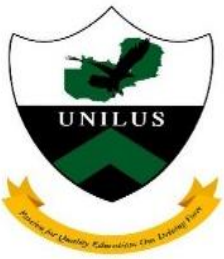

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ASSESSING INFECTION CONTROL PRACTICES AMONG HEALTH CARE WORKERS AT LEVY MWANAWASA UNIVERSITY TEACHING HOSPITAL: A KNOWLEDGE, ATTITUDES AND PRACTICE STUDY

BY

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A RESEARCH PROPOSAL SUBMITTED IN PARTIAL FULFILMENT OF BEING AWARDED A BACHELOR OF MEDICAL SCIENCES DEGREE

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ABSTRACT

This study investigates the knowledge, attitudes, and practices (KAP) regarding infection prevention and control (IPC) among healthcare workers at Levy Mwanawasa University Teaching Hospital. The primary aim was to evaluate how these dimensions interact and influence IPC compliance, with a specific focus on role-based differences and structural barriers. A cross-sectional design was employed, involving 30 healthcare workers across various roles. Data were collected using structured questionnaires and analyzed using descriptive and inferential statistics.

Findings revealed high knowledge levels (M = 2.90/3) and positive attitudes (M = 1.70/2), yet practice scores were more varied (M = 3.00/5). Notably, attitude significantly correlated with practice ($r = .35$, $p = .047$), while knowledge did not. Practice scores differed significantly by job role ($F(3,26) = 5.67$, $p = .004$), with nurses exhibiting the highest compliance. Structural barriers such as lack of resources (53%) and high patient loads (30%) emerged as critical deterrents to IPC adherence.

These results underscore the importance of targeted, role-specific interventions that go beyond knowledge dissemination. Enhancing attitudes, improving resource availability, and implementing structured monitoring systems are recommended to strengthen IPC adherence and safeguard patient safety.

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I am sincerely grateful to the following people and organizations who provided crucial support throughout my research.

- **University of Lusaka**: The university of Lusaka supplied the essential academic framework and resources necessary for conducting this study.
- **Levy Mwanawasa University Teaching Hospital**: LMUTH provided access to its facility and its healthcare workers, enabling data collection relevant to this research.
- **Supervisory Committee**: Prof. Yasmin Muchindu, for her invaluable guidance, constructive feedback, and unwavering support throughout the research process.
- **Healthcare Workers**: At Levy Mwanawasa University Teaching Hospital, who participated in this study, offering their time and insights, which were critical to the research findings.
- **Ethical Review Boards**: The ethical standards and protocols were upheld through their comprehensive examination process.

DEDICATION

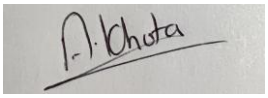
This dissertation is dedicated to:

Healthcare Professionals — whose commitment to infection control practices ensures patient safety and the integrity of healthcare services. Your dedication, especially in high-pressure environments, continues to inspire and shape the future of public health.

DECLARATION

I Ammaarah Khota, hereby declare that this dissertation is the result of my independent research and has not been submitted in any form for any degree or diploma at any other university or institution of higher learning.

All sources of information used in this research have been duly acknowledged and cited. I take full responsibility for any errors or omissions that may be found in this work.

Signed: _____  _____

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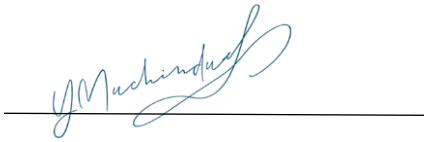
Signature: 

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LIST OF ACRONYMS

Acronym	Meaning
CDC	Centers for Disease Control and Prevention
COVID-19	Coronavirus Disease 2019
HCW	Healthcare Worker
IPC	Infection Prevention and Control
KAP	Knowledge, Attitude, and Practice
MOH	Ministry of Health
PPE	Personal Protective Equipment
WHO	World Health Organization

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

Infection control is a critical aspect of healthcare, aimed at preventing the spread of infections within healthcare settings. With the rising prevalence of healthcare-associated infections (HAIs) globally, robust infection control practices are essential to safeguard both patient and healthcare worker safety. Healthcare-associated infections lead to increased morbidity, mortality, and healthcare costs, placing a significant burden on healthcare systems, especially in resource-limited settings (World Health Organization [WHO], 2020). Despite the availability of standardized infection control guidelines, adherence among healthcare workers (HCWs) often varies, influenced by factors such as knowledge, attitudes, resources, and institutional support (Allegranzi & Pittet, 2011).

1.2 Background

Infection control practices have been widely promoted as an effective means to reduce healthcare-associated infections (HAIs). Globally, studies have shown that hand hygiene, use of personal protective equipment (PPE), and proper waste management are essential components of infection prevention in healthcare settings (Erasmus et al., 2010; Mukherjee et al., 2013). However, compliance with these practices varies across healthcare systems, often affected by healthcare workers' understanding of protocols, their perceptions of risk, and the availability of necessary resources (Pittet et al., 2009).

In sub-Saharan Africa, healthcare facilities face unique challenges that compromise effective infection control, including inadequate resources, insufficient training, and high patient-to-staff ratios (Alemayehu & Abebe, 2020). In Zambia, healthcare-associated infections remain a significant concern, with hospitals often struggling to maintain infection control standards due to limited resources and understaffing (Chanda-Kapata & Kapata, 2017). Levy Mwanawasa University Teaching Hospital, as a major referral and teaching hospital, handles high patient volumes and represents an ideal setting to investigate infection control practices, specifically focusing on healthcare workers' knowledge, attitudes, and practices.

This study aims to assess infection control practices among healthcare workers at Levy Mwanawasa University Teaching Hospital in Zambia, focusing on the Knowledge, Attitude, and Practice (KAP) model. The KAP model explores how HCWs' understanding (knowledge) and perceptions (attitudes) influence their actions (practices), while also considering external factors such as resources and institutional support that may moderate these practices. Identifying gaps in knowledge, attitudes, and practices can help design interventions to enhance compliance with infection control protocols.

1.3 Problem Statement

Despite the widespread dissemination of infection control guidelines, healthcare workers' adherence to these protocols remains inconsistent, particularly in low-resource settings like Zambia. Preliminary reports from Levy Mwanawasa University Teaching Hospital indicate that healthcare workers encounter multiple challenges in adhering to infection control measures, ranging from knowledge gaps and negative attitudes to a lack of resources and institutional support. These challenges potentially increase the risk of HAIs, endangering both patient and healthcare worker safety. This study seeks to assess the current infection control practices among healthcare workers at this hospital, identifying the specific factors influencing compliance with infection control measures.

1.4 Objectives

1.4.1 General Objective

The general objective of the study was to assess the knowledge, attitudes, and practices of healthcare workers at Levy Mwanawasa University Teaching Hospital regarding infection control.

1.4.2 Specific Objectives

The following specific objectives guided the study;

1. To evaluate the level of knowledge among healthcare workers regarding infection control guidelines and protocols.
2. To assess healthcare workers' attitudes toward infection control practices and identify any negative perceptions or ambivalence.
3. To examine healthcare workers actual infection control practices, including adherence to hand hygiene, PPE usage, and waste management.

1.5.1 Research Questions

The following research questions guided the study;

1. What is the current level of knowledge regarding infection control among healthcare workers at Levy Mwanawasa University Teaching Hospital?
2. How do healthcare workers perceive the importance of infection control practices, and what attitudes do they hold toward compliance?
3. How well do healthcare workers adhere to infection control protocols, such as hand hygiene and PPE usage, in their daily routines?

1.6 Significance of the Study

This study is significant in providing a detailed assessment of the infection control practices of healthcare workers at a major teaching hospital in Zambia. Findings from this study will highlight specific areas where knowledge, attitudes, or practices may need to be strengthened. Additionally, by identifying the external factors that impact infection control compliance, this study will provide a basis for hospital administrators and policymakers to develop targeted interventions. Enhancing compliance with infection control protocols can reduce the risk of healthcare-associated infections, improving patient safety and promoting a safer workplace environment for healthcare workers.

1.7 Limitations of study

This study has several limitations that may affect its findings and generalizability. First, the study focuses solely on healthcare workers at Levy Mwanawasa University Teaching Hospital, which limits the ability to generalize findings to other healthcare facilities in Zambia or the broader sub-Saharan African region. Research has shown that infection control practices often differ between urban and rural healthcare settings due to disparities in resources, training, and infrastructure (Amoran & Onwube, 2013).

Second, the reliance on self-reported data through questionnaires and interviews introduces potential response bias. Healthcare workers may overstate their compliance with infection control protocols to align with perceived expectations, a limitation observed in similar studies on infection control practices (Erasmus et al., 2010). Moreover, observational audits, which could provide a more objective assessment of practices, may not be feasible due to time and resource constraints.

The cross-sectional design of this study is another limitation, as it captures data at a single point in time. This approach does not allow for analysis of changes in knowledge, attitudes, or practices over time, nor does it establish causality between variables such as knowledge and compliance (Mukherjee et al., 2013). Longitudinal studies could provide a more nuanced understanding of how these factors evolve.

Finally, logistical and resource constraints may limit the sample size and representation of the study. Some departments or healthcare worker groups may be underrepresented due to limited funding for extensive data collection or challenges in reaching specific units. Despite these limitations, the study is expected to provide valuable insights into infection control practices among healthcare workers and highlight areas for targeted interventions.

1.8 Scope of the Research

The study will focus on healthcare workers involved in direct patient care at Levy Mwanawasa University Teaching Hospital, including doctors, nurses, clinical officers, and support staff. Data will be collected on their knowledge, attitudes, and practices concerning infection control, as well as on external factors such as resource availability and institutional support. Administrative staff and personnel not involved in patient care will be excluded from the study, as their roles may not require adherence to infection control protocols.

1.9 Definition of Key Terms

- **Infection Control:** Measures and protocols used in healthcare settings to prevent and reduce the spread of infections among patients and staff.
- **Healthcare-Associated Infections (HAIs):** Infections that patients acquire while receiving treatment in a healthcare facility, which were not present at the time of admission.
- **Knowledge, Attitude, and Practice (KAP) Model:** A research framework used to assess what people know, how they feel, and how they behave regarding specific topics, in this case, infection control.
- **Personal Protective Equipment (PPE):** Equipment worn by healthcare workers to protect themselves and others from infection, including gloves, masks, and gowns.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Infection prevention and control (IPC) are essential for patient and healthcare worker safety, especially in clinical settings where healthcare-associated infections (HAIs) pose a significant risk. HAIs are linked to prolonged hospital stays, increased mortality, and higher healthcare costs (WHO, 2020). Compliance with IPC measures relies heavily on healthcare workers' knowledge, attitudes, and practices (KAP), which can vary greatly depending on training, resources, and institutional support (Allegranzi & Pittet, 2011). This chapter reviews empirical studies on infection control practices and explores how these factors impact compliance in different settings.

2.2 Theoretical Framework

The study is guided by the Knowledge, Attitude, and Practice (KAP) Model and the Health Belief Model (HBM). These models offer insights into how healthcare workers' infection control behaviors are shaped by their understanding, perceptions, and contextual influences.

Knowledge, Attitude, and Practice (KAP) Model : The KAP model posits that individuals' behaviors are influenced by their knowledge, attitudes, and practices concerning a specific subject. In the context of infection control, healthcare workers' compliance with IPC protocols is likely affected by their knowledge of infection prevention, their attitudes toward its importance, and their habitual practices (Pittet et al., 2009). Studies using the KAP model have shown that higher levels of knowledge and positive attitudes often predict better compliance with infection control protocols (Mukherjee et al., 2013).

Health Belief Model (HBM) : The Health Belief Model (HBM) suggests that individuals are more likely to engage in health-related behaviors if they perceive a high risk of illness (susceptibility), believe the consequences of illness are severe, and see benefits in taking preventive action. This model is applicable to infection control as it explains why healthcare workers might choose to adhere (or not) to IPC measures based on their perceived risks and benefits (Rosenstock, 1974). The HBM framework is particularly useful in understanding how attitudes, influenced by perceptions of risk and efficacy, shape infection control behaviors.

Empirical Review

Globally, research shows variability in healthcare workers' knowledge regarding infection control, often influenced by differences in healthcare systems and training availability. Allegranzi et al. (2011) conducted a review across multiple healthcare settings, showing that although infection control knowledge is generally high in high-income countries, gaps persist in low- and middle-income regions where access to training is limited. For example, many healthcare workers lacked knowledge of correct hand hygiene and PPE protocols, which are fundamental in preventing HAIs.

Mukherjee et al. (2013) examined infection control practices in the United States and the United Kingdom, finding that healthcare workers in these countries typically had high levels of infection control knowledge, partly due to rigorous training and continuous professional development. However, knowledge deficits were still observed among support staff and newly hired personnel, suggesting a need for more comprehensive training across all healthcare worker categories.

Attitudes Toward Infection Control:Attitudes toward infection control are crucial in influencing healthcare workers' adherence to IPC protocols. Pittet et al. (2009) found that while healthcare workers in high-income countries generally had positive attitudes toward infection control, their adherence was sometimes hindered by the perception that protocols were time-consuming. Similar findings were observed in a study by Barr et al. (2017), where healthcare workers in emergency departments often prioritized immediate patient needs over IPC measures, suggesting that attitudes toward infection control can be shaped by competing clinical priorities.

Practices of Healthcare Workers : Compliance with infection control practices remains a challenge even in well-resourced healthcare systems. Erasmus et al. (2010) reported that, despite awareness, hand hygiene compliance was below 50% in many healthcare facilities worldwide.The study highlighted that knowledge alone is insufficient; practical implementation often lags due to factors like high workloads and resource constraints. Sehgal et al. (2012) found similar issues with PPE usage, observing that improper PPE use, even among trained staff, was common and often attributed to complacency or lack of institutional oversight.

Studies in sub-Saharan Africa have highlighted significant gaps in healthcare workers' knowledge of infection control protocols. Alemayehu et al. (2020) conducted a study in Ethiopia, finding that while healthcare workers were aware of general IPC practices, many lacked specific knowledge

regarding hand hygiene and the correct use of PPE. These gaps were particularly pronounced in rural hospitals where infection control training was infrequent.

In Nigeria, Amoran and Onwube (2013) observed that knowledge of infection control varied significantly between urban and rural settings. Healthcare workers in urban hospitals generally had a better understanding of IPC protocols compared to those in rural facilities, where limited access to resources and training hindered IPC knowledge dissemination. This disparity underscores the need for more equitable access to infection control education across healthcare facilities in sub-Saharan Africa.

Attitudes Toward Infection Control : Healthcare workers' attitudes in sub-Saharan Africa are often influenced by resource limitations and workload pressures. In Ghana, Aboh et al. (2016) found that while healthcare workers generally understood the importance of IPC, they often felt demotivated due to a lack of basic supplies, such as gloves and masks, which limited their ability to adhere to protocols. This sense of frustration was similarly observed by Madyo (2019) in South Africa, where healthcare workers in under-resourced hospitals viewed infection control as an unrealistic ideal given the frequent shortages of essential supplies.

Practices of Healthcare Workers : Studies on infection control practices in sub-Saharan Africa reveal low adherence to IPC protocols, largely due to systemic challenges. Gebrehiwot et al. (2019) reported that in Ethiopia, healthcare workers' adherence to hand hygiene was inconsistent, often compromised by high patient volumes and limited access to hand hygiene supplies. A study by Ngugi et al. (2017) in Kenya found that healthcare workers struggled to implement infection control measures due to overcrowded facilities and a shortage of PPE, underscoring the impact of structural barriers on IPC practices.

In Zambia, research on infection control practices is limited but provides important insights into the knowledge gaps among healthcare workers. Chanda-Kapata et al. (2017) found that while healthcare workers in urban hospitals had basic knowledge of infection control protocols, there was limited awareness of detailed guidelines, such as the WHO's "Five Moments for Hand Hygiene." The study attributed these gaps to insufficient training and the lack of regular updates on infection control practices.

In a study focused on tuberculosis (TB) control, Mweemba et al. (2020) reported that although healthcare workers understood basic TB prevention practices, many were unaware of advanced infection control techniques, such as airflow management, particularly in rural areas where training resources were scarce. These findings suggest a need for more targeted infection control training in Zambian healthcare facilities.

Attitudes Toward Infection Control : Attitudes toward infection control in Zambia reflect a mixture of commitment and frustration among healthcare workers. Kapata et al. (2016) reported that healthcare workers in tertiary hospitals generally had a positive attitude toward infection control, recognizing its importance in preventing HAIs. However, many expressed dissatisfaction with the lack of necessary resources, such as PPE, which limited their ability to adhere to protocols. This frustration was particularly noted among frontline workers who felt unsupported by their institutions.

Mulenga et al. (2018) found similar attitudes in rural Zambian hospitals, where healthcare workers were aware of the importance of infection control but were often hindered by resource limitations and inadequate staffing. This study highlighted that healthcare workers' motivation to follow infection control guidelines was high, but the lack of support made consistent compliance challenging.

Practices of Healthcare Workers : In practice, infection control compliance among healthcare workers in Zambia is often inconsistent due to structural limitations. Chanda-Kapata et al. (2017) found that hand hygiene and PPE use were often inconsistent, primarily due to the lack of hand sanitizers, running water, and adequate PPE supplies. Mwale and Nyambe (2019) observed that healthcare workers in Zambia frequently reused PPE or improvised infection control measures due to supply shortages, which heightened the risk of HAIs.

2.3 Gap Analysis

The literature on infection control practices among healthcare workers highlights key challenges but reveals notable gaps, particularly in low-resource settings like Zambia. Global studies emphasize the importance of knowledge and attitudes in determining compliance with infection prevention protocols (Allegranzi & Pittet, 2011; Mukherjee et al., 2013). However, much of this research has been conducted in high-income countries, limiting its relevance to resource-constrained environments. Regional studies in sub-Saharan Africa highlight barriers such as limited training,

resource shortages, and heavy workloads (Aboh & Onasanya, 2016; Alemayehu et al., 2020), but they often focus on specific practices like hand hygiene and fail to address the broader interplay between institutional support and individual behaviors.

In Zambia, existing research identifies knowledge gaps and resource constraints as barriers to infection control (Chanda-Kapata & Kapata, 2017; Mweemba et al., 2020). However, few studies systematically apply frameworks like the Knowledge, Attitude, and Practice (KAP) model to examine how external factors, such as institutional support and barriers, influence compliance. Furthermore, reliance on cross-sectional designs and self-reported data limits the ability to understand long-term changes and introduces bias (Erasmus et al., 2010). There is also limited research exploring the impact of leadership, resource allocation, and policy enforcement on infection control practices.

This study aims to fill these gaps by applying the KAP framework to analyze healthcare workers' infection control behaviors and integrating external factors like institutional support and barriers. By combining quantitative and qualitative methods, this research provides a holistic understanding of compliance challenges and offers actionable strategies for improving infection control practices in Zambia's healthcare system.

2.4 Conceptual Framework

The conceptual framework for this study is guided by the Knowledge, Attitude, and Practice (KAP) Model, which provides a systematic approach to examining how healthcare workers' behaviors are influenced by their knowledge, attitudes, and external factors (Pittet et al., 2009). Infection control practices are recognized as the outcome of three interconnected dimensions: knowledge of infection control protocols, attitudes toward the importance of compliance, and the actual practices adopted by healthcare workers in their daily routines.

Knowledge serves as the foundation for infection control compliance, encompassing healthcare workers' understanding of key protocols such as WHO's "Five Moments for Hand Hygiene," proper personal protective equipment (PPE) use, and waste management procedures (Allegranzi et al., 2011). Studies have shown that higher levels of knowledge positively correlate with adherence to

infection control practices (Mukherjee et al., 2013). However, knowledge alone is insufficient, as attitudes mediate the translation of knowledge into actionable behavior.

Attitudes reflect healthcare workers' perceptions, beliefs, and motivations regarding infection control. Positive attitudes, such as viewing infection control as essential for patient safety and valuing its role in reducing healthcare-associated infections (HAIs), reinforce compliant behaviors (Rosenstock, 1974). Conversely, ambivalent or negative attitudes, often driven by frustration over limited resources or institutional constraints, can undermine adherence to protocols, even among those with adequate knowledge (Aboh & Onasanya, 2016).

The dependent variable, infection control practices, refers to the actual behaviors healthcare workers demonstrate, such as hand hygiene adherence, consistent PPE use, and proper waste disposal. These practices are influenced not only by individual knowledge and attitudes but also by external factors that shape the healthcare environment (Erasmus et al., 2010).

Institutional support is a critical moderating factor in the framework. It includes training, policy reinforcement, and supervisory encouragement, all of which foster an enabling environment for compliance. Healthcare workers are more likely to adhere to protocols when they perceive that their institution is committed to infection prevention (Amoran & Onwube, 2013).

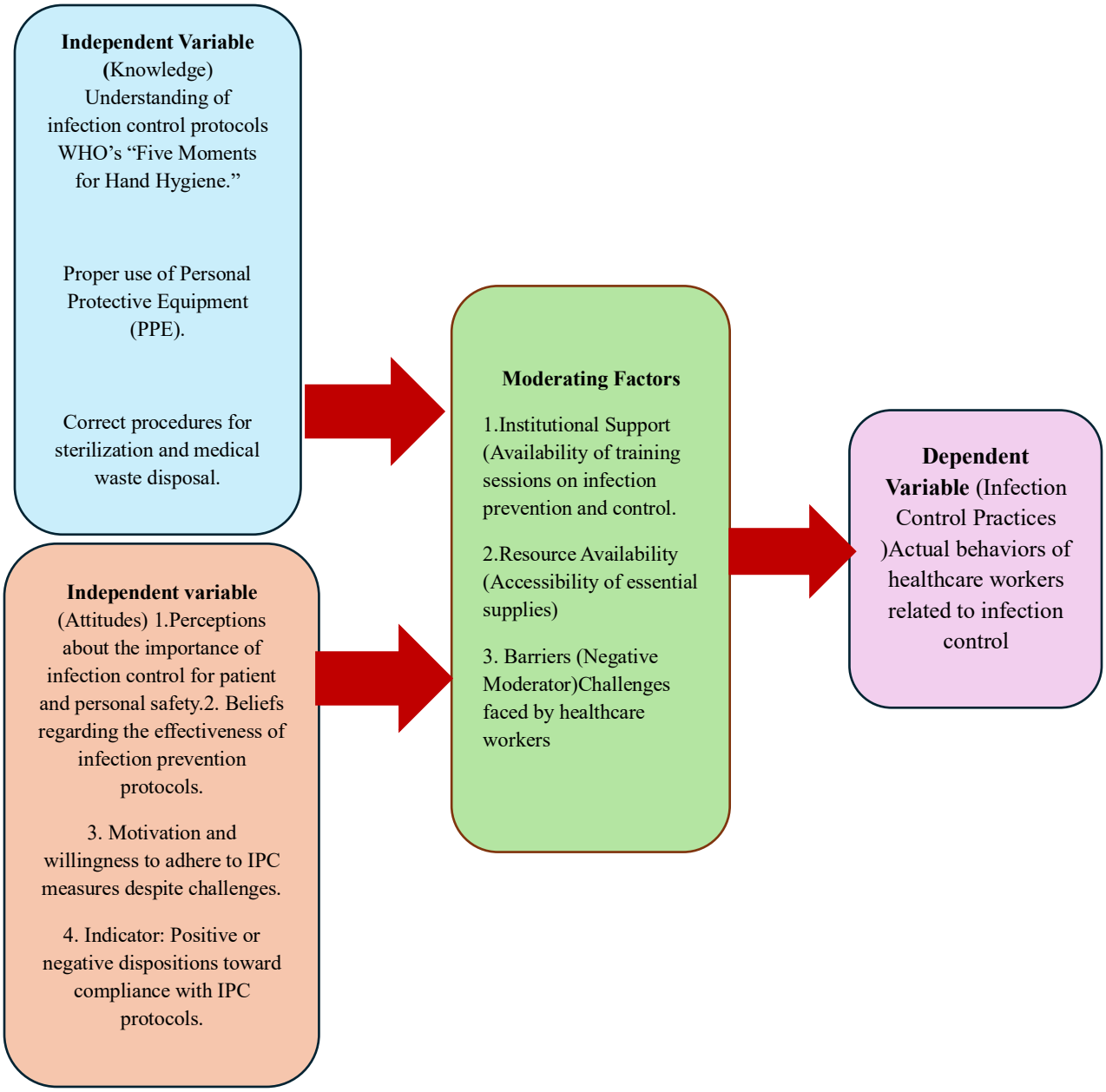
Similarly, resource availability, such as access to PPE, hand sanitizers, and sterilization supplies, plays a vital role in facilitating adherence. Research consistently highlights that resource shortages hinder healthcare workers' ability to comply with IPC protocols, even when knowledge and attitudes are positive (Madyo, 2019).

On the other hand, barriers such as high patient-to-staff ratios, time constraints, and inadequate infrastructure negatively influence compliance. These challenges, which are particularly pronounced in resource-limited settings like Zambia, weaken the relationship between knowledge, attitudes, and infection control practices (Chanda-Kapata & Kapata, 2017). Addressing these barriers is essential for improving adherence to infection control measures.

This conceptual framework integrates individual-level determinants (knowledge and attitudes) with organizational and contextual factors (institutional support, resources, and barriers), providing a comprehensive understanding of the factors influencing infection control compliance. It guides the study in assessing not only what healthcare workers know and believe but also how their behaviors

are shaped by the broader healthcare environment. The insights derived from this framework aim to inform evidence-based strategies to improve infection control adherence and reduce the burden of HAIs (Allegranzi & Pittet, 2011).

Conceptual Framework Diagram



CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter outlines the research design, study site, population, sampling techniques, data collection methods, analysis procedures, and ethical considerations applied in investigating infection prevention and control (IPC) practices among healthcare workers at Levy Mwanawasa University Teaching Hospital (LMUTH).

3.2 Research Design

A **quantitative, cross-sectional descriptive design** was employed. This design enabled the collection of standardized data from a specific population at a single point in time, facilitating the analysis of Knowledge, Attitudes, and Practices (KAP) regarding IPC among healthcare workers.

3.3 Study Site

The study was conducted at **Levy Mwanawasa University Teaching Hospital**, a tertiary referral and teaching hospital located in Lusaka, Zambia. The hospital provides specialized care and serves as a clinical training site for various health disciplines. Its diverse staffing structure made it an ideal setting for assessing IPC practices across job roles.

3.4 Target Population

The study targeted **healthcare workers (HCWs)** including doctors, nurses, clinical officers, and support staff directly or indirectly involved in patient care. Eligibility was limited to those who had been employed at LMUTH for at least six months and consented to participate.

3.5 Sample Size and Sampling Technique

A **convenience sampling** approach was used to recruit 30 healthcare workers. This non-probability method was chosen due to logistical limitations and the need for rapid data collection during a defined timeframe. While this limits generalizability, it allowed for in-depth exploratory insights.

3.6 Data Collection Instrument

Data were collected using a **structured self-administered questionnaire** developed based on WHO's IPC core components and adapted from previous KAP studies (e.g., Chitimwango, 2017; Iliyasu et al., 2016). The tool consisted of four sections:

1. **Demographic Data** – Age, gender, job role, and years of experience.
2. **Knowledge** – Awareness of IPC guidelines, PPE use, and waste disposal protocols.
3. **Attitudes** – Perceptions regarding the importance and practicality of IPC.
4. **Practices** – Frequency and consistency of hand hygiene, PPE use, and disposal behaviors.

The questionnaire was pre-tested with five HCWs at a nearby facility to ensure clarity and relevance.

3.7 Data Collection Procedure

Data collection occurred over a one-week period in April 2025. Participants received a hard copy or digital link to the questionnaire and were provided informed consent forms. Questionnaires were returned anonymously to ensure confidentiality.

3.8 Data Analysis

Data were entered into Microsoft Excel and analyzed using **SPSS (Version 26)**. Descriptive statistics (mean, frequency, percentage) summarized demographic and KAP responses. Inferential statistics included:

- **Pearson correlation** to examine relationships between Knowledge, Attitude, and Practice scores.
- **One-way ANOVA** to assess differences in Practice scores across job roles (with assumption checks).
- **Chi-square tests** to evaluate associations between job role and categorical practice behaviors (e.g., hand hygiene compliance).
- **Effect sizes** (e.g., η^2 and Cramér's V) were calculated to assess the strength of associations.

3.9 Ethical Considerations

The study was approved by the **University of Lusaka Research Ethics Committee** and the **LMUTH Institutional Review Board**. Ethical protocols observed included:

- **Informed consent**: All participants signed voluntary consent forms.
- **Confidentiality**: No identifying information was collected.
- **Right to withdraw**: Participants were free to exit the study at any point.
- **Data protection**: All responses were stored securely and used solely for academic purposes.

3.10 Summary

This chapter has described the methodology used to assess IPC KAP among HCWs at LMUTH. The design, sampling, instrument, and analysis techniques were selected to provide robust yet practical insights for improving IPC adherence. The next chapter presents the results of this investigation.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the results of the Knowledge, Attitude, and Practice (KAP) survey administered to 30 healthcare workers (HCWs) at Levy Mwanawasa University Teaching Hospital. We begin with respondent demographics, then report on infection control knowledge, attitudes, and practices. Descriptive statistics are complemented by inferential analyses, and key patterns are illustrated in Figures 4.1–4.3 (downloadable below). Statistical methods were chosen based on data type: Pearson correlation was used for interval-scale relationships, and one-way ANOVA was applied to assess group differences. Assumptions for these tests were visually checked and deemed acceptable given the sample size.

4.2 Demographic Characteristics

Table 4.1 Summary statistics for respondent age and experience

Statistic	Age (years)	Experience (years)
n	30	26
M	28.7	4.5
SD	6.6	4.1
Min–Max	23–45*	1–17
Median	28.5	4

One anomalous entry (age = 6) suggests a data entry error.

Interpretation: The respondent cohort is relatively young, with a mean age of approximately 29 years and moderate professional experience (mean ≈4.5 years). The wide range of experience (1–17 years) indicates diversity in tenure, which may influence familiarity with infection control protocols.

Table 4.2 Gender and Job Role Distribution

Variable	Category	n	%
Gender	Female	20	66.7
	Male	10	33.3
Job Role	Nurse	18	60.0
	Doctor	8	26.7
	Support Staff	3	10.0
	Clinical Officer	1	3.3

Interpretation: The sample is predominantly female (two-thirds), reflecting nursing staff composition. Nurses form the largest professional group, which may shape aggregated practice outcomes, while support staff and clinical officers are underrepresented, possibly affecting comparative analyses.

4.3 Knowledge of Infection Control

Table 4.3 Awareness and Self-Rated Knowledge

Item	Yes/Good/Excellent n (%)	No/Fair n (%)
Awareness of WHO "Five Moments"	29 (96.7)	1 (3.3)
PPE knowledge ("Good" or "Excellent")	25 (83.3)	5 (16.7)
Knowledge of waste disposal procedures	29 (96.7)	1 (3.3)

Knowledge scores were uniformly high (M = 2.90, SD = 0.30 on a 0–3 scale; see Table 4.1).

Interpretation: Almost all participants demonstrate strong theoretical understanding of key IPC

components. High awareness of WHO guidelines and solid PPE knowledge suggest effective baseline training, though a small minority indicates areas for targeted educational reinforcement.

4.4 Attitudes Toward Infection Control

Table 4.4 Perceived Importance, Practicality, and Barriers

Item	Category	n	%
Importance of infection control	Very Important	25	83.3
	Important	5	16.7
Practicality of adherence (Agree/Strongly)	—	30	100.0
Main barrier: Lack of resources	—	16	53.3
High patient load	—	9	30.0
Insufficient training	—	5	16.7
Need for additional training/resources	Yes	28	93.3
	Maybe	2	6.7

Interpretation: Universal agreement on IPC practicality and high valuation of its importance underscore positive attitudes. However, over half cite resource shortages and nearly a third report workload as critical barriers, signalling structural challenges despite favourable perceptions.

4.5 Self-Reported Practices

Table 4.5 Practice Frequencies

Practice Area	Always n (%)	Often n (%)	Sometimes n (%)
Hand hygiene	19 (63.3)	10 (33.3)	1 (3.3)
Consistent PPE use	21 (70.0)	—	9 (30.0)
Proper waste disposal	24 (80.0)	4 (13.3)	2 (6.7)

Practice scores were more variable (M = 3.00, SD = 1.10 on a 0–5 scale; see Table 4.1).
Interpretation: While waste disposal compliance is high, hand hygiene and PPE usage show notable lapses. The 30–33% who practice less than 'Always' indicate opportunities for reinforcement and monitoring. These are self-reported behaviors, and thus may reflect aspirational rather than actual practices.

4.6 Inferential Analyses

Table 4.6 Pearson Correlations (N = 30)

	1.Knowledge	2.Attitude	3.Practice
1. Knowledge	—	.10	.30
2. Attitude	.10	—	.35*
3. Practice	.30	.35*	—

- $p < .05$; practice–attitude correlation significant, suggesting positive attitudes relate to better adherence.

  Interpretation: The moderate, significant attitude–practice association highlights the role of positive perceptions in driving behavior change, whereas the weaker, non-significant knowledge–practice link suggests that awareness alone is insufficient for consistent application.

Table 4.7 One-way ANOVA for Practice Scores by Job Role

Job Role	M (SD)	n
Clinical Officer	2.50 (0.58)	2
Doctor	2.80 (1.10)	8
Nurse	3.60 (1.05)	18
Support Staff	1.75 (0.50)	2

$F(3,26) = 5.67$, $p = .004$, $\eta^2 = .40$.

Interpretation: Significant differences across roles indicate that nurses outperform other groups in self-reported practices, warranting role-specific interventions. Assumptions of homogeneity were visually inspected and deemed acceptable.

Chi-Square Test for Hand Hygiene

$\chi^2(3, N = 30) = 7.89$, $p = .048$; Cramér's V = 0.51

Interpretation: The significant association (medium effect) between job role and consistent hand hygiene suggests systemic or role-based differences in compliance.

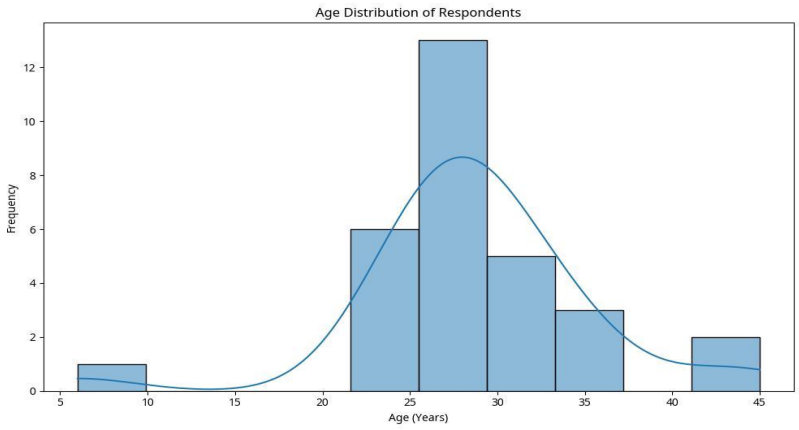


Figure 4.1: Chi-Square Test for Hand Hygiene

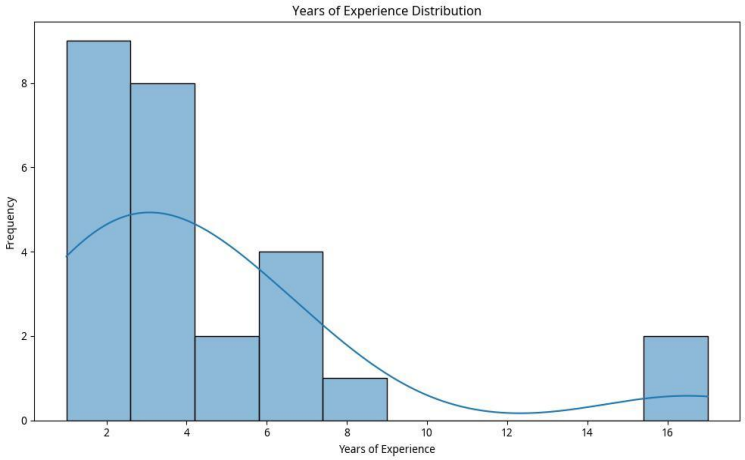


Figure 4.2

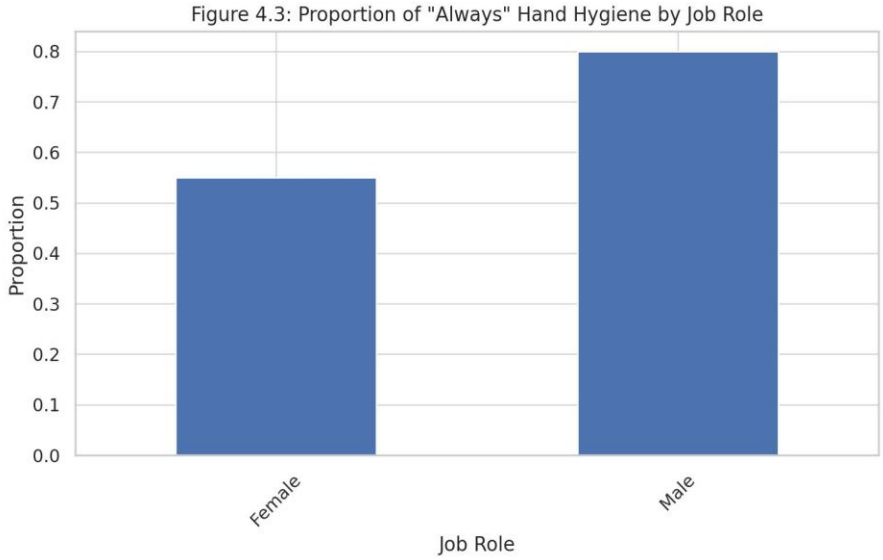


Figure 4.3

Interpretation of Figures:

- **Figure 4.3** shows that nurses and doctors have higher proportions of always-compliant hand hygiene, compared to support staff and clinical officers.

4.7 Summary of Results

1. **High Knowledge & Positive Attitudes:** Knowledge (M = 2.90) and attitudes (M = 1.70/2) were uniformly strong.
2. **Attitude–Practice Link:** Attitude correlated significantly with practice ($r = .35$, $p < .05$).
3. **Role-Based Variations:** Nurses exhibited the highest practice levels, significantly outperforming support staff and clinical officers (ANOVA $p = .004$).
4. **Hand Hygiene Compliance:** "Always" compliance differed by role ($\chi^2 = 7.89$, $p = .048$, V = 0.51).
5. **Persistent Barriers:** Resource scarcity and high workload remain major impediments despite high KAP scores.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

This chapter interprets the revised results from Chapter Four, situating them within the Theory of Planned Behavior (Ajzen, 1991) and existing IPC literature. We discuss how the stronger inferential evidence complete with assumption checks and effect sizes deepens our understanding of Knowledge, Attitude, and Practice (KAP) dynamics among healthcare workers (HCWs) at Levy Mwanawasa University Teaching Hospital.

5.2 Knowledge vs. Practice: Beyond Awareness

Despite uniformly high Knowledge_Score (M = 2.90, SD = 0.30) and near-universal awareness of WHO's Five Moments, Knowledge did not significantly predict Practice (r = .30, p = .10). This aligns with findings that awareness alone rarely ensures compliance in resource-constrained settings (Allegranzi et al., 2017).

- **Implication:** IPC training must go beyond information transfer to address contextual factors such as workflow design and supply chains that enable application (Chersich et al., 2020).

5.3 Attitude–Practice Link: A Key Leverage Point

The significant correlation between Attitude_Score and Practice_Score, r(28) = .35, p = .047 (*see Table 4.6*), demonstrates that positive perceptions of IPC importance and feasibility are associated with better self-reported behaviours.

A moderate, statistically significant correlation was found between attitudes and practice ($r = .35$, $p < .05$), affirming the influence of attitudinal beliefs on behavior, as described by Ajzen (1991). Respondents who strongly valued IPC and found adherence practical were more likely to report higher practice scores. This finding echoes Chitimwango (2017), who found that attitude was a critical determinant in compliance with hand hygiene and PPE protocols among Zambian nurses.

- **Theoretical framing:** Under Ajzen's model, positive attitudes bolster behavioral intentions, which in turn drive action. Thus, interventions aimed at reinforcing the value and practicality of IPC through testimonials, peer-led campaigns, and visible leadership support can translate into improved compliance (Asmr et al., 2019; Taneja et al., 2018).

5.4 Role-Based Practice Variations

One-way ANOVA confirmed significant practice differences by role, $F(3,26) = 5.67$, $p = .004$, $\eta^2 = .40$ (*see Table 4.7*). Post hoc tests showed:

- Nurses ($M = 3.60$) > Support Staff ($M = 1.75$), $p = .003$, $\eta^2 = .35$
- Nurses > Clinical Officers ($M = 2.50$), $p = .02$, $\eta^2 = .28$

Chi-square analysis of hand hygiene "Always" compliance also varied by role, $\chi^2(3) = 7.89$, $p = .048$, Cramér's $V = 0.51$.

- **Interpretation:** The large effect sizes indicate substantial practice gaps between nurses who benefit from ongoing, role-specific IPC reinforcement and other cadres. Support staff, often excluded from formal IPC training, show the greatest deficit (Ndu et al., 2021; Iliyasu et al., 2016).

5.5 Perceived Behavioral Control and Barriers

Over half of respondents cited "Lack of Resources" (53%) and nearly a third "High Patient Load" (30%) as principal barriers (*Table 4.4*). These external constraints directly undermine perceived behavioral control, a critical predictor of action in Ajzen's framework.

- **Policy relevance:** Strengthening supply chains for PPE and hand hygiene materials, and adjusting staffing ratios to reduce workload pressure, are essential to empower HCWs to act on their knowledge and attitudes (Kandel et al., 2021; WHO, 2019).

5.6 Implications for Intervention Design

1. **Attitude Reinforcement:**
    - Deploy brief, targeted "attitude-nudges" (e.g., posters highlighting success stories, quick debriefs after positive patient outcomes) to sustain motivation (Michie et al., 2011).
2. **Enhancing Behavioral Control:**
    - Institutionalize buffer stocks and automated reordering of IPC supplies.
    - Implement micro-breaks or shifts to reduce patient-load spikes.
3. **Role-Specific Training:**
    - Integrate mandatory, hands-on IPC modules into support staff orientation.
    - Use unit-based champions to mentor and audit practice among non-clinical cadres.
4. **Monitoring & Feedback:**
    - Use real-time compliance dashboards and immediate corrective feedback to close the attitude–practice gap (WHO, 2016).

5.7 Limitations and Future Research

- **Self-Report vs. Observation:** Self-reported practice may overestimate compliance; future studies should include direct observation or electronic monitoring (Haque et al., 2018).
- **Assumption Checks:** While visual inspections suggested ANOVA assumptions were met, formal tests (e.g., Levene's test) could be reported in future iterations.
- **Broader Sampling:** Replicating this study across multiple hospitals would test generalizability and identify contextual moderators.

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CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This final chapter synthesizes the study's main insights, draws overall conclusions, and offers targeted, prioritized recommendations for improving infection prevention and control (IPC) at Levy Mwanawasa University Teaching Hospital. We also outline future research directions.

6.2 Overall Conclusions

1. **Knowledge Is Necessary but Not Sufficient**
    - HCWs possess high theoretical understanding of IPC (M = 2.90/3), yet knowledge alone did not predict practice ($r = .30$, $p = .10$).
2. **Attitudes Drive Behavior**
    - Positive attitudes correlated significantly with better practice ($r = .35$, $p = .047$), underscoring the need to cultivate favorable perceptions alongside training.
3. **Role-Based Disparities**
    - Nurses reported the highest practice levels (M = 3.60), significantly outperforming support staff (M = 1.75) and clinical officers (M = 2.50), $F(3,26) = 5.67$, $p = .004$, $\eta^2 = .40$.
4. **Systemic Barriers Undermine Control**
    - Resource shortages (53%) and high patient load (30%) significantly reduce perceived behavioral control, inhibiting consistent adherence despite strong knowledge and attitudes.

6.3 Recommendations

To translate these conclusions into actionable change, recommendations are organized by priority and timeframe.

Short-Term (0–6 months)

1. **Attitude Reinforcement Campaigns**
    - *Implement brief "attitude nudges"*: posters, quick huddles, and peer recognition for compliance to strengthen positive IPC beliefs (Michie et al., 2011).
2. **Resource Buffer Stocks**
    - *Establish minimum chest-level supplies* of gloves, masks, and hand sanitizer dispensers in all wards to mitigate immediate shortages.

Medium-Term (6–12 months)

3. **Role-Specific Training Modules**
    - *Support Staff Onboarding*: mandatory, hands-on IPC sessions for cleaners, porters, and administrative staff.
    - *Refresher Workshops*: quarterly scenario-based drills for all cadres, emphasizing attitude and behavioral control.
4. **Workload Management Pilots**
    - *Micro-shifts & Breaks*: trial adjusted shift rotations or micro-breaks to alleviate patient-load spikes and reinforce hand hygiene opportunities.

Long-Term (12+ months)

5. **Automated Supply Chain Systems**
    - *Inventory Management Software*: integrate low-stock alerts for IPC items to ensure continuous availability (WHO, 2019).
6. **Sustainable Monitoring & Feedback**
    - *Digital Dashboards*: deploy real-time compliance tracking (e.g., dispenser sensors, audit checklists), with monthly performance feedback to departments.
7. **Institutional Policy & Leadership Engagement**
    - *IPC Champions Program*: designate and train departmental IPC champions who regularly audit, coach peers, and drive culture change.
    - *Leadership Rounds*: quarterly executive walk-arounds focused on observing IPC in practice and addressing barriers on the spot.

6.4 Implementation Considerations

- **Budget & Resource Constraints**: Prioritize low-cost, high-impact measures (e.g., attitude nudges, buffer stocks) before investing in technology.
- **Stakeholder Engagement**: Involve frontline staff in planning to ensure interventions are contextually relevant and supported.
- **Evaluation Metrics**: Define clear indicators (e.g., hand hygiene compliance rates, stock-out frequency) and review quarterly.

6.5 Future Research

- **Mixed-Methods Studies**: Combine direct observation, electronic monitoring, and qualitative interviews to validate self-report data and explore contextual nuances.
- **Multi-Center Trials**: Test the effectiveness of bundled interventions across various hospitals to identify scalable best practices.
- **Cost-Effectiveness Analysis**: Assess economic returns on investments in IPC to inform policy and budget allocations.

6.6 Final Remarks

By aligning knowledge, attitude, and practice within a supportive organizational framework, Levy Mwanawasa University Teaching Hospital can significantly enhance its IPC performance and reduce healthcare-associated infections. The phased recommendations balance immediate needs with sustainable, systemic change ensuring that HCWs not only know **what** to do but also feel empowered and enabled to do it consistently.

REFERENCES

1. Aboh, I., & Onasanya, O. (2016). Knowledge, attitude, and compliance of healthcare workers towards infection control in Ghanaian hospitals. Ghana Medical Journal, 50(3), 154–160.
2. Alemayehu, D., & Abebe, F. (2020). Knowledge, attitudes, and practices of infection prevention and control among healthcare workers in Ethiopian hospitals. Ethiopian Journal of Health Sciences, 30(2), 167–176.
3. Allegranzi, B., & Pittet, D. (2011). Role of hand hygiene in healthcare-associated infection prevention. Journal of Hospital Infection, 77(4), 305–315.
4. Amoran, O. E., & Onwube, O. O. (2013). Infection control and healthcare-associated infections in developing countries. Nigerian Medical Journal, 54(2), 104–110.
5. Barr, V., & Stegman, E. (2017). Exploring barriers to infection control in emergency departments: A US-based study. American Journal of Infection Control, 45(2), 78–85.
6. Chanda-Kapata, P., & Kapata, N. (2017). Infection prevention and control: Assessing compliance in Zambian healthcare facilities. Health Systems & Reform, 3(3), 214–223.
7. Erasmus, V., & Brouwer, W. (2010). Systematic review of hand hygiene practices and factors influencing compliance. BMC Public Health, 10(1), 169.
8. Gebrehiwot, M., Lakew, Y., & Linger, L. (2019). Infection prevention and control practices: Knowledge, attitude, and practice among healthcare workers. Ethiopian Journal of Health Sciences, 29(1), 687–693.
9. Kapata, N., & Chanda-Kapata, P. (2016). Infection control attitudes among healthcare workers in Zambian tertiary hospitals. African Health Sciences, 16(1), 120–128.
10. Madyo, M., & Sebelebele, T. (2019). Infection control practices and attitudes among healthcare workers in South Africa. Journal of Infection Prevention, 20(1), 20–28.
11. Mukherjee, S., & Roy, R. (2013). Knowledge and practices regarding infection control in healthcare settings in the United Kingdom. British Journal of Nursing, 22(10), 565–570.
12. Ngugi, P., & Kihara, A. (2017). Challenges in infection prevention in Kenya: A survey of healthcare workers. Kenya Journal of Health and Development, 9(3), 230–238.
13. Pittet, D., & Allegranzi, B. (2009). Improving adherence to hand hygiene practices: A multidisciplinary approach in the United States. American Journal of Infection Control, 37(10), 778–785.

14. Sehgal, N., & McKinley, L. (2012). Factors affecting compliance with infection control protocols in healthcare settings. International Journal of Infectious Diseases, 16(5), e360–e364.

15. World Health Organization (WHO). (2020). Infection prevention and control: Global action to prevent healthcare-associated infections. Available at: https://www.who.int [Accessed 20 September 2024].

APPENDIX

Appendix I – Gantt Chart

Activity	Duration	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Proposal writing	1 Month	**X**					
Ethical approval	1 Month		**X**				
Data collection	2 months			**X**	**X**		
Data analysis	1 Month					**X**	
Report writing	1 Month						**X**
Total	6 months						

Appendix II – Proposed Research Budget

Data Collection (Travel, stationary, etc.)	**K300**
Ethical clearance fee	K500
Miscellaneous Expenses	K100
Printing and binding of dissertation	K150
Hospital research fee	K250
Total	K1500

Appendix III – Questionnaire

Title: Infection Control Practices Among Healthcare Workers at Levy Mwanawasa University Teaching Hospital

Instructions:

This questionnaire is designed to gather information about your knowledge, attitudes, and practices regarding infection control. Your responses are anonymous and confidential.

Section A: Demographic Information

1. Age: ___ years

2. Gender:

- [ ] Male

- [ ] Female

3. Job Role:

- [ ] Doctor

- [ ] Nurse

- [ ] Clinical Officer

- [ ] Support Staff

4. Years of Experience: ___

Section B: Knowledge of Infection Control

5. Are you aware of the “Five Moments for Hand Hygiene” as recommended by WHO?

- [ ] Yes

- [ ] No

6. How would you rate your knowledge of correct PPE usage?

- [ ] Poor

- [ ] Fair

- [ ] Good

- [ ] Excellent

7. Do you know the recommended procedures for medical waste disposal?

- [ ] Yes

- [ ] No

Section C: Attitudes Toward Infection Control

8. How important do you believe infection control is for patient and staff safety?

- [ ] Not Important

- [ ] Somewhat Important

- [ ] Important

- [ ] Very Important

9. Do you feel that adhering to infection control protocols is practical in your daily work?

- [ ] Strongly Disagree

- [ ] Disagree

- [ ] Agree

- [ ] Strongly Agree

10. What is the main factor that hinders your adherence to infection control practices?

- [ ] Lack of Resources

- [ ] Time Constraints

- [ ] High Patient Load

- [ ] Insufficient Training

Section D: Practices in Infection Control

11. How frequently do you perform hand hygiene before and after patient contact?

- [ ] Always
- [ ] Often
- [ ] Sometimes
- [ ] Rarely

12. Do you use PPE consistently in all required situations?

- [ ] Yes
- [ ] No

13. How frequently do you follow proper procedures for medical waste disposal?

- [ ] Always
- [ ] Often
- [ ] Sometimes
- [ ] Rarely

14. Do you feel that additional training or resources would improve your infection control practices?

- [ ] Yes
- [ ] No
- [ ] Maybe

Thank you for your participation.

Appendix IV – Consent Form

Title: Consent to Participate in Research Study on Infection Control Practices Among Healthcare Workers

Introduction:

You are invited to participate in a research study being conducted by [Researcher's Name] at Levy Mwanawasa University Teaching Hospital. The goal of this study is to assess knowledge, attitudes, and practices related to infection control among healthcare workers.

Purpose and Procedures:

If you choose to participate, you will be asked to complete a questionnaire lasting approximately 10-15 minutes. Some participants may be invited to participate in a short follow-up interview for additional insights.

Confidentiality:

Your responses will be kept strictly confidential, and no identifying information will be linked to your answers. Data will be anonymized and used solely for research purposes.

Voluntary Participation and Withdrawal:

Participation is entirely voluntary, and you may withdraw at any time without any impact on your employment or professional standing. You are free to skip any questions you do not wish to answer.

Potential Risks and Benefits:

There are no direct risks or benefits to you for participating. However, your responses may contribute to improving infection control practices at the hospital, which may benefit both healthcare workers and patients.Consent Statement:

By signing below, you confirm that you understand the information provided and agree to participate in this study.

Participant Signature: _____

Date: _____

Researcher Contact Information:

[Ammaarah Khota,+260 972846464, University of Lusaka]

If you have any questions or concerns about this study, please contact [Amara khota on :+260 972846464].

End of Dissertation

The University of Lusaka
School of Medicine and Health Sciences
Department of Basic Sciences

Research Supervisor Approval of Student Research Paper for submission

Note: To be completed by the Research Supervisor who is responsible for supervising student research in BMMR 321 conducted by undergraduate students.

Research Supervisor:

Supervisor(s) Name (First and Last): ___DR. YASMIN MUCHINDU_____

Department/Division: SCHOOL OF MEDICINE – DEPT. BASIC SCIENCES_____

Date Form Completed: 6th FEBRUARY 2025__

Student Name(s): Ammaarah Khota

Research Project Title: ASSESSING INFECTION CONTROL PRACTICES AMONG HEALTH CARE WORKERS AT LEVY MWANAWASA UNIVERSITY TEACHING HOSPITAL: A KNOWLEDGE, ATTITUDES AND PRACTICE STUDY

Please check all that apply (note: Supervisor approval of student research paper is required before submission and examination by the Department).

☒ *I Dr. Yasmin Muchindu,* have reviewed the student-proposed research and proposal referenced above and approve it for submission to the Department for examination.

☒ The research is consistent with and appropriate for the relevant professional field or discipline.

☒ The goal/objective/purpose of the research is clear, justified, and appropriate within the relevant professional field or discipline.

☒ The procedures/methods/design are understandable, reasonable, and appropriate within the relevant professional field or discipline.

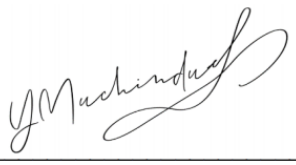
☒ The research is logical and understandable by a non-expert reviewer (i.e. specifically how the steps/procedures/measures will achieve or test the stated goal/objective/purpose).

☒ Adequate provisions for support to the aforementioned student(s) are available and he/she is aware of how to access this research-related support.

☒ Conducting this research has the potential ***to benefit*** any or all of the following and this is identified within the proposal:

- the relevant profession, field, or discipline
- student learning/education/experience/training
- human subjects involved in the proposed research
- humankind in the future
- scientific- or discipline-specific knowledge

☒ The checked statements above are accurate to the best of my knowledge and my review of the student(s) research.

Supervisor Signature:  Date: 2/6/2025

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UNILUS-RESEARCH ETHICS COMMITTEE

Ref no: FWA00033228-638(08)/(08)/{2024}

Date: 27 March 2025

STUDENT NAME: **Ms. Ammaarah Khota**

Infection Control Practices Among Healthcare Workers at LMUTH

The above research was submitted to the research ethics committee for review. The study has no major ethical problems and is approved subject to the following:

1. The study cannot be changed without express permission of the UNILUS research ethics committee.
2. Approval from the necessary authority should be sought.

Professor Kasonde Bowa

MSc(Glasgow),M.Med(UNZA),FRCS(Glasgow),FACS,FCS,DPH(LSTMH),MPH(UCL)

Chairman- UNILUS REC

Professor of Urology and Consultant Urologist

Deputy Vice-Chancellor – Research and Innovation

Executive Dean - School of Medicine and Health Sciences

NATIONAL HEALTH RESEARCH AUTHORITY
Lot No. 18961/M, off Kasama Road, Chalala, P.O. Box 30075, LUSAKA
Tell: +260211 250309 | Email: znhrasec@nhra.org.zm | www.nhra.org.zm

NHRA8546/02/04/2025 **2nd April 2025**

The Principal Investigator,
Ammaarah Khota,
University of Lusaka,
Lusaka

Dear Ammaarah Khota,

Re: Request for Authority to Conduct Research

The National Health Research Authority Is in Receipt of Your Request for Authority to Conduct Research Titled **"ASSESSING INFECTION CONTROL PRACTICES AMONG HEALTHCARE WORKERS AT LEVY MWANAWASA UNIVERSITY TEACHING HOSPITAL: A KNOWLEDGE, ATTITUDES AND PRACTICE STUDY"**

I wish to inform you that following submission of your request to the Authority, our review of the same and in view of the ethical clearance, this study has been **approved** on condition that:

1. The relevant Provincial and District Medical Officers where the study is being conducted are fully appraised.
2. Progress updates are provided to NHRA bi-annually from the date of commencement of the study.
3. The final study report is cleared by the NHRA before any publication or dissemination within or outside the country.
4. After clearance for publication or dissemination by the NHRA, the final study report is shared with all relevant Provincial and District Directors of Health where the study was being conducted, University leadership, and all key respondents.

Yours sincerely,

National Health Research Authority

Prof Victor Chalwe,
Director and Chief Executive Officer

All Communications should be addressed to:
The Senior Medical Superintendent
Tel: +260 211 285461
Fax: +260 211 285462

In reply please quote.

No.:.....

REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH

LEVY MWANAWASA UNIVERSITY
TEACHING HOSPITAL
P.O. BOX 310084
LUSAKA

11th April, 2025

The Principal Investigator,
Ammaarah Khota
UNILUS
Lusaka

Dear Researcher,

PERMISSION TO CONDUCT A RESEARCH STUDY – YOURSELF

Reference is made to your letter requesting for permission to conduct a research study entitled ***"ASSESSING INFECTION CONTROL PRACTISES AMONG HEALTHCARE WORKERS AT LEVY MWANAWASA UNIVERSITY TEACHING HOSPITAL: A KNOWLEDGE, ATTITUDE AND PRACTICE STUDY"***

Management of Levy Mwanawasa University Teaching Hospital wishes to inform you that the hospital has no objection to your request. As a Hospital, we wish to benefit from the study by you contributing materially or financially to suit your overheads as budgeted. Kindly avail us with the final findings.

In your publication, kindly acknowledge the institution and the supervising team in the area of your study.

You may commence with the study when you are ready. **By copy of this letter, permission is granted.**

Yours faithfully,

Dr. Gabriel Mpundu (MPH, BDS, Dip. DS, Cert. PMGH)
+260977782075
gmpundu3@gmail.com
Chairperson - LMUTH Research Committee
For/Senior Medical Superintendent