighted that hospitals with outdated

IPC protocols and weak supervision structures had a compliance rate of only 58%, compared to 83% in institutions where management prioritized infection control. These findings indicate that effective leadership and updated policies are essential in guiding daily routines related to infection prevention. In Japan, Sato et al. (2022) found that hospitals with unclear chains of command and insufficient investment in IPC training recorded lower adherence to standard precautions, particularly in departments such as emergency care and intensive units. The study attributed institutional failures to a lack of dedicated IPC departments, poor integration of IPC in hospital culture, and minimal leadership accountability. Similarly, in Brazil, a national review by Silva et al. (2021) discovered that institutional financing played a central role in IPC outcomes. Public healthcare facilities with underfunded IPC programs, intermittent PPE supplies, and inconsistent supervision mechanisms faced recurring lapses in infection control. These examples from different continents demonstrate that institutional structure, leadership engagement, and consistent policy enforcement shape the operational environment within which standard precautions are either followed or neglected.

Across the African continent, several studies have highlighted institutional constraints that mirror and often exceed those faced globally. In Ethiopia, Mohammed et al. (2024) conducted a comparative study of public and private hospitals, revealing that public institutions struggled with erratic water supply, lack of written IPC guidelines, and inadequate PPE availability. Compliance was significantly higher in private facilities, which enjoyed better funding, clearer procedures, and higher managerial oversight. In Nigeria, Okeke et al. (2024) examined institutional-level barriers in federal medical centers and found that systemic underfunding, lack of waste disposal systems, and administrative neglect contributed to poor infection control. Hospitals without functional IPC committees or structured audit systems experienced more frequent breaches of safety procedures. A similar trend was observed in South Sudan, where Lado et al. (2025) found that healthcare workers lacked institutional support in the form of policy documentation, ongoing training, and supervisory visits. Most facilities surveyed did not have dedicated IPC personnel, and existing policies were either outdated or inconsistently applied. This lack of institutional engagement significantly hindered efforts to standardize precautions and reduce healthcare-associated infections. Collectively, these African studies highlight how governance, funding, and policy

infrastructure influence institutional readiness to support healthcare workers in upholding infection control measures.

In Zimbabwe, institutional challenges affecting the implementation of standard precautions are prevalent across both public and private healthcare sectors. A recent study by Zimunya and Gombe (2023) on IPC practices in Harare's private clinics found that institutional oversight and policy enforcement were inconsistent across facilities. The researchers reported that 67% of the surveyed institutions lacked functioning IPC committees, and only 42% had documented policies outlining standard precautions. In many clinics, IPC training was irregular and rarely prioritized during induction. Moreover, the study indicated that top management often delegated IPC responsibilities without providing the necessary financial or structural support. This institutional disengagement translated to fragmented IPC practices, where adherence was left to individual discretion rather than systematic enforcement. The findings reflect how institutional weakness in leadership commitment, regulatory enforcement, and resource allocation continues to hamper the effective implementation of standard precautions in Zimbabwe's healthcare settings.

2.3.3 Effectiveness of Existing Infection Prevention and Control (IPC) Policies

Evaluating IPC policy effectiveness, a study by Johnson et al. (2022) in Sweden found that stringent national policies, including mandatory IPC audits, increased compliance rates to 92%. Similar findings were reported in the Netherlands by de Vries et al. (2021), where government-mandated IPC training improved adherence among healthcare workers. However, a study in the United States by Patel et al. (2020) found that policy effectiveness varied across states, with less regulated hospitals exhibiting lower compliance rates. The variations in enforcement mechanisms indicate that while developed countries generally exhibit higher adherence levels, decentralized healthcare systems may present regulatory gaps that affect IPC outcomes.

In developing countries, a study by Wang et al. (2021) in Malaysia found that IPC policies in urban hospitals were well-enforced, with 88% adherence, whereas rural hospitals struggled due to inadequate oversight. Similarly, a study in Kenya by Mutiso et al. (2020) found that while national IPC guidelines existed, their implementation was inconsistent due to weak enforcement mechanisms and financial constraints. Another study in Brazil by Costa et al. (2023) emphasized that although public hospitals followed WHO guidelines, budget constraints significantly reduced policy enforcement. These findings highlight a major gap between policy formulation and

execution in developing countries, with resource constraints limiting the overall impact of IPC frameworks.

In an underdeveloped country setting, a study by Yusuf et al. (2022) in Chad revealed that most healthcare facilities lacked IPC policies entirely, leading to compliance rates as low as 15%. Similarly, research by Kamara et al. (2023) in the Central African Republic found that while some hospitals had IPC guidelines, they lacked the infrastructure and trained personnel to implement them effectively. Compared to developed and developing countries, these findings highlight the significant gaps in policy formulation and enforcement in underdeveloped nations. Without structured policy frameworks, healthcare institutions in these regions struggle to maintain basic IPC standards, leading to heightened infection risks.

A critical analysis of these studies reveals a recurring pattern where IPC policy effectiveness is closely tied to governance, financial stability, and institutional oversight. While developed nations benefit from strong regulatory frameworks, challenges persist in decentralized healthcare systems. In developing countries, well-designed policies exist, but weak enforcement and financial limitations hinder their full execution. In underdeveloped settings, the absence of structured policies remains a major concern, requiring urgent international collaboration and capacity-building initiatives to bridge the gap. This study seeks to assess the effectiveness of IPC policies at Milton Park Medical Centre, considering the broader global disparities in enforcement and adherence. The findings will contribute to recommendations for strengthening IPC frameworks in private healthcare settings within Zimbabwe.

2.4 Gaps in Literature

The literature review on infection prevention and control (IPC) in healthcare settings identifies several critical gaps that warrant further exploration. One significant gap is the limited contextual focus on Zimbabwe's private healthcare sector. While the review references global and African contexts, there is a lack of empirical data specifically addressing the unique challenges and compliance patterns within Zimbabwe's private healthcare facilities. This absence of localized data limits the applicability of global best practices to the Zimbabwean context. Additionally, the literature inadequately explores policy enforcement mechanisms and their impact on IPC compliance. Although the review mentions the existence of IPC policies, it fails to provide an in-depth analysis of how enforcement strategies, such as audits, penalties, and incentives, influence

adherence among healthcare workers. Another notable gap is the exclusion of patient and stakeholder perspectives. The review predominantly focuses on healthcare workers' knowledge, attitudes, and practices (KAP), neglecting valuable insights from patients, hospital administrators, and policymakers who play a crucial role in shaping IPC protocols and ensuring compliance. Furthermore, the literature does not adequately address the potential role of technology in enhancing IPC compliance. The integration of digital health technologies, such as electronic health records (EHR) and real-time surveillance systems, could significantly improve monitoring and reporting of IPC practices. However, this aspect is not thoroughly examined. Lastly, the review lacks an exploration of the impact of cultural and social norms on IPC adherence. In Zimbabwe, cultural beliefs and social dynamics may influence healthcare workers' behavior and attitudes toward standard precautions, yet this dimension is largely overlooked. Addressing these gaps would provide a more comprehensive understanding of IPC compliance and inform the development of tailored interventions to improve infection control in Zimbabwe's private healthcare sector

2.5 Chapter Summary

In summary, this chapter has provided an in-depth examination of the literature on infection prevention and control (IPC) in healthcare settings, with a particular emphasis on Zimbabwe's private healthcare sector. This chapter reviewed theoretical and empirical literature relevant to infection prevention and control, with the Health Belief Model guiding the study's understanding of healthcare workers' compliance with standard precautions. The model highlighted how perceptions of risk, severity, and barriers influence behavior. Empirical evidence from global, regional, and local contexts showed that individual barriers, such as limited knowledge, risk denial, and fatigue and institutional challenges, such as poor leadership, inadequate policies, and resource shortages significantly impact adherence. These findings underscore the importance of addressing both behavioral and systemic factors to improve compliance, aligning with the study's objectives of assessing knowledge, identifying barriers, and evaluating policy effectiveness within Zimbabwe's private healthcare sector.

CHAPTER 3

METHODOLOGY

3.1 Chapter Introduction

This chapter outlines the research methodology adopted to examine the barriers to implementing standard precautions among healthcare workers at Milton Park Medical Centre, focusing exclusively on quantitative methods. The study is grounded in a positivist research paradigm, which emphasizes objectivity, measurement, and the testing of hypotheses through observable and quantifiable phenomena. Positivism supports the use of empirical, statistical approaches to investigate social and health-related issues, making it appropriate for analyzing measurable barriers to infection control compliance. A quantitative research approach was selected to produce statistically valid and generalizable findings regarding adherence to infection prevention and control (IPC) protocols. This methodology allows the researcher to identify trends, relationships, and patterns among variables influencing healthcare workers' compliance with standard precautions.

Quantitative research is particularly suitable for studies that seek to explain phenomena through numerical data, structured instruments, and inferential analysis (Creswell, 2020). By employing structured surveys, the study gathers data on the level of adherence to standard precautions and the perceived institutional and personal barriers hindering compliance. The use of numerical indicators facilitates objective analysis and supports the drawing of logical conclusions based on empirical evidence. Furthermore, this chapter details the procedures for selecting the sample, the sampling strategy, the data collection instruments, and the statistical techniques that will be employed for analysis. Ethical considerations, such as informed consent, anonymity, and data protection, are also addressed to ensure compliance with research ethics. The exclusive use of quantitative methods strengthens the reliability and replicability of the findings, providing robust evidence to inform healthcare policy and practice improvements at Milton Park Medical Centre.

3.2 Research Design

This study adopts a descriptive cross-sectional quantitative research design to investigate the barriers to implementing standard precautions among healthcare workers at Milton Park Medical

Centre. The choice of a descriptive cross-sectional design aligns with the positivist paradigm, which emphasizes objectivity and the measurement of observable phenomena through numerical data. A cross-sectional design allows for the collection of data at a single point in time, enabling the researcher to capture a snapshot of current practices, attitudes, and barriers associated with infection prevention and control (IPC) compliance. This approach is particularly suited for identifying the prevalence and correlates of behavioral and institutional barriers without manipulating variables, thereby preserving the natural setting of the healthcare environment (Kothari, 2018).

The quantitative nature of the study necessitates the use of structured instruments that yield data suitable for statistical analysis. As such, a self-administered survey questionnaire comprising closed-ended items will be utilized to collect standardized data from the participants. The design facilitates the examination of relationships between variables such as job role, experience, knowledge of IPC policies, and adherence to standard precautions. According to Creswell and Creswell (2018), a descriptive cross-sectional survey is effective for generating quantifiable information that can be generalized to a wider population if the sample is representative. The use of a structured design ensures internal consistency, minimizes bias, and supports inferential techniques such as chi-square tests and logistic regression, which will be employed to test associations between variables.

Moreover, the design offers operational efficiency, allowing for rapid data collection from a relatively large sample within a limited timeframe. This is particularly beneficial in a dynamic healthcare setting, where staff availability may fluctuate. The descriptive cross-sectional approach allows for the statistical characterization of the barriers experienced by different healthcare worker categories—namely doctors, nurses, and support staff—thereby enabling comparative analysis. Overall, this research design provides a rigorous framework for generating empirical evidence on the state of IPC adherence and the key obstacles that need to be addressed to improve compliance in private healthcare facilities such as Milton Park Medical Centre.

3.3 Research Approach

This study adopts a purely quantitative research approach to investigate the barriers to implementing standard precautions among healthcare workers at Milton Park Medical Centre. The quantitative approach is grounded in the positivist philosophical tradition, which posits that reality

can be objectively measured and quantified using statistical tools and structured methodologies. Quantitative research emphasizes numerical measurement, hypothesis testing, and statistical inference, making it suitable for analyzing the extent and determinants of IPC adherence in a healthcare setting. By relying exclusively on structured, closed-ended survey instruments, the study seeks to identify patterns, associations, and trends among variables that influence compliance with standard precautions.

According to Creswell (2020), a quantitative approach is particularly effective in studies that aim to generalize findings from a sample to a broader population. In this research, the structured questionnaire will be designed to quantify healthcare workers' knowledge of IPC protocols, perceived institutional support, availability of personal protective equipment (PPE), and the frequency of adherence to recommended practices. The approach enables the collection of uniform data that can be statistically analyzed to test predefined hypotheses and assess the strength of relationships between dependent and independent variables. It also enhances objectivity and reduces the potential for researcher bias, as all participants respond to the same set of predetermined questions.

The decision to use a quantitative-only approach reflects the study's objective to generate statistically valid and generalizable insights rather than explore subjective experiences or contextual narratives. By using quantifiable indicators, the research approach allows for robust comparative analysis across different professional categories within the healthcare workforce—doctors, nurses, and support staff. As noted by Bryman (2020), quantitative methods are particularly well-suited to studies involving structured environments, such as hospitals, where variables can be clearly defined and measured. This approach also facilitates the use of inferential statistics to identify statistically significant barriers to IPC compliance, enabling data-driven policy recommendations. Ultimately, the quantitative research approach adopted in this study provides a rigorous and replicable framework for examining the determinants of standard precaution adherence in a private healthcare facility.

3.4 Target Population

The target population for this study consists exclusively of healthcare workers employed at Milton Park Medical Centre, a private healthcare facility located in Harare, Zimbabwe. This includes doctors, nurses, and support staff who are directly involved in patient care and infection prevention

and control (IPC) activities. For the purpose of this study, support staff are defined as healthcare personnel who assist with clinical and hygiene-related duties but are not licensed practitioners. These include nurse aides, ward assistants, cleaners, laundry workers, and porters who contribute to the implementation of standard precautions through tasks such as sanitization, waste disposal, and routine disinfection.

The focus on this specific group is based on their direct and daily interaction with infection control protocols, which positions them as key informants regarding adherence to and barriers against the implementation of standard precautions. Since the study is quantitative in nature, the emphasis is placed on identifying measurable trends and patterns within this population. The decision to focus on all cadres of healthcare workers ensures that the findings are comprehensive and inclusive of diverse occupational roles, each of which may encounter distinct challenges in complying with IPC policies. This categorization also facilitates subgroup analysis, enabling the examination of differences in compliance levels and perceived barriers across professional groups.

According to Kothari (2018), a clearly defined target population improves the relevance and applicability of quantitative findings, especially when studying structured institutional environments like hospitals. By selecting a single institution as the study site, the research ensures contextual consistency and minimizes variability that might arise from differences in organizational structures, resources, or policy implementation across multiple sites. Additionally, the private healthcare setting offers a unique opportunity to explore IPC compliance within a context that is often characterized by different regulatory oversight and resource allocation compared to public facilities. Therefore, the study population at Milton Park Medical Centre serves as a suitable and manageable group from which statistically significant insights can be drawn, contributing to the broader understanding of infection prevention barriers in Zimbabwe's private health sector.

3.5 Sample and Sample Size

As of April 2025, the total population of healthcare workers at Milton Park Medical Centre is 42, comprising doctors, nurses, and support staff who are actively involved in infection prevention and control (IPC) activities (Milton Park Clinic records, 2025). To ensure that the quantitative findings are statistically representative, a sample size was determined using the Raosoft online sample size calculator, which is commonly employed in health sciences for estimating survey-

based sample needs. By applying a 95% confidence level, a 5% margin of error, and a 50% response distribution, the recommended minimum sample size was calculated to be 38 participants. This sample size ensures sufficient statistical power to detect patterns and relationships among variables with a high degree of accuracy (Raosoft, 2004).

The sample of 38 participants will be drawn using stratified random sampling, a technique that enables proportional representation of each professional category within the target population. The healthcare staff will first be categorized into three strata: doctors, nurses, and support staff. From each stratum, participants will then be randomly selected in numbers reflecting their relative presence in the overall workforce. This method ensures that the perspectives of each subgroup are included in the dataset, enhancing the representativeness and generalizability of the findings across the entire healthcare facility. Stratified random sampling is especially advantageous in healthcare research where job roles may influence experiences with and attitudes toward IPC adherence (Creswell & Creswell, 2018).

Unlike mixed-methods studies that combine small purposive samples for qualitative insights, this purely quantitative design focuses solely on survey data gathered from the 38 selected participants. No qualitative interviews will be conducted. This exclusivity strengthens the internal consistency of the dataset, allowing for more reliable statistical comparisons and inferential analysis. The use of a clearly defined and adequately powered sample size supports the application of chi-square tests, correlation analyses, and regression models to test relationships between categorical and continuous variables related to IPC compliance. Overall, the sample size and sampling strategy are designed to yield robust and generalizable quantitative findings reflective of the healthcare workers' experiences at Milton Park Medical Centre.

3.6 Sampling Techniques

This study employs stratified random sampling as the sole sampling technique, consistent with the quantitative research design and the positivist paradigm. Stratified random sampling is used to ensure that all subgroups within the healthcare workforce—namely doctors, nurses, and support staff—are proportionally represented in the study sample. This method enhances the representativeness of the sample and improves the generalizability of the results to the entire population of healthcare workers at Milton Park Medical Centre. By dividing the population into

homogeneous strata and then selecting participants randomly from each stratum, the technique minimizes sampling bias and ensures a balanced representation of various professional categories.

The total population of 42 healthcare workers will be divided into three strata based on their professional roles. Each stratum will then contribute participants to the sample of 38, with the number selected from each group proportionate to their size in the total population. For instance, if nurses constitute 50% of the total workforce, then approximately 19 of the 38 participants will be drawn from the nursing stratum. This ensures that data on IPC adherence and perceived barriers can be analyzed both overall and within specific subgroups, enabling comparisons between different healthcare roles.

Stratified random sampling is particularly appropriate for structured institutional settings where distinct roles may encounter different constraints and levels of exposure to IPC procedures (Kumar, 2019). It also supports subgroup analysis by facilitating sufficient statistical power within each category. Unlike convenience or purposive sampling, this probability-based approach yields data that are less prone to researcher bias, thereby aligning with the principles of objectivity and replicability central to quantitative research. This technique allows the study to produce findings that are statistically sound and applicable to similar private healthcare settings where a diverse mix of healthcare workers engage in infection prevention practices.

3.7 Data Sources

This study relies exclusively on quantitative data drawn from primary and secondary sources to examine the barriers to implementing standard precautions among healthcare workers at Milton Park Medical Centre. The primary source of data will be a structured, self-administered questionnaire distributed to a sample of 38 healthcare workers. These questionnaires will collect quantifiable information on variables such as compliance levels, availability of personal protective equipment (PPE), institutional support mechanisms, and knowledge of infection prevention and control (IPC) protocols. Structured survey instruments are fundamental in quantitative research as they yield standardized responses suitable for statistical analysis, ensuring objectivity and comparability across participants (Kothari, 2018).

Secondary data will also be used to supplement and contextualize the primary data. These include institutional records, internal IPC compliance reports, and relevant policy documents available at

Milton Park Medical Centre. These documents provide numerical data on historical adherence rates, PPE availability statistics, and institutional investments in training or monitoring. The use of secondary quantitative data serves to validate self-reported responses from survey participants and enhances the robustness of the analysis. According to Thakur (2019), secondary data in quantitative research enables triangulation and strengthens the reliability of findings by corroborating primary data.

Both types of data are focused on capturing measurable indicators relevant to IPC policy implementation and staff behavior. There will be no qualitative data collection through interviews or open-ended responses, as the study strictly adheres to a quantitative methodology. The integration of numerical data from both primary and secondary sources allows the researcher to conduct a comprehensive analysis of IPC compliance barriers within the healthcare facility. This dual-source strategy contributes to the internal validity of the study and ensures that the conclusions drawn are grounded in empirical evidence.

3.8 Data Collection Techniques

The study will employ a single quantitative data collection technique: a structured self-administered questionnaire. This instrument is specifically designed to capture measurable data regarding healthcare workers' compliance with standard precautions and the perceived institutional and individual barriers to infection prevention and control (IPC) practices at Milton Park Medical Centre. The questionnaire will consist solely of closed-ended questions, including multiple-choice items and Likert scale formats, to facilitate quantitative analysis. These items will assess variables such as access to personal protective equipment (PPE), adequacy of IPC training, frequency of hand hygiene compliance, and perceived administrative support.

A total of 38 healthcare workers, selected through stratified random sampling, will participate in the survey. The questionnaires will be distributed in person during break hours or shift transitions to minimize workflow disruption. Participants will complete the forms anonymously to encourage honest responses, and each respondent will be provided a consent form prior to participation. The structured nature of the questionnaire ensures uniformity in data collection and limits subjective interpretation, which enhances the reliability and statistical integrity of the data (Creswell, 2020).

Data from the completed questionnaires will be entered into SPSS software for statistical analysis. The data entry process will involve coding responses, performing frequency checks, and running consistency tests to ensure accuracy. The structured design of the instrument allows for descriptive statistics such as means, percentages, and standard deviations, as well as inferential tests such as chi-square analysis and logistic regression to explore associations between variables. No open-ended responses or narrative data will be collected, as the research approach strictly adheres to quantitative methods. This methodical approach ensures that the collected data are suitable for robust statistical testing and generalization within the target population of healthcare workers in private healthcare settings.

3.9 Data Analysis

The data collected from the structured questionnaires will be analyzed using quantitative statistical techniques to identify patterns, trends, and relationships among variables related to the implementation of standard precautions at Milton Park Medical Centre. The data analysis process will be conducted using the Statistical Package for the Social Sciences (SPSS), a widely recognized software for handling quantitative data. The analysis will begin with descriptive statistics, including frequency distributions, percentages, means, and standard deviations, to summarize participant demographics and overall responses concerning compliance levels and perceived IPC barriers.

Following descriptive analysis, inferential statistical methods will be applied to test hypotheses and determine whether statistically significant relationships exist between key variables. Chi-square tests will be used to examine associations between categorical variables such as job role and reported adherence to standard precautions. Logistic regression analysis will be conducted to identify predictors of IPC compliance, allowing the researcher to assess how factors such as availability of PPE, length of service, and training frequency influence adherence behavior. These statistical techniques align with the study's objective of identifying quantifiable barriers to infection prevention and assessing their impact in a measurable and replicable manner (Kothari, 2018).

No qualitative data analysis will be conducted, as the study excludes narrative, open-ended, or thematic data. The exclusive use of statistical methods ensures objectivity and allows the researcher to test assumptions empirically, providing evidence-based conclusions. The

quantitative focus also enhances the generalizability of the findings, enabling broader application to similar healthcare settings. This data analysis strategy supports the generation of actionable insights that can inform policy adjustments and resource allocation for improved compliance with standard precautions among healthcare workers in private facilities.

3.10 Ethical Considerations

Ethical considerations are a vital component of this quantitative study, particularly because it involves human participants in a healthcare setting. Prior to data collection, ethical clearance will be obtained from a recognized institutional review board or ethics committee to ensure that the research adheres to national and international guidelines for the protection of human subjects. All participants will be provided with an information sheet outlining the purpose, scope, and nature of the study. Informed consent will be obtained in writing from each participant before administering the questionnaire. Participants will be clearly informed of their right to decline participation or withdraw from the study at any time without penalty or loss of benefits (Creswell, 2020).

Confidentiality and anonymity will be rigorously maintained throughout the study. The structured questionnaire will not request names or any identifying personal information, and each completed form will be coded numerically for data entry and analysis. All data will be securely stored, both in physical and digital formats, and access will be restricted to the principal researcher. According to Denzin and Lincoln (2021), the assurance of anonymity in survey-based studies increases response accuracy and encourages truthful disclosure, particularly when assessing sensitive topics like non-compliance with infection control policies.

To minimize any potential risks to participants, the survey will be administered in a private and non-intrusive manner during designated break periods to avoid interfering with their professional responsibilities. The survey questions will be designed to avoid psychological discomfort or coercion, and participants will not be asked to provide opinions on specific individuals or to disclose personally incriminating information. Ethical protocols will be strictly followed throughout the research process, reinforcing the integrity and credibility of the study. Upholding these ethical standards ensures that the rights, welfare, and dignity of the participants are fully protected and that the study meets the ethical benchmarks required for responsible scientific inquiry.

CHAPTER 4

PRESENTATION AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter presents the empirical findings from the quantitative component of the study conducted at Milton Park Medical Centre, which aimed to assess the barriers to implementing standard precautions among healthcare workers. Data were collected through structured self-administered questionnaires from a stratified random sample of 38 participants representing three professional groups: doctors, nurses, and support staff. Stratification was used to ensure proportional representation of each category based on their respective workforce sizes within the medical centre. Specifically, the sample comprised 10 doctors, 20 nurses, and 8 support staff members, reflecting the staffing distribution and ensuring that the perspectives of all key healthcare provider groups were included.

The chapter systematically addresses the three research objectives: identifying institutional barriers, exploring individual-level obstacles, and evaluating the effectiveness of existing infection prevention and control (IPC) policies. Quantitative analysis was conducted using SPSS (Version 26), employing descriptive statistics. Each research objective is addressed using tables, followed by detailed interpretation and discussion rooted in both the Health Belief Model and findings from the literature review. The goal is to ensure a data-driven understanding of IPC adherence challenges within Zimbabwe's private healthcare context. The analysis begins with a summary of the response rate and demographic characteristics, followed by presentation of variable-specific results and interpretation.

4.1 Response Rate

Table 4.1: Questionnaire Distribution and Response Rate

Description	Frequency	Percentage (%)
-------------	-----------	----------------

Questionnaires Distributed	38	100.0%
Valid Questionnaires Returned	36	94.7%
Non-Returned Questionnaires	2	5.3%
Total	38	100.0%

Source: Fieldwork Survey, May 2025

A total of 38 structured questionnaires were administered to healthcare workers at Milton Park Medical Centre, with 36 successfully completed and returned, and only two questionnaires were not returned resulting in a 94.7% response rate.

4.3 Demographic Profile of Respondents

Understanding the demographic profile of healthcare workers is fundamental in assessing variations in perceptions and practices related to infection prevention and control (IPC). The demographic data collected includes gender, age group, professional cadre, years of experience, IPC training, and departmental allocation.

Table 4.3.1: Gender of Respondents

Gender	Frequency	Percentage (%)
Female	25	69.4%
Male	11	30.6%
Total	36	100.0%

Source: Fieldwork Survey, May 2025

Female respondents formed the majority at 69.4%, highlighting their dominant presence in the healthcare workforce sampled. Male respondents accounted for only 30.6% of the participants.

Table 4.3.2: Age Group of Respondents

Age Group	Frequency	Percentage (%)
30–39 years	13	36.1%
40–49 years	10	27.8%

20–29 years	7	19.4%
50 years & above	6	16.7%
Total	36	100.0%

Source: Fieldwork Survey, May 2025

The largest proportion of respondents were aged 30–39 years (36.1%), followed by those aged 40–49 years (27.8%). A smaller group fell within the 20–29 years range (19.4%), while those aged 50 and above were the least represented at 16.7%.

Table 4.3.3: Professional Cadre of Respondents

Cadre	Frequency	Percentage (%)
Nurses	20	55.6%
Support Staff	10	27.8%
Doctors	6	16.7%
Total	36	100.0%

Source: Fieldwork Survey, May 2025

Nurses represented the highest proportion at 55.6%, indicating their central role in the implementation of IPC practices. Support staff followed at 27.8%, while doctors formed the smallest group at 16.7%.

Table 4.3.4: Years of Work Experience at the Facility

Years of Experience	Frequency	Percentage (%)
4–6 years	11	30.6%
1–3 years	9	25.0%
7–10 years	8	22.2%
Over 10 years	5	13.9%
Less than 1 year	3	8.3%

Total	36	100.0%
--------------	-----------	---------------

Source: Fieldwork Survey, May 2025

Respondents with 4–6 years of experience constituted the largest segment at 30.6%, followed by those with 1–3 years (25.0%) and 7–10 years (22.2%). Only 13.9% had over 10 years of service, while the least experienced group (less than 1 year) made up 8.3%.

Table 4.3.5: IPC Training in the Last 12 Months

Response	Frequency	Percentage (%)
Yes	22	61.1%
No	14	38.9%
Total	36	100.0%

Source: Fieldwork Survey, May 2025

A majority of respondents (61.1%) had received IPC training in the past 12 months, showing a reasonable level of institutional support for ongoing education. However, a significant portion (38.9%) had not received such training.

Table 4.3.6: Department/Unit of Work

Department	Frequency	Percentage (%)
Outpatient	11	30.6%
Inpatient	9	25.0%
Emergency	7	19.4%
Theatre	6	16.7%
Other	3	8.3%
Total	36	100.0%

Source: Fieldwork Survey, May 2025

The highest number of respondents worked in outpatient departments (30.6%), followed by inpatient units (25.0%) and emergency departments (19.4%). Theatre staff accounted for 16.7%, while only 8.3% belonged to other departments.

4.4 Institutional Barriers to Standard Precaution Implementation

This section addresses the first objective of the study: to identify institutional barriers affecting the implementation of standard precautions among healthcare workers at Milton Park Medical Centre. Respondents rated five statements using a five-point Likert scale ranging from Strongly Agree (1) to Strongly Disagree (5).

Table 4.4.1: Descriptive Statistics – Institutional Barriers (N = 36)

Statement	Mean	Std. Deviation	Minimum	Maximum	Skewness	Kurtosis
1. Hospital does not provide adequate PPE regularly	2.19	0.78	1	4	0.284	-0.263
2. IPC guidelines not easily accessible in my unit	2.31	0.81	1	4	0.267	-0.197
3. Management does not enforce compliance strictly	2.25	0.73	1	4	0.305	-0.215
4. Lack of regular IPC training and workshops	2.06	0.85	1	4	0.348	-0.178
5. Insufficient staffing to allow proper adherence	2.12	0.79	1	4	0.311	-0.193

Source: Fieldwork Survey, May 2025

The mean values for all statements range between 2.06 and 2.31, indicating general agreement among respondents that institutional barriers to IPC adherence are present. The lowest mean score (2.06) was recorded for the lack of regular IPC training and workshops, while the highest (2.31) pertained to the inaccessibility of IPC guidelines.

4.5 Individual Barriers to Standard Precaution Adherence

This section focuses on personal-level challenges healthcare workers face in following standard precautions.

Table 4.5.1: Descriptive Statistics – Individual Barriers (N = 36)

Statement	Mean	Std. Deviation	Minimum	Maximum	Skewness	Kurtosis
1. Time constraints make it difficult to follow all standard precautions	2.17	0.76	1	4	0.295	-0.184
2. I believe infection risk is low when patients appear healthy	2.03	0.81	1	4	0.337	-0.271
3. I consistently follow hand hygiene protocols between patient interactions	2.44	0.67	1	4	0.145	-0.148
4. I feel standard precautions slow down my workflow	2.29	0.73	1	4	0.215	-0.122
5. I rely on my experience more than official IPC guidelines	2.36	0.79	1	4	0.198	-0.217

Source: Fieldwork Survey, May 2025

Respondents showed mixed levels of agreement across the items, with the lowest mean (2.03) suggesting some belief that healthy-appearing patients pose low infection risk. The highest mean (2.44) was for self-reported compliance with hand hygiene.

4.6 Effectiveness of Existing IPC Policies

This section presents respondents' perceptions regarding the implementation and effectiveness of existing IPC policies.

Table 4.6.1: Descriptive Statistics – Effectiveness of IPC Policies (N = 36)

Statement	Mean	Std. Deviation	Minimum	Maximum	Skewness	Kurtosis
1. The facility has clear policies guiding IPC practices	2.06	0.74	1	4	0.298	-0.251
2. IPC policies are enforced equally across all departments	2.31	0.82	1	4	0.213	-0.168
3. I have received training on IPC policies in the past 12 months	2.12	0.71	1	4	0.251	-0.193
4. IPC audits are regularly conducted at this facility	2.47	0.85	1	4	0.171	-0.132
5. The current IPC policy adequately	2.18	0.78	1	4	0.279	-0.211

supports adherence to precautions						
--	--	--	--	--	--	--

Source: Fieldwork Survey, May 2025

All items had mean values between 2.06 and 2.47, indicating moderate agreement that IPC policies exist and are somewhat effective, with variations in perceived audit regularity and enforcement across departments.

4.5 Chapter Summary

This chapter presented the empirical results obtained from structured questionnaire responses of 36 healthcare workers at Milton Park Medical Centre, with a response rate of 94.7%, indicating high engagement and instrument reliability. The demographic analysis revealed that most respondents were female nurses between the ages of 30 and 49, representing the core workforce of frontline healthcare delivery. The majority had 4–6 years of experience and had received IPC training within the previous 12 months, though disparities were observed across departments and staff categories.

CHAPTER FIVE

Summary, Discussion and Recommendations

5.1 Introduction

This chapter presents the summary of key findings, discusses their implications in light of the Health Belief Model and relevant literature, and proposes evidence-based recommendations to improve adherence to standard precautions among healthcare workers at Milton Park Medical Centre. Drawing from the empirical results of the structured questionnaire administered to 36 respondents across various cadres, the chapter synthesizes both institutional and individual dimensions that shape infection prevention and control (IPC) behaviors. The study's findings are also interpreted in relation to the theoretical framework guiding the research, affirming the role of perceived barriers, cues to action, and self-efficacy in influencing health-related behavior. This chapter begins with a systematic summary of findings under each of the three research objectives. It then presents logical conclusions informed by both quantitative and proposes targeted interventions for institutional leadership, policymakers, and healthcare workers. These recommendations aim to strengthen IPC infrastructure, enhance individual behavioral change, and institutionalize policy enforcement. Together, these efforts are critical in fostering a culture of consistent adherence to standard precautions in private healthcare settings in Zimbabwe and similar low-resource contexts.

5.2 Discussion of Findings

Effectiveness of Existing IPC Policies

Objective 1: Institutional Barriers

The findings from this study revealed that institutional barriers such as insufficient staffing, lack of regular IPC training, and inadequate enforcement of infection prevention and control (IPC)

policies significantly hinder healthcare workers' ability to comply with standard precautions at Milton Park Medical Centre.

These results are strongly supported by existing literature. For instance, Haile et al. (2021) found that healthcare facilities in sub-Saharan Africa often suffer from weak institutional frameworks, where management fails to enforce IPC protocols or provide routine staff supervision, leading to non-adherence. Similarly, Harrison and Walker (2019) emphasized that irregular IPC training and lack of refresher programs directly contribute to poor compliance with hand hygiene and PPE protocols among healthcare staff in the UK highlighting that training is not only essential, but must be consistently reinforced.

Furthermore, Ayalew et al. (2022), in a cross-sectional study from Ethiopia, observed that inadequate staffing levels placed excessive workloads on available personnel, making it difficult for them to comply fully with all IPC procedures. This aligns with findings at Milton Park Medical Centre, where staff shortages were cited as a key barrier to standard precaution adherence. Additionally, Mukherjee and Sen (2022) argue that when leadership fails to actively enforce IPC standards, infection control becomes a low priority, with policies existing on paper but rarely followed in practice a scenario that mirrors the enforcement gaps found in this study. Collectively, this literature confirms that staff shortages, poor IPC training systems, and weak policy enforcement are not isolated challenges but part of broader institutional deficiencies affecting IPC adherence in both developing and developed contexts.

The Health Belief Model (HBM) supports this view by suggesting that perceived barriers such as lack of access to guidelines or resources can prevent the adoption of protective health behaviors, even when awareness exists. Healthcare workers may understand the benefits of standard precautions, yet fail to comply due to systemic limitations beyond their control. This reinforces the idea that institutional structures must be optimized if IPC adherence is to improve. Inconsistencies across departments, as indicated by participants, further suggest fragmented governance and insufficient monitoring mechanisms. Inadequate IPC training during induction and the absence of scheduled audits weaken the cues to action posited by HBM, reducing compliance motivation. Therefore, institutional restructuring, leadership accountability, and increased financial commitment are vital for creating an enabling environment where IPC

measures are practical, enforced, and universally applicable across all departments of Milton Park Medical Centre.

Objective 2: Individual Barriers

The study assessed individual barriers to adherence to standard precautions among 36 healthcare workers at Milton Park Medical Centre. The results revealed: Time Constraints: A considerable proportion of respondents agreed that time limitations made it difficult to consistently follow all standard precautions (Mean = 2.17, SD = 0.76), indicating moderate pressure from workload. Perceived Low Risk: The statement "I believe infection risk is low when patients appear healthy" had a low mean of 2.03 (SD = 0.81), suggesting that some healthcare workers underestimate risk based on patients' appearance. Hand Hygiene Compliance: The highest mean recorded was 2.44 (SD = 0.67) for the statement "I consistently follow hand hygiene protocols between patient interactions", suggesting relatively better (but not strong) self-reported adherence. Workflow Disruption: Respondents moderately agreed that standard precautions slow down workflow (Mean = 2.29, SD = 0.73), pointing to practical inconvenience as a deterrent. Reliance on Experience: The mean score of 2.36 (SD = 0.79) for the statement "I rely on my experience more than IPC guidelines" reflects a tendency among some workers to follow informal routines over institutional standards. . These findings are in line with the Health Belief Model, which explains that perceived susceptibility and severity significantly influence health-related behaviors. In this context, healthcare workers who believe that infection risks are minimal when patients appear healthy, or who trust personal experience more than standardized IPC protocols, are less likely to comply. The findings resonate with a study by Mudzengi and Chikomo (2024), who found that in Zimbabwe, nearly 55% of healthcare workers admitted to skipping hand hygiene when facilities were busy, and 33% reused PPE not due to shortage but habit.

Similarly, Onyango et al. (2022) in Kenya observed that healthcare workers often chose efficiency over adherence due to heavy workloads and peer influence. These attitudes show low perceived threat, minimal self-efficacy, and an absence of behavioral reinforcement all factors emphasized by HBM.

Objective 3: Effectiveness of IPC Policies

The respondents' perceptions regarding the effectiveness of existing Infection Prevention and Control (IPC) policies at the facility show moderate agreement across several key areas. Firstly,

the statement “The facility has clear policies guiding IPC practices” recorded a mean score of 2.06 with a standard deviation of 0.74, indicating that while most healthcare workers acknowledge the presence of IPC policies, the clarity or visibility of these policies may not be uniformly strong. Regarding enforcement, the perception that “IPC policies are enforced equally across all departments” had a slightly higher mean of 2.31 (SD = 0.82), suggesting some variability or inconsistency in how policies are applied throughout different parts of the facility. Training on IPC policies in the past 12 months showed a mean response of 2.12 (SD = 0.71), pointing to a moderate level of recent staff education, but also indicating that not all personnel may have received up-to-date training. Regular IPC audits were perceived somewhat more favorably, with the highest mean of 2.47 (SD = 0.85), reflecting that audits are conducted but perhaps not as frequently or comprehensively as needed. Lastly, the statement “The current IPC policy adequately supports adherence to precautions” scored a mean of 2.18 (SD = 0.78), revealing a moderate confidence among respondents that the policy framework is supportive but potentially insufficient in fully enabling compliance.

The study’s findings correspond with those of Chinogurei et al. (2024), who noted that in Zimbabwean private hospitals, IPC adherence was only 57%, with weaker oversight in private than public facilities. The Health Belief Model’s concept of “cues to action” is particularly relevant here. It emphasizes that visible prompts such as training, supervision, and audits serve as behavioral triggers, reinforcing adherence. When these cues are absent or weak, healthcare workers may deprioritize IPC compliance.

Johnson et al. (2022) similarly found that in Sweden, mandatory audits significantly boosted compliance rates, while Patel et al. (2020) reported wide variance across US states due to inconsistent enforcement. The findings in this study mirror those results, showing that policy existence alone is insufficient without robust institutional commitment to enforcement. Milton Park Medical Centre’s challenge lies not in policy formulation, but in implementation. For IPC policy to be effective, it must be uniformly applied across departments, reinforced with regular staff training, and evaluated through consistent audits. The Health Belief Model further suggests that if healthcare workers perceive institutional commitment as weak, their motivation to comply diminishes. Therefore, the effectiveness of IPC policy hinges on translating written guidelines into

sustained institutional practice, monitored and reinforced through leadership involvement and periodic review.

5.3 Conclusions

The study concludes that adherence to standard precautions at Milton Park Medical Centre is compromised by a combination of institutional and individual barriers. On the institutional level, irregular training, inadequate PPE availability, weak managerial enforcement, and staffing shortages have created an operational environment in which IPC compliance is difficult to sustain. These structural constraints, unless resolved, will continue to undermine the success of infection control measures regardless of awareness or policy documentation. On the individual level, perceptions of time pressure, low infection risk, and preference for experiential over procedural knowledge contribute to suboptimal behavior. These behaviors are further influenced by the absence of regular monitoring and feedback, which diminishes perceived accountability and weakens organizational IPC culture. The Health Belief Model effectively explains these findings, highlighting the critical role of perceived barriers, perceived susceptibility, and cues to action in influencing health-related behavior. To improve IPC adherence, interventions must be multi-level addressing not only technical training but also infrastructure, workflow integration, and staff motivation. Sustained improvement in IPC practice requires leadership commitment, system-wide policy enforcement, and a behavioral change strategy that engages staff at both cognitive and emotional levels.

5.4 Recommendations

Based on the findings and theoretical insights, the following recommendations are proposed:

1. **Institutionalize regular IPC training:** The hospital should adopt a quarterly or biannual training schedule for all cadres, ensuring comprehensive, participatory, and practical training aligned with national and WHO guidelines.
2. **Strengthen managerial enforcement:** IPC policies should be uniformly enforced across all departments through visible leadership support, department-specific audits, and supervisory accountability systems.

3. **Ensure consistent PPE supply and accessibility of guidelines:** The hospital must guarantee uninterrupted access to quality PPE and ensure IPC protocols are displayed and accessible in every unit.
4. **Address staffing and workflow challenges:** Review staffing ratios and implement workflow adjustments that allow sufficient time for safe practice without compromising service delivery.
5. **Promote behavioral change interventions:** Develop peer-led IPC mentorship programs, recognize compliant staff publicly, and integrate behavioral nudges that reinforce precautionary routines.
6. **Establish regular IPC audits and feedback mechanisms:** Institutionalize monthly audits with feedback loops to continuously assess adherence and correct deviation in real time.
7. **Embed IPC indicators in performance appraisal systems:** Linking compliance to incentives can enhance motivation and institutional commitment.

5.5 Implications of the Study

The findings of this study carry important implications for professional practice, policy development, healthcare administration, research, and education within the field of Infection Prevention and Control (IPC).

Professional Practice

The identification of individual barriers such as time constraints, workflow disruptions, and reliance on personal experience suggests that healthcare workers need to cultivate greater discipline and adherence to IPC protocols. Strengthening awareness and fostering behavioral change are crucial to ensuring consistent application of standard precautions, ultimately reducing the risk of healthcare-associated infections.

Policy

The moderate levels of agreement regarding the clarity, enforcement, and training related to IPC policies reveal gaps that need to be addressed. Policymakers must revise and strengthen existing IPC guidelines to ensure they are clear, enforceable, and uniformly applied across all departments. Furthermore, integrating mechanisms for regular policy review and updates can help maintain relevance and effectiveness.

Healthcare Administration

Facility managers and administrators play a vital role in reinforcing IPC practices by prioritizing routine audits, equitable enforcement of policies, and comprehensive training programs. Leadership commitment is essential to creating a culture of safety where adherence to IPC standards becomes a shared responsibility, supported by adequate resources and supervision.

Research

This study highlights the need for further research focused on developing and testing context-specific behavioral interventions tailored to overcome workload pressures and misconceptions about infection risks. Such research should explore innovative strategies to bridge the gap between knowledge and practice in IPC adherence.

Education

The findings highlight the importance of ongoing, practical IPC training integrated within continuous professional development curricula. Educational programs should emphasize real-world application of guidelines, risk awareness, and the dangers of informal routines, equipping healthcare workers with the skills and motivation to comply consistently with IPC standards.

5.6 Chapter Summary

This chapter provided a comprehensive synthesis of the study's key findings, aligning them with the Health Belief Model and contemporary literature on infection prevention and control (IPC). The summary of findings clearly demonstrated that healthcare workers at Milton Park Medical Centre face a range of institutional and individual barriers that constrain adherence to standard precautions. These included insufficient staffing, irregular IPC training, inadequate enforcement of policies, underestimation of infection risks, and workflow-related constraints. The effectiveness of existing IPC policies was found to be compromised by inconsistent implementation and a lack of regular monitoring mechanisms, despite the availability of formal guidelines. The discussion drew on the Health Belief Model to interpret the data, emphasizing that perceived barriers, low threat perception, and weak cues to action significantly reduce the likelihood of compliant behavior. Based on these insights, the study concluded that IPC improvements require a dual approach that addresses both systemic constraints and individual behavioral drivers. The chapter concluded with seven targeted recommendations focusing on training, resource allocation, managerial oversight, workflow integration, and behavioral motivation. Together, these strategies

aim to enhance compliance, safeguard staff and patients, and strengthen IPC culture in Zimbabwe's private healthcare sector.

REFERENCES

- Adebayo, T., et al. (2021). Knowledge, attitudes, and practices of healthcare workers regarding standard precautions in Nigeria. *Nigerian Journal of Clinical Practice*, 24(5), 56–68.
- Akanbi, M. O., et al. (2021). Infection prevention and control challenges in low-resource settings. *African Journal of Health Sciences*, 18(2), 34–49.
- Akanbi, O. A., Olatunji, O. O., & Adebisi, A. O. (2021). Impact of infection control policies on healthcare worker compliance: A systematic review. *International Journal of Infectious Diseases*, 103, 324–333.
- Ahmed, R., et al. (2023). Barriers to infection prevention and control in Sudan’s healthcare facilities. *Journal of Global Health*, 12(4), 210–225.
- Ahmed, R., Elshiekh, M. M., & Yousif, M. A. (2023). Institutional challenges in infection prevention and control: Evidence from Sudanese hospitals. *African Journal of Infection Control*, 15(1), 34–45. <https://doi.org/10.4314/ajic.v15i1.5>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Alhumaid, S., et al. (2021). Healthcare-associated infections: Prevention and control strategies. *Journal of Infection Control*, 45(3), 112–125.
- Alhumaid, S., Al Mutair, A., Al Alawi, Z., et al. (2021). Barriers to infection control practices among healthcare workers: A systematic review. *Journal of Global Health*, 11, 05022.
- Allegranzi, B., Bagheri Nejad, S., & Creta, A. (2020). Global strategies to improve hand hygiene compliance in healthcare settings: Lessons from WHO initiatives. *The Lancet Infectious Diseases*, 20(10), e256–e264.
- Allegranzi, B., et al. (2020). Hand hygiene compliance in healthcare settings. *WHO Bulletin*, 98(5), 365–375.
- Ayalew, T., Getachew, T., & Demeke, T. (2022). Healthcare workers’ adherence to infection prevention practices: A cross-sectional study from Ethiopia. *BMC Infectious Diseases*, 22, 110.

- Bouchoucha, S., & Moore, K. (2019). The role of personal protective equipment in preventing pathogen transmission. *Infection Control and Hospital Epidemiology*, 40(7), 711–718.
- Bouchoucha, S., & Moore, K. (2019). The impact of personal protective equipment use on healthcare workers' adherence to standard precautions: A qualitative study. *Journal of Hospital Infection*, 102(2), 120–126.
- Brown, A., et al. (2020). Healthcare workers' adherence to infection prevention guidelines in Canada. *Canadian Journal of Public Health*, 111(6), 734–745.
- Carter, J., & Nguyen, T. (2021). Leadership roles and IPC compliance in Australian hospitals: A cross-sectional analysis. *Australasian Medical Journal*, 14(3), 95–104. <https://doi.org/10.3316/AMJ.14.3.95>
- Carter, J., & Nguyen, L. (2021). Institutional support and compliance with infection control measures in Australia. *Australian Journal of Infection Control*, 29(1), 22–35.
- Chikanya, A., Moyo, T., & Nyakabau, A. (2024). Compliance to infection prevention standards in private medical centres in Harare: A case study of Milton Park Medical Centre. *Zimbabwe Journal of Health Research*, 12(2), 55–66.
- Chinogurei, M., et al. (2024). Infection prevention and control challenges in Zimbabwe's private healthcare sector. *Zimbabwe Journal of Public Health*, 32(1), 14–29.
- Costa, R., et al. (2023). Policy enforcement and infection control in Brazil's public hospitals. *Brazilian Journal of Infectious Diseases*, 27(3), 312–329.
- Creswell, J. W. (2020). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.
- Denzin, N. K., & Lincoln, Y. S. (2021). *The SAGE handbook of qualitative research* (5th ed.). Sage Publications.
- Deressa, W., Worku, A., Abebe, D., & Getachew, A. (2020). Workload and infection prevention compliance among nurses in resource-limited settings: An Ethiopian perspective. *African Journal of Nursing and Midwifery*, 25(2), 44–58.

- Glanz, K., Rimer, B. K., & Viswanath, K. (2020). *Health behavior: Theory, research, and practice* (6th ed.). Jossey-Bass.
- Haile, T., Kassahun, H., & Mekonnen, S. (2021). Institutional factors affecting compliance with standard precautions: A qualitative study from sub-Saharan Africa. *BMC Health Services Research*, 21, 987.
- Harrison, T., & Walker, P. (2019). The impact of training programs on infection control compliance in the UK. *British Journal of Infection Control*, 28(2), 89–103.
- Johnson, P., et al. (2022). Evaluating infection prevention and control policies in Sweden. *Scandinavian Journal of Public Health*, 50(5), 345–358.
- Kamara, T., et al. (2023). Challenges in implementing infection control policies in the Central African Republic. *African Journal of Health Policy*, 19(3), 210–225.
- Kamau, P., et al. (2022). Infection prevention knowledge and practices in Somalia's healthcare facilities. *East African Medical Journal*, 99(3), 145–159.
- Kothari, C. R. (2018). *Research methodology: Methods and techniques* (3rd ed.). New Age International.
- Kumar, R. (2019). *Research methodology: A step-by-step guide for beginners* (4th ed.). Sage Publications.
- Labrague, L. J., Hammad, K., Gloe, D. S., McEnroe-Petitte, D. M., Fronda, D. C., Obeidat, A. A., & Leocadio, M. C. (2021). Barriers to effective infection prevention control in healthcare settings: A multi-country study. *Journal of Nursing Scholarship*, 53(2), 136–144.
- Lee, H., Kim, J., & Choi, S. (2022). Knowledge gaps and behavioral risks in South Korean infection control among nurses. *International Journal of Environmental Research and Public Health*, 19(4), 1984. <https://doi.org/10.3390/ijerph19041984>
- Mahmoud, M. A., & Salama, M. (2020). Challenges in enforcing infection prevention and control policies in private healthcare settings: An Egyptian case study. *Infection Control & Hospital Epidemiology*, 41(12), 1479–1485.

- Mendes, L., et al. (2022). Infection prevention strategies in Brazilian healthcare settings. *Brazilian Journal of Infection Control*, 26(3), 240–256.
- Miller, R. J., Schroeder, M., & Lang, T. (2020). Infection prevention adherence in German tertiary hospitals: The role of institutional support. *BMC Health Services Research*, 20(1), 915. <https://doi.org/10.1186/s12913-020-05769-8>
- Miller, R., et al. (2020). Institutional commitment to infection control in Germany. *German Journal of Public Health*, 40(2), 112–128.
- Moyo, T., & Chikwasha, V. (2021). Adherence to standard precautions among nurses in Zimbabwean private hospitals: An observational study. *African Journal of Health Sciences*, 18(3), 230–245.
- Mukherjee, D., & Sen, R. (2022). The role of leadership in enhancing infection control compliance. *Journal of Healthcare Management*, 65(1), 22–38.
- Mukherjee, S., & Sen, P. (2022). Assessing the role of workplace culture in compliance with infection control measures: A global perspective. *International Journal of Occupational Medicine and Environmental Health*, 35(4), 456–470.
- Patel, S., et al. (2020). Variability in infection control compliance across US states. *American Journal of Infection Control*, 48(5), 321–338.
- Rajan, R., Sharma, V., & Banerjee, S. (2023). Infection control disparities between private and public hospitals in India: A comparative study. *Indian Journal of Community Medicine*, 48(1), 21–26. https://doi.org/10.4103/ijcm.ijcm_38_23
- Rajan, P., et al. (2023). Infection control practices in India's private hospitals. *Indian Journal of Infection Control*, 39(2), 210–225.
- Rosenstock, I. M. (1974). Historical origins of the Health Belief Model. *Health Education Monographs*, 2(4), 328–335. <https://doi.org/10.1177/109019817400200403>
- Sato, K., Nakajima, K., & Suzuki, A. (2021). Barriers to infection control in Japanese healthcare facilities: A systematic review. *Journal of Infection Control*, 56(3), 102–118.

Searle, D., et al. (2020). Infection prevention and control in low-resource settings: A review of strategies. *Global Health Action*, 13(1), 1–14.

Thakur, M. (2019). *Research methodology in social sciences* (1st ed.). Sage Publications.

WHO (2020). *Global action plan on antimicrobial resistance*. World Health Organization.

Yin, R. K. (2021). *Case study research and applications: Design and methods* (7th ed.). Sage Publications.