KNOWLEDGE, ATTITUDE AND PRACTICE OF STANDARD PRECAUTIONS AMONG HEALTH CARE WORKERS IN SELECTED CLINICS IN EGOR LOCAL GOVERNMENT AREA, EDO STATE

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BENIN CITY

OCTOBER, 2025

DECLARATION

This is to declare that this research project titled **KNOWLEDGE, ATTITUDE AND PRACTICE OF STANDARD PRECAUTIONS AMONG HEALTH CARE WORKERS IN SELECTED CLINICS IN EGOR LOCAL GOVERNMENT AREA** will be carried out by **ERHAROGIE VICTORY OMOSIGHO.** It will solely be the result of my work except where acknowledged as been derived from other person(s) or resources.

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CERTIFICATION/ APPROVAL

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ABSTRACT

Healthcare-associated infections remain a persistent challenge globally, particularly in developing countries where resource constraints often hinder adherence to infection control protocols. This study investigates the knowledge, attitude, and practice of standard precautions among healthcare workers in selected clinics within Egor Local Government Area, Edo State, Nigeria. The primary aim was to assess how well-informed healthcare workers are about standard precautions, their perceptions toward infection control, and how these translate into practical behaviors. A descriptive cross-sectional research design was employed, with data collected from 150 healthcare workers using a structured, self-administered questionnaire. Key variables assessed included knowledge of hand hygiene and personal protective equipment (PPE), attitude toward routine precautions, actual implementation of infection control measures, and factors influencing compliance, including management support and availability of resources. The results revealed that while most healthcare workers exhibited good knowledge and positive attitudes toward standard precautions, there were variations in actual practice, especially concerning equipment decontamination and workload-related compliance barriers. Notably, 88.7% regularly practiced hand hygiene, while only 60% consistently decontaminated reusable instruments. Availability of PPE and institutional support emerged as significant factors influencing adherence. The study recommends strengthening continuous training programs, improving PPE supply chains, and enhancing management engagement to sustain high compliance levels. These strategies are essential to improve healthcare safety and reduce the incidence of hospital-acquired infections.

Keywords: standard precautions, infection control, healthcare workers, knowledge, attitude, practice, Egor Local Government Area, Edo State

DEDICATION

This work is dedicated to Almighty God, the source of all knowledge and wisdom and to my beloved parents, Mr and Mrs ERHAROGIE for their unwavering support, love, and encouragement throughout my academic journey.

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CHAPTER ONE

INTRODUCTION

1.1 Background to The Study

Infection prevention and control are essential aspects of healthcare delivery, aimed at reducing the spread of infectious diseases and safeguarding both healthcare workers (HCWs) and patients. Healthcare-associated infections (HAIs) remain a serious public health concern, contributing to increased morbidity, prolonged hospital stays, and higher healthcare costs (CDC, 2024). To mitigate these risks, Standard Precautions (SPs) have been established as fundamental infection control measures that apply to all patient care activities, regardless of the patient's infection status (WORLD HEALTH ORGANISATION (WHO), 2023). These precautions serve as the primary defense against occupational exposure to infectious agents, ensuring a safer working environment for HCWs and improving patient safety.

Healthcare workers frequently encounter pathogens through direct patient contact, exposure to bodily fluids, and handling of medical equipment. The risk of transmission is particularly high in settings where infection control measures are inconsistently applied. For instance, needlestick injuries and improper disposal of medical waste remain major sources of occupational exposure to bloodborne infections such as Hepatitis B, Hepatitis C, and HIV (Gebremedhin et al., 2023). While infection control policies emphasize the importance of SPs, compliance remains a persistent challenge due to factors such as inadequate resources, insufficient training, and lack of institutional support (Ogunrinde et al., 2023).

Key components of Standard Precautions include proper hand hygiene, use of personal protective equipment (PPE), safe injection practices, environmental cleaning, and waste

disposal. Despite widespread awareness of these measures, research has shown that many HCWs do not fully adhere to recommended guidelines. A study conducted in Ethiopia found that fewer than 20% of healthcare workers consistently practiced SPs due to resource limitations and inadequate training programs (Gebremedhin et al., 2023). Similar findings have been reported in other developing regions, where shortages of protective equipment and high patient loads make compliance more difficult (Alharbi et al., 2023).

The emergence of COVID-19 reinforced the importance of strict infection control practices, prompting global health organizations to revise and strengthen guidelines for SPs (WHO, 2023). The pandemic exposed gaps in infection prevention strategies, highlighting the need for continuous education, monitoring, and policy enforcement to enhance compliance. Given the ongoing threat of antimicrobial resistance and the rise in HAIs, improving adherence to SPs is crucial for protecting both healthcare providers and patients.

This study aims to assess the level of compliance with Standard Precautions among healthcare workers, examine the challenges affecting adherence, and suggest practical strategies for enhancing infection control measures.

1.2 Statement of Problem

In many developing countries, including Nigeria, there is significant concern about healthcare workers' knowledge of and adherence to Standard Precautions (SPs). A lack of awareness about standard precautions among many healthcare workers makes it challenging for them to consistently follow these guidelines. Research conducted in Lagos, Western Nigeria, found that non-compliance with SPs was largely due to insufficient knowledge (Akeem et al., 2022). This finding underscores the importance

of implementing educational programs to enhance understanding of SPs to reduce occupational accidents.

Similarly, a study in a tertiary healthcare institution in Northern Nigeria revealed that some healthcare workers did not recognize vaccination (19.2%), post-exposure prophylaxis (PEP) (19.2%), and surveillance for emerging diseases (28%) as essential components of infection control under SPs (Nwamoh, 2023). This lack of knowledge contributes to poor attitudes and practices regarding SPs, leading to a high incidence of occupational accidents in Nigeria. In another study conducted in Kwara, it was observed that only 32.4% of healthcare workers consistently used protective measures regardless of patients' diagnoses (Odusanya, 2021).

According to the Occupational Safety and Health Administration (2021), about 5.6 million healthcare workers worldwide who use sharp instruments are at risk of exposure to bloodborne pathogens. In a teaching hospital in Nigeria, needlestick injuries were identified as the most common cause (75.6%) of occupational exposure (Orji et al., 2022). However, these injuries are often underreported due to factors such as the stigma associated with potential HIV infection. Since no vaccines are available for HIV and hepatitis C, consistent adherence to SPs remains the most effective preventive measure. This highlights the importance of assessing healthcare workers' knowledge, attitude, and practice of standard precautions among healthcare workers in some selected clinics, particularly in Egor Local Government Area, Edo State.

1.3 Objective of the study

The aim of this study is to examine the knowledge, attitude, and practice of standard precautions among healthcare workers, in selected clinicS in Egor local government area, Edo State.

The specific objectives of the study are to:

1. Evaluate the level of knowledge about standard precautions among healthcare workers in selected clinics in Egor Local Government Area, Edo State.

2. Examine the attitude of healthcare workers towards the use of standard precautions in selected clinics in Egor Local Government Area, Edo State.

3. Assess the extent to which standard precautions are practiced in selected clinics in Egor Local Government Area, Edo State.

4. Identify the factors that influence compliance with standard precautions among healthcare workers in selected clinics in Egor Local Government Area, Edo State.

5. Determine how support and supervision from management influence healthcare workers' adherence to standard measures in selected clinics within Egor Local Government Area, Edo State.

1.4 Research Questions

1. What is the level of knowledge about standard precautions among healthcare workers in selected clinics in Egor Local Government Area, Edo State?

2. What are the attitudes of healthcare workers towards the use of standard precautions in selected clinics in Egor Local Government Area, Edo State?

3. To what extent are standard precautions practiced by healthcare workers in selected clinics in Egor Local Government Area, Edo State?

4. What factors influence compliance with standard precautions among healthcare workers in selected clinics in Egor Local Government Area, Edo State?

5. How does the support and supervision provided by management influence healthcare workers' use of standard measures in selected clinics in Egor Local Government Area, Edo State?

1.5 Hypothesis

1. There is no significant relationship between healthcare workers' knowledge of standard precautions and their practice of standard precautions.

2. There is no significant relationship between healthcare workers' attitude towards standard precautions and their compliance with standard measures.

3. There is no significant relationship between management support and the practice of standard precautions among healthcare workers.

1.5 Significance of the Study

This study is valuable as it will provide insights into the knowledge, attitude, and practice of standard precautions among healthcare workers. It will also evaluate their understanding of standard precautions as a key strategy for preventing hospital-acquired infections.

The findings of this study will be useful to the government, policymakers, and the public by highlighting the importance of practicing standard precautions and promoting positive attitudes towards them. This awareness can help authorities develop effective strategies and policies to support healthcare workers in implementing standard precautions. Additionally, it will enable stakeholders to create an environment that encourages healthcare workers to express their views and challenges regarding the practice of standard precautions.

The study is also relevant to the nursing profession, as it will help nurses evaluate current practices and assess the knowledge and attitudes of healthcare workers towards standard precautions. This information can guide improvements in nursing practice and infection control measures.

Furthermore, the results will benefit educators and trainers by providing an understanding of healthcare workers' knowledge, attitudes, and practices related to standard precautions. This insight can assist in designing more effective training programs to enhance compliance and safety in clinical settings.

1.6 Scope of the Study

This research will be conducted among healthcare workers in 12 selected Clinics in Egor Local Government Area of Edo State, Nigeria, with a sample size of about 130 - 150 health workers. The Clinics chosen for the study are; Edo-Ose Specialist Clinic, St. Stevens Clinic, Aniso Specialist Clinic, Winseph's Family Clinic, Blue Cross Clinic, New-Life Clinic, First Estate Clinic, Total Care Clinic, Apex Clinic, Tobita Medical Clinic, Aco Divine Clinic and Divine Appreciation Ministry Clinic.

1.7 Operational Definition of Terms

1. Knowledge of Standard Precautions: This refers to the understanding and awareness healthcare workers have regarding the basic infection control practices recommended to prevent healthcare-associated infections. It includes knowing about hand hygiene, the proper use of personal protective equipment (PPE), safe injection practices, and waste disposal protocols.

2. Attitude towards Standard Precautions: This refers to the feelings, beliefs, or perceptions healthcare workers have about the importance of adhering to standard

precautions. It involves their level of commitment, motivation, and perceived responsibility in applying these safety measures in their daily practices.

3. Practice of Standard Precautions: This refers to the actual application and implementation of the recommended infection control practices in healthcare settings by healthcare workers. It includes following guidelines on hand hygiene, wearing appropriate PPE, safe handling of sharp instruments, and proper waste disposal.

4. Healthcare Workers (HCWs)

This term refers to all individuals involved in the care of patients in healthcare settings, including doctors, nurses, medical technicians, lab workers, and other clinical staff.

5. Standard Precautions (SPs)

Standard precautions are a set of infection control practices designed to prevent the transmission of infectious diseases in healthcare settings. They include practices such as hand hygiene, use of personal protective equipment (PPE), safe injection practices, cleaning and disinfecting patient care equipment, and proper disposal of waste and sharps.

6. Compliance with Standard Precautions

This refers to the extent to which healthcare workers consistently and correctly follow the infection control guidelines and practices defined under standard precautions in their work environment.

7. Factors Influencing Compliance

These are various elements that impact healthcare workers' adherence to standard precautions. Factors may include availability of resources (e.g., PPE), training,

institutional support, workload, organizational culture, and personal beliefs or experiences.

8. Support and Supervision from Management

This refers to the guidance, resources, and encouragement provided by the management of healthcare facilities to promote adherence to infection control practices. It includes both direct supervision and the provision of necessary tools and training to healthcare workers.

9. Healthcare-Associated Infections (HAIs)

Infections that patients acquire while receiving treatment for medical or surgical conditions in healthcare settings. These infections are a significant public health concern and are often preventable through the proper implementation of standard precautions.

10. Clinic(s)

In this study, clinics refer to selected healthcare facilities located in Egor Local Government Area, Edo State, where primary medical services are provided. These clinics include both private and mission-based establishments that offer preventive, diagnostic, and curative services. The study focuses on twelve specific clinics that employ healthcare workers such as nurses, doctors, and laboratory technicians, who are responsible for implementing standard precautions in routine patient care.

CHAPTER TWO

LITERATURE REVIEW

This chapter examined relevant literature on the knowledge, attitude, and practice of standard precautions among healthcare workers. The reviewed studies are organized and discussed under the following sub-headings: conceptual review, theoretical framework, empirical review, and summary of the literature review.

2.1 Conceptual review

2.1.1 Concept of Standard Precautions

Standard precautions are essential infection control measures designed to minimize the spread of infections in healthcare settings. These practices are applied universally to all patients, regardless of infection status, and include hand hygiene, personal protective equipment (PPE), respiratory hygiene, safe injection practices, environmental cleaning, and appropriate handling of waste and linens. The use of these precautions helps protect both healthcare workers and patients from infectious diseases.

Key elements of standard precautions include:

1. Hand Hygiene: Critical for preventing infection through regular washing or sanitizing.

2. PPE: Protective gear like gloves, masks, and gowns to prevent exposure to harmful pathogens.

3. Respiratory Hygiene: Encouraging coughing etiquette to prevent airborne disease transmission.

4. Safe Injection Practices: Using sterile needles and proper techniques to avoid cross-contamination.

5. Environmental Cleaning: Regular disinfection of surfaces to eliminate infectious agents.

6. Waste and Linen Handling: Ensuring safe disposal to minimize exposure.

7. Patient Isolation: Isolating infected patients to prevent cross-infection in healthcare environments.

Adherence to these practices is vital and is influenced by healthcare workers' knowledge, experience, and training, as highlighted in studies by Musyoki et al. (2021) and Ayogu et al. (2023).

2.1.2 Knowledge of Standard Precautions

Standard precautions integrate body substance isolation and universal precautions to minimize the transmission of infections. Initially developed for hospital environments, these measures are now relevant across various other settings, including childcare centers and schools (Yilma et al., 2024). The core idea behind standard precautions is the assumption that all bodily fluids (excluding sweat), along with non-intact skin and mucous membranes, have the potential to harbor infectious agents and transmit diseases (Adebimpe et al., 2021).

These precautions include several critical practices, such as proper hand hygiene, the use of personal protective equipment (PPE) including gloves, gowns, masks, and eye protection based on the level of exposure, as well as safe injection techniques. Moreover, procedures for managing potentially contaminated surfaces and equipment are essential (Adebimpe et al., 2021). These measures are crucial in preventing bloodborne infections like HIV, hepatitis B, and hepatitis C, which pose significant risks in healthcare environments (Fawole et al., 2021).

Despite their importance, implementing these precautions effectively faces numerous challenges, particularly in resource-limited settings. These obstacles include insufficient resources, lack of adequate training, low awareness of infection risks, and minimal institutional support for infection control measures (Adebimpe et al., 2021). As a result, adherence to these precautions can be compromised, increasing the risk of exposure to harmful pathogens. A study by Sadoh et al. (2023) pointed out that inadequate training and the unavailability of appropriate resources are key factors that weaken the application of standard precautions in many healthcare facilities across Nigeria.

Effective application of standard precautions requires more than just the availability of the necessary supplies; it demands a work culture where healthcare workers consistently follow these protocols. This includes continuous education and training, as well as a supportive environment that emphasizes infection prevention and control (Mokabel et al., 2022). Ensuring the active involvement of healthcare staff at all levels is critical for the sustained implementation of these precautions (Mokabel et al., 2022).

Research has shown that a healthcare worker's level of knowledge about standard precautions is directly linked to their compliance with protocols, such as hand hygiene and PPE usage (Abuduxike et al., 2021). For instance, a study by Yilma et al. (2024) found that healthcare workers in Ethiopia who were well-informed about infection prevention exhibited higher adherence to recommended practices than those in regions with less awareness. This highlights the importance of continuous education and the dissemination of knowledge as an essential part of an infection control strategy.

In addition to individual awareness, organizational support plays a key role in ensuring that healthcare workers consistently apply standard precautions. A study by Alam et al. (2022) stressed the necessity for healthcare institutions to establish clear infection

control protocols, allocate sufficient funds to provide adequate equipment, and regularly offer training to ensure that healthcare workers are equipped with the necessary tools and information.

Furthermore, it is important to note that knowledge alone does not guarantee consistent adherence to standard precautions. Addressing behavioral challenges, such as fatigue, understaffing, and the perception of time constraints, is essential for maintaining long-term compliance (Yilma et al., 2024). This is particularly important in sub-Saharan Africa, where healthcare workers often face high patient volumes and limited resources, making it difficult but crucial to follow infection prevention protocols (Ogoina et al., 2021).

Ultimately, although significant progress has been made in encouraging the use of standard precautions in healthcare settings, barriers related to resource constraints, insufficient training, and inconsistent adherence continue to pose challenges, especially in low-resource environments. Overcoming these challenges requires a dedicated effort to prioritize infection prevention at both the individual and organizational levels. By creating an environment where these precautions are regularly practiced, healthcare settings can substantially reduce the transmission of infections and enhance the safety of patients and healthcare workers alike (Mokabel et al., 2022).

2.1.3 Attitude of Health Workers Towards Standard Precautions

The way healthcare professionals implement standard precautions is largely shaped by their attitudes toward infection control and the importance they assign to such measures. The specific level of precaution taken often depends on the procedure being carried out and the associated risk of exposure to infectious materials. For example, while minimal procedures like drawing blood may require only gloves, more complex and invasive

tasks such as intubation demand additional protection like masks, gowns, gloves, and eye shields (WHO, 2022; Abbas et al., 2023).

Attitude is a key determinant in how consistently healthcare workers follow standard precautions. Positive perceptions of these practices are linked to higher levels of adherence. Professionals who believe in the effectiveness of these precautions in preventing infections are more likely to apply them correctly. On the other hand, a dismissive attitude or underestimation of the risks can lead to poor compliance, even when protective resources are available (Adeyemo & Oyetunde, 2021; Ilesanmi et al., 2022).

The broader safety culture within a healthcare institution significantly influences staff attitudes. Facilities that ensure adequate staffing levels, maintain a steady supply of PPE, and conduct regular training tend to witness better compliance with infection control protocols. In such environments, healthcare workers are more motivated to follow precautions because they feel supported and accountable (WHO, 2022; Musa et al., 2021).

Leadership and peer behavior also affect attitudes. When supervisors actively model correct infection control practices and emphasize accountability, they create a positive influence that shapes the team's behavior. Conversely, a lack of enforcement or visible leadership can weaken staff commitment to following safety procedures (Bello et al., 2021).

In resource-limited settings, systemic challenges can negatively influence attitudes. Shortages of protective equipment, excessive workloads, inadequate pay, and limited institutional backing often lead to frustration and diminished motivation among health

workers. These barriers make it difficult for even well-informed professionals to consistently follow standard precautions (Adebayo & Alao, 2023).

Individual factors such as education level, years of practice, and previous exposure to infection-related incidents also contribute to varying attitudes. Research indicates that experienced workers, particularly those who have encountered the consequences of poor infection control, tend to be more vigilant. This highlights the value of mentorship programs and experience-sharing among staff to instill a deeper sense of responsibility (Okeke et al., 2021).

Sustaining high levels of compliance depends on reinforcing positive attitudes through continuous education, performance reviews, feedback, and recognition of adherence. When healthcare providers internalize the importance of these precautions, they are more likely to treat them as a professional obligation rather than a mere routine (Mokabel et al., 2022).

Ultimately, the combination of individual commitment, supportive leadership, organizational readiness, and systemic backing plays a crucial role in fostering the right attitudes toward standard precautions. These elements must work together to reduce healthcare-associated infections and protect both staff and patients (WHO, 2022; Abbas et al., 2023).

2.1.4 Practice of Standard Precautions Among Health Workers

Healthcare professionals are expected to operate under the assumption that every individual receiving care could potentially harbor transmissible infectious pathogens. As a result, it is imperative that infection prevention protocols are rigorously and consistently applied in all healthcare interactions (Upton et al., 2022; Abubakar et al., 2023). While formal training in infection control is typically a part of healthcare

education, actual compliance in practice can vary significantly, often influenced by how healthcare workers perceive the level of risk in specific situations.

A variety of personal and systemic factors contribute to lapses in adherence to standard precautions. Some workers may develop habitual routines that overlook protective practices, while others cite limited time, the inconvenience or discomfort associated with using personal protective equipment (PPE), and frequent shortages of essential materials as barriers to consistent application. Additionally, complacency, concerns about the cost of infection control supplies, the unpredictable nature of exposure to bodily fluids, and a desire to avoid alarming patients can further undermine adherence (Ibrahim & Lawal, 2021; Upton et al., 2022).

Although the concept of standard precautions has been widely promoted since its formal introduction in the late 1980s, challenges with compliance remain prevalent across various healthcare environments, especially in low- and middle-income countries. In such settings, insufficient funding, infrastructure deficits, and inadequate policy enforcement exacerbate the difficulties in maintaining consistent infection control standards. Notably, the extent of non-compliance often varies based on geographical and institutional contexts, with rural facilities frequently facing greater challenges than their urban counterparts due to more limited access to resources and training (Musa et al., 2021; Eze et al., 2023).

Standard precautions are foundational infection control strategies applied universally during patient care, regardless of a patient's known or suspected infection status. These measures include hand hygiene, proper use of PPE, safe handling of sharps and contaminated materials, and environmental cleanliness. Their purpose is to minimize the risk of cross-contamination between patients and healthcare providers (Adeyemi &

Bello, 2022). However, when caring for patients with conditions that are highly transmissible via contact, droplets, or airborne particles, standard precautions alone may be inadequate. In such instances, healthcare providers must implement transmission-based precautions, which are tailored to the specific mode of pathogen spread (WHO, 2022; Upton et al., 2022).

To bridge the gap between knowledge and practice, healthcare institutions must not only ensure regular training and retraining of staff but also cultivate a culture of accountability and safety. Providing sufficient resources, removing systemic barriers, and encouraging open communication about infection risks are essential steps toward enhancing compliance. Moreover, reinforcing positive behaviors through supervision, mentorship, and recognition can lead to more consistent and sustained application of infection control practices (Okon et al., 2023; WHO, 2022).

Ultimately, addressing the root causes of non-compliance requires a holistic approach that combines individual behavioral change with institutional support and policy reinforcement. Only through such efforts can healthcare facilities achieve optimal infection control and protect both their workforce and the patients they serve.

2.2 Theoretical Review

The Knowledge, Attitude, and Practice (KAP) Theory will be used in this study to examine how individuals' awareness and perceptions influence their behaviors concerning the specific health issue under investigation. This theory offers a structured approach to understanding the sequential relationship between what people know, how they feel, and how they act.

The Knowledge, Attitude, and Practice (KAP) theory explains the progression of behavior change through three stages: knowledge acquisition, attitude formation, and

behavior establishment. This framework, introduced by Ross & Smith (1969), is frequently used in public health to analyze how individuals and communities alter their health behaviors.

KAP surveys are quantitative research tools designed to assess the knowledge, attitudes, and practices related to a specific health issue. These surveys help to identify misconceptions, barriers to behavior change, and areas where interventions may be needed. While KAP surveys provide valuable insights, they primarily gather opinions, and there may be a gap between what respondents report and their actual behaviors.

KAP surveys serve various purposes, including measuring the prevalence of certain health conditions, confirming hypotheses, and providing insights into the level of understanding regarding specific health-related topics. They also help establish baseline data for future comparisons and evaluations, as well as suggest culturally appropriate intervention strategies for different populations.

Application of KAP Theory to the Study

The KAP theory describes the interconnectedness between knowledge, attitudes, and behavior, asserting that knowledge lays the foundation for behavioral change, while attitudes influence the implementation of that change. This study applies the KAP model to evaluate the understanding, attitude, and practices regarding standard precautions among healthcare workers in clinics in Egor Local Government Area, Edo State. The theory aids in understanding why certain health behaviors change and helps identify factors such as environmental, personal, and behavioral characteristics that influence these changes. By applying this model, the study seeks to identify the gaps in knowledge, attitude, and practice related to standard precautions in healthcare settings.

Recent research has reinforced the effectiveness of the KAP model in various health contexts. For example, a study by Kang et al. (2024) applied KAP-based health education to patients with cerebrovascular stenosis and coronary heart disease, finding significant improvements in patient well-being and self-efficacy. Similarly, Koohi et al. (2021) used the KAP model in an Iranian population, demonstrating that targeted interventions could enhance knowledge and preventive practices related to cardiovascular diseases. These studies illustrate the value of the KAP model in shaping health interventions and influencing behaviors in diverse populations.

In conclusion, the KAP theory offers a comprehensive approach to understanding the dynamic relationship between knowledge, attitude, and behavior. By evaluating these three components, health professionals and researchers can design more effective interventions that address existing knowledge gaps and behavioral barriers. This approach ultimately contributes to improved health outcomes by guiding behavior change in targeted populations.

Understanding the knowledge, attitude, and practice (KAP) of standard precautions among healthcare workers is rooted in various behavioral and health-related theories. These theories provide a framework to explore how individuals acquire knowledge, form attitudes, and translate both into practice, especially in clinical environments where adherence to standard precautions is critical.

Knowledge-Attitude-Practice (KAP) Model

The KAP model assumes that knowledge is the foundation for shaping attitudes, which in turn influence practices. In infection control, this model implies that improving

healthcare workers' understanding of standard precautions can positively shift their attitude and result in better compliance with safety protocols.

However, this linear model is sometimes criticized for oversimplifying human behavior, as external factors (e.g., institutional policies, workload, availability of PPE) can also significantly affect practice, regardless of knowledge or attitude.

The KAP model offer valuable insights into the dynamics of healthcare workers' behaviors toward standard precautions. They highlight that knowledge alone is not sufficient; attitudes, perceived control, environmental support, and institutional factors all play crucial roles in shaping practice. Grounding your study in these theories enhances its depth and provides a solid framework for analyzing the factors that influence compliance with infection control measures in the clinics of Egor Local Government Area.

2.3 Empirical Review

A study by Ogoina et al. (2021) evaluated the understanding, attitudes, and practices concerning standard precautions (SP) among healthcare workers (HCWs) at two tertiary hospitals in Nigeria. The research included 290 participants, including doctors, nurses, and laboratory scientists. Although most participants exhibited adequate knowledge and positive attitudes toward SP, the practical application of these precautions was found to be lacking, with a median practice score of 50.8%. This indicates a significant gap between theoretical understanding and actual implementation. The study also noted that house officers, junior nurses, and laboratory scientists demonstrated poorer adherence to SP compared to their more senior colleagues. The authors recommended ongoing training, along with better resource distribution, particularly for junior staff, to improve the compliance rate with SP and minimize the risks associated with healthcare-

associated infections. They also pointed out that workload pressure and insufficient resources were key challenges in maintaining effective infection control practices.

Similarly, Abuduxike et al. (2021) examined HCWs' knowledge, attitudes, and practices regarding SP in Northern Cyprus. This study, which involved 233 healthcare professionals, also found that while knowledge and attitudes toward SP were generally favorable, actual adherence was inconsistent. A notable trend was that doctors, in particular, were less compliant with SP than nurses. The study revealed a concerning association between job roles and the occurrence of needle-stick injuries (NSIs), with nurses and paramedics being more susceptible to such injuries. The researchers emphasized the importance of formal training in SP, noting that those who had received specific instruction on using personal protective equipment (PPE) were more likely to follow the correct protocols. The findings highlighted the need for training programs tailored to the specific roles and risks of different HCWs to improve compliance with SP and reduce occupational hazards.

In the Nigerian context, the findings of Ogoina et al. (2021) reinforced the idea that while HCWs may be knowledgeable about SP, the challenge lies in translating this knowledge into consistent practice. The study revealed that inadequate access to necessary resources, such as appropriate PPE, was a significant barrier to effective SP implementation. This aligns with the results of Abuduxike et al. (2021), which also identified resource constraints as a key challenge in infection control. Both studies emphasized the importance of creating policies that not only promote regular training but also ensure that healthcare settings are adequately equipped to handle infection control needs. Ogoina et al. (2021) specifically suggested that improving the infrastructure within healthcare facilities would significantly enhance the effectiveness of SP protocols.

Abuduxike et al. (2021) further explored the connection between occupation type and SP compliance, highlighting that nurses generally had better adherence to SP than doctors. This discrepancy points to the need for more targeted training for doctors to improve their compliance with infection control measures. Additionally, the study found that needle-stick injuries were more common among healthcare workers in frontline roles, such as nurses and paramedics, underlining the necessity of strict adherence to SP guidelines to protect these high-risk workers. The research suggested that training programs should be role-specific to address the unique challenges faced by different healthcare professionals.

The findings from both Ogoina et al. (2021) and Abuduxike et al. (2021) emphasize that knowledge alone is insufficient to ensure the effective implementation of SP. Both studies identified that while healthcare workers demonstrated a solid understanding of SP, their compliance was hampered by a combination of factors, including insufficient training, inadequate resources, and a lack of management support. These challenges point to the need for comprehensive strategies that focus not only on education but also on ensuring the availability of essential infection control supplies, such as gloves, gowns, and masks.

The results of these studies highlight the need for continuous research and intervention to improve SP adherence among healthcare workers, particularly those in junior positions or with limited access to resources. Ogoina et al. (2021) and Abuduxike et al. (2021) both concluded that effective infection control requires more than just awareness; it requires a supportive environment where healthcare workers have the tools, resources, and training necessary to apply best practices consistently. This includes addressing infrastructural challenges, offering refresher courses, and ensuring access to protective equipment. Both studies suggest that healthcare institutions should establish clear,

standardized SP policies that apply to all levels of staff, fostering an environment of consistent infection control practices across the healthcare facility.

Lastly, Ogoina et al. (2021) concluded that institutional commitment to enhancing SP compliance is essential to reducing healthcare-associated infections in Nigeria. They recommended that policy initiatives should focus on strengthening training programs, ensuring adequate infection control resources, and addressing the particular needs of different categories of HCWs, including doctors, nurses, and laboratory scientists. Their research stressed that sustained efforts in these areas would be vital to improving both the safety of healthcare workers and the quality of care provided to patients.

Ogunrinde et al. (2023) conducted a study in tertiary hospitals in Ekiti State to assess nurses' attitudes and compliance with standard precautions. The findings showed that although compliance with standard precautions was high (96.6%), nurses exhibited poor attitudes toward these practices. All participants reported consistent use of personal protective equipment (PPE), with high levels of compliance in hand hygiene, respiratory hygiene, safe injection practices, environmental cleanliness, and instrument sterilization. The study emphasized the need for intensified sensitization programs to improve healthcare workers' understanding and adherence to infection control measures.

Mbenyi et al. (2023) conducted a study at the University of Port Harcourt Teaching Hospital in Rivers State to evaluate healthcare workers' knowledge, attitudes, and practices regarding standard precautions. All respondents reported prior knowledge of standard precautions, and the majority exhibited a positive attitude toward these measures. However, misconceptions were identified—50% of participants believed that recapping needles after use is a safe practice, contrary to established guidelines. While

knowledge and attitudes were generally positive, the persistence of unsafe practices emphasized the need for ongoing training and education.

Orji et al. (2023) conducted a MULTI-STATE mixed-methods study in Ebonyi, Ondo, and Niger States to evaluate infection prevention and control (IPC) knowledge, attitudes, and practices among healthcare workers during the COVID-19 pandemic. The findings indicated moderate levels of IPC knowledge and practices overall, with facility-based healthcare providers reporting higher levels of IPC training than community-based health workers. The study recommended sustained IPC training and the establishment of dedicated budget lines for COVID-19 response to improve compliance and strengthen emergency preparedness.

A cross-sectional study by Akodu et al. (2024) conducted in Surulere Local Government Area of Lagos State assessed infection control practices among primary healthcare workers. The findings showed that 97.3% of respondents had good knowledge of infection control, and 86.4% demonstrated good infection control practices. A significant association was found between knowledge and practice levels, highlighting the importance of continuous professional development and the adequate provision of safety kits.

Ilori et al. (2024) conducted a study in the Federal Capital Territory of Nigeria, specifically at the National Hospital Abuja, to assess healthcare workers' knowledge, attitudes, and practices regarding hospital-acquired infections (HAIs). The study revealed that 50.4% of participants had good knowledge of HAIs, 71.0% demonstrated a positive attitude towards HAI prevention, and 55.5% reported engaging in good infection prevention practices. Notably, good knowledge of HAIs was significantly associated with poor infection prevention practices, indicating that knowledge alone

may not ensure proper implementation. Gender, work experience, and previous training were also significantly associated with infection prevention practices.

Oluwagbemiga et al. (2021) conducted a study in a health facility located in Akure, Ondo State, to evaluate healthcare workers' knowledge, attitudes, and self-reported practices regarding infection control. The results indicated that while knowledge and attitudes were generally positive, actual practices did not always align with this knowledge, highlighting a gap between understanding and implementation.

These recent studies consistently demonstrate that while healthcare workers in Nigeria often possess adequate knowledge and positive attitudes towards standard precautions, actual compliance and practice can be inconsistent. Factors such as misconceptions, inadequate training, and systemic issues contribute to this gap. Addressing these challenges through continuous education, proper resource allocation, and policy enforcement is crucial for improving infection control practices.

Abuduxike et al. (2021) examined SP practices in Northern Cyprus among 233 healthcare professionals. Though general knowledge and attitudes were positive, compliance remained inconsistent. Doctors were less compliant than nurses, and those who received training in PPE use were significantly more compliant. This study highlighted occupational disparities and recommended tailored training approaches.

Lee et al. (2022), in South Korea, studied 450 hospital-based HCWs and found that institutional safety culture significantly predicted SP compliance. Workers who perceived strong administrative support were more likely to follow infection control guidelines. The authors suggested embedding SP into the organizational culture through leadership engagement and feedback mechanisms.

In a study conducted in Pakistan, Akhtar et al. (2023) assessed SP knowledge and adherence among HCWs in public hospitals. While knowledge scores were high (87%), actual practice was low (62%), particularly among support staff. The study identified insufficient availability of PPE and lack of administrative monitoring as key barriers. These findings align with Nigerian studies indicating that knowledge does not guarantee compliance without enabling infrastructure.

In Ghana, Addai et al. (2023) evaluated infection control among 180 HCWs in three teaching hospitals. Although most participants had good theoretical understanding, compliance was influenced by job role, department, and frequency of training. The study emphasized that practical adherence depended more on routine supervisory checks and accessibility of materials than on awareness levels alone.

Finally, Khalid et al. (2024) conducted a multicenter study in Jordan involving both private and public hospitals. Their findings showed that HCWs in private institutions demonstrated better compliance due to stricter regulatory policies and continuous in-service training. The study recommended the implementation of similar enforcement mechanisms in public facilities to bridge the practice gap.

2.4 Summary of Literature Review

Studies on healthcare workers' adherence to standard precautions (SP) consistently reveal a knowledge-practice gap. Although awareness and attitudes are often moderate to high, actual compliance remains poor due to factors such as resource shortages, inadequate training, misconceptions, and weak policy enforcement. Nigerian studies highlight role-based disparities and training challenges, especially among junior staff, while international research points to the influence of organizational culture, leadership, and regulatory pressure.

However, significant gaps remain in existing literature. Most Nigerian studies are limited to hospital settings, neglecting primary and community healthcare environments. Research also tends to focus on quantitative compliance measures, with little attention to qualitative insights into healthcare workers' perceptions, motivations, and workplace dynamics. Additionally, few comparative studies exist across regions or countries, restricting opportunities to benchmark best practices and adapt them to local contexts.

To address these shortcomings, the present study investigates healthcare workers' knowledge, attitudes, and practices regarding SP in a Nigerian tertiary hospital. By integrating behavioral, institutional, and systemic perspectives, and by including qualitative insights, it seeks to provide a deeper understanding of not only what healthcare workers do, but also the underlying reasons for compliance or non-compliance.

CHAPTER THREE
RESEARCH METHODOLOGY

The chapter included the research design, study setting, target population, sample size, sampling technique, instrument for data collection, pilot study, validity and reliability of the instrument, method of data collection, method of data analysis, and ethical considerations.

3.1 Research Design

This study adopted a descriptive cross-sectional design to examine the knowledge, attitude, and practice of standard precautions among healthcare workers in selected

clinics in Egor Local Government Area, Edo State. A cross-sectional study is a type of observational research that collects data from a population at a single point in time, making it effective for assessing the status of healthcare workers' adherence to standard precautions (Capili, 2021). This design allowed for the efficient and practical collection of data from the target population, providing a snapshot of their knowledge, attitudes, and practices related to infection prevention measures (Takona, 2023).

The descriptive cross-sectional design was particularly useful for identifying associations between healthcare workers' knowledge, attitude, and practice of standard precautions. By examining these factors at one point in time, the study provided insights into how well healthcare workers in Egor Local Government Area adhered to standard safety measures and the factors that influenced their compliance.

3.2 Research Setting

This study was carried out in selected healthcare clinics located within Egor Local Government Area of Edo State, Nigeria. Egor LGA is one of the metropolitan local government areas in Benin City, known for its high population density and diverse healthcare needs. It featured a mix of public and private health institutions that served urban and semi-urban communities.

The selected clinics for this study included Edo-Ose Specialist Clinic, St. Stevens Clinic, Aniso Specialist Clinic, Winseph's Family Clinic, Blue Cross Clinic, New-Life Clinic, First Estate Clinic, Total Care Clinic, Apex Clinic, Tobita Medical Clinic, Aco Divine Clinic, and Divine Appreciation Ministry Clinic. These clinics were chosen to reflect a broad spectrum of healthcare service providers within the local government area, ranging from general outpatient care to specialized medical services.

Each clinic operated independently and catered to a varied patient demographic, making them suitable for exploring healthcare practices in real-world clinical environments. The choice of these facilities ensured representation from different healthcare sectors and provided an appropriate context for assessing operational adherence to standard precautions within Egor LGA.

3.3 Target Population

The target population for this study consisted of healthcare workers employed in twelve selected clinics within Egor Local Government Area, Edo State, Nigeria. These healthcare workers included doctors, nurses, laboratory scientists, pharmacists, and clinical support staff, all of whom were directly involved in patient care and clinical operations that required adherence to standard precautions. The total population of healthcare workers across the twelve clinics was 150.

These twelve clinics—previously listed in Section 3.2—spanned both public and private healthcare facilities and reflected a diversity of medical services and professional staffing. The healthcare workers in these clinics performed critical roles ranging from diagnosis and treatment to laboratory investigations, medication dispensing, and administrative support. Their daily responsibilities placed them at potential risk of exposure to infectious agents, making them a relevant population for assessing knowledge, attitudes, and practices regarding standard precautions.

By focusing on this defined group of professionals within the selected clinics, the study aimed to understand how various cadres of healthcare workers approached infection control measures in real-world clinical environments within Egor Local Government Area.

3.4 Inclusion Criteria

The following criteria guided participant selection:

- Employment in selected clinics: Only healthcare workers who were employed in the 12 selected clinics in Egor LGA were considered.
- Direct patient contact: Eligible participants had regular interaction with patients (e.g., doctors, nurses, laboratory scientists).
- Minimum of six months of experience: Participants had worked in their current clinic for at least six months.
- Voluntary participation: Only those who provided informed consent were included.

These criteria ensured that the study focused on healthcare workers with sufficient exposure to clinical practices involving standard precautions.

3.5 Exclusion Criteria

Participants were excluded based on the following:

- Less than six months of work experience.
- No direct patient contact (e.g., administrative or non-clinical staff).
- Unavailability during data collection (e.g., those on leave).
- Refusal to give informed consent.

These exclusions helped maintain the study's focus on active, frontline healthcare workers who were directly involved in infection prevention practices.

3.6 Sample Size Determination

Due to the relatively small and accessible population of healthcare workers across the 12 selected clinics in Egor Local Government Area—estimated at approximately 150—

a census sampling approach was adopted. This meant that all eligible healthcare workers who met the inclusion criteria were invited to participate in the study. Using a census approach ensured full population coverage, enhanced data reliability, and eliminated the need for complex sample size calculations. It also helped minimize sampling bias and accounted for potential non-responses or exclusions due to ineligibility, absence, or refusal to participate. By including the entire population of interest, the study aimed to obtain comprehensive and representative data on the knowledge, attitude, and practice of standard precautions among healthcare workers in the selected clinics.

3.7 Sample and Sampling Technique

This study adopted a census sampling technique, targeting the entire population of eligible healthcare workers across the 12 selected clinics in Egor Local Government Area, Edo State. Given the manageable population size of approximately 150 healthcare workers, and to ensure comprehensive representation, all eligible participants who met the inclusion criteria were invited to take part in the study. This approach enhanced the reliability of the results and minimized sampling bias. In cases where some participants were unavailable or unwilling to participate, efforts were made to reach a participation rate as close as possible to full coverage.

3.8 Instrument for Data Collection

Data for this study were collected using a structured, self-administered questionnaire (Appendix I) that was developed by the researcher based on the study objectives. The 28-item instrument was divided into five sections and was designed to assess the knowledge, attitude, and practice of standard precautions, as well as factors influencing compliance and the role of management support among healthcare workers. The

questionnaire comprised both closed-ended and Likert-scale questions to allow for ease of analysis and clarity of responses. The sections included:

Section A: Demographic Information

This section gathered data on participants' age, gender, professional category, years of experience, and clinic of employment. This information helped provide context for interpreting patterns in knowledge, attitude, and practice. This section consisted of 6 items.

Section B: Knowledge of Standard Precautions

This section assessed healthcare workers' understanding of standard precautions, such as hand hygiene, use of personal protective equipment (PPE), safe injection practices, and waste disposal. Respondents answered multiple-choice and "True/False" questions based on established infection control guidelines. This section consisted of 6 items.

Section C: Attitude Towards Standard Precautions

This section measured participants' perceptions, beliefs, and motivation regarding adherence to standard precautions using a 4-point Likert scale (Strongly Agree to Strongly Disagree). This section consisted of 11 items.

Section D: Practice of Standard Precautions

This section evaluated the actual implementation of safety measures by healthcare workers, such as the frequency of handwashing, use of gloves, disposal of sharps, and decontamination of equipment. Responses were recorded on a 4-point Likert scale ranging from "Always" to "Never." This section consisted of 6 items.

Section E: Factors Influencing Compliance and Management Support

This section explored internal and external influences on compliance, including the

availability of PPE, workload, institutional policies, training received, and management supervision. Likert-scale questions were used to gauge the perceived impact of these factors on routine safety behaviors. This section consisted of 5 items.

3.9 Validity of the Instrument

Validity refers to the extent to which an instrument accurately measures what it is intended to measure (Creswell & Creswell, 2018). In the context of this study, it reflected how well the structured questionnaire captured the knowledge, attitude, and practice of standard precautions among healthcare workers. To ensure content validity, the research instrument was subjected to expert review by the project supervisor. The supervisor evaluated each questionnaire item for clarity, relevance, and alignment with the study's specific objectives. These objectives included assessing healthcare workers' understanding and compliance with standard precautions, as well as identifying influencing factors. Based on the feedback received, necessary revisions were made to improve the language, structure, and content coverage of the questionnaire. This process ensured that the instrument was capable of collecting valid and meaningful data from the target population.

3.10 Reliability of the Instrument

Reliability refers to the degree to which an instrument consistently produces stable and dependable results over time and across different conditions (Polit & Beck, 2021). A reliable instrument minimizes measurement errors and ensures that responses are consistent and replicable. To assess the reliability of the research instrument, a pilot study was conducted using a sample of approximately 20 healthcare workers selected from clinics within Egor Local Government Area that were not included in the main study. This pretest evaluated the internal consistency, clarity, and comprehensibility of

the questionnaire items. Based on the results of the pilot test, necessary adjustments were made to improve the wording, structure, and flow of the questionnaire. Internal consistency was assessed using Cronbach's alpha coefficient, with a value of 0.7 or higher considered acceptable for the reliability of the instrument. This process ensured that the questionnaire yielded consistent results when administered to similar groups of respondents.

3.11 Data Collection Procedure

Data for this study were collected using structured, self-administered questionnaires distributed to healthcare workers in the selected clinics within Egor Local Government Area. The distribution took place during convenient periods such as break times or at the end of work shifts in order to minimize disruption to clinical duties. Participants were given brief instructions and assured of confidentiality before receiving the questionnaire. Respondents were allowed to complete the questionnaires on-site and return them immediately after completion. In situations where immediate completion was not possible, participants were allowed to return the filled questionnaires within 24 hours, and follow-up was conducted to ensure timely retrieval. All collected questionnaires were reviewed for completeness on the spot where possible and securely stored for data analysis. This approach maximized response rates, reduced delays, and maintained data integrity throughout the collection process.

3.12 Data Analysis

Data collected from healthcare workers were analyzed using both descriptive and inferential statistical methods, with the aid of the Statistical Package for the Social Sciences (SPSS), version 25. Descriptive statistics such as frequency counts, percentages, means, and standard deviations were used to summarize data from Section

A (demographic variables) and Sections B–E (knowledge, attitude, practice, and compliance with standard precautions). For items measured on a Likert scale (particularly in the attitude and practice sections), responses were assigned numerical values (e.g., 1 = Strongly Disagree to 5 = Strongly Agree) and analyzed using mean scores to determine overall trends. The internal consistency of these items was assessed during the pilot phase using Cronbach's alpha.

Cut-off points were used to categorize respondents' overall performance:

- A score of ≥75% of the total possible score was classified as good.
- A score between 50% and 74% was classified as moderate.
- A score <50% was classified as poor.

Inferential statistics were employed to test associations between categorical variables. Chi-square (χ^2) tests were used to explore relationships such as:

- Professional category vs. compliance level
- Knowledge level vs. practice of standard precautions

A p-value less than 0.05 was considered statistically significant. The results were interpreted in line with the study objectives to draw conclusions about the knowledge, attitudes, and practices of healthcare workers regarding standard precautions, as well as the factors that influenced their compliance.

3.13 Ethical Considerations

This study adhered to established ethical principles, including informed consent, confidentiality, and voluntary participation. Prior to data collection, ethical approval was obtained from the Health Research Ethics Committee (HREC), Edo State Ministry

of Health, to ensure that the study complied with institutional and national ethical standards. A copy of the approval letter was included in Appendix II of this work.

In addition, informed consent and permission were obtained from all respondents before the commencement of data collection. The following ethical considerations were observed throughout the research process:

- Confidentiality: Information provided by respondents was treated with the highest level of confidentiality. The questionnaire did not request any personally identifying details such as names, staff IDs, or addresses, thereby ensuring respondent anonymity. Participants were informed that their responses would be used solely for academic and scientific purposes.
- Self-Determination and Voluntary Participation: Participants were fully informed of their right to voluntarily decide whether to participate in the study. They were assured that their participation—or decision not to participate—would not affect their professional roles, relationships with colleagues, or standing within their institutions. Respondents had the right to withdraw from the study at any stage without facing any form of penalty. They were also free to skip any questions they found uncomfortable.
- Avoidance of Plagiarism: Academic integrity was maintained throughout the research process. All data sources, citations, and referenced literature were properly acknowledged both within the body of the work and in the reference section. This ensured transparency, credibility, and compliance with established academic standards regarding plagiarism and intellectual honesty.

CHAPTER FOUR

PRESENTATION OF RESULTS

Table 4.1a Demographic Data of Respondents (n=150)

Variable	Category	Frequency (n=150)	Percentage (%)
Age Group	Below 25 years	22	14.7
	25–30 years	38	25.3
	31–40 years	45	30.0
	41–50 years	28	18.7
	51 years and above	17	11.3
Gender	Male	68	45.3

Variable	Category	Frequency (n=150)	Percentage (%)
	Female	82	54.7
Professional Category	Doctor	24	16.0
	Nurse	54	36.0
	Laboratory Technician	32	21.3
	Pharmacist	18	12.0
	OtherS	22	14.7
Years of Experience	Less than 1 year	13	8.7
	1–3 years	39	26.0
	4–6 years	42	28.0
	7–10 years	34	22.7
	Over 10 years	22	14.7

Table 4.1b Demographic Data of Respondents (n=150)

Clinic of Employment	Edo-Ose Specialist Clinic	12	8.0
	St. Stevens Clinic	13	8.7
	Aniso Specialist Clinic	11	7.3
	Winseph's Family Clinic	12	8.0
	Blue Cross Clinic	12	8.0
	New-Life Clinic	12	8.0

First Estate Clinic	11	7.3
Total Care Clinic	13	8.7
Apex Clinic	13	8.7
Tobita Medical Clinic	13	8.7
Aco Divine Clinic	14	9.3
Divine Appreciation Ministry Clinic	14	9.3

The demographic distribution of respondents shows that the majority were aged 31–40 years (30.0%), followed by those aged 25–30 years (25.3%). Females accounted for 54.7%, while males represented 45.3% of the respondents. Professionally, nurses constituted the largest group (36.0%), followed by laboratory technicians (21.3%) and doctors (16.0%).

Table 4.2: Knowledge of Standard Precautions Among Respondents

Variable	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean	Remark
I am familiar with the concept of hand hygiene.	10(6.7%)	18(12.0%)	77 (51.3%)	45(30.0%)	3.05	Positive
I know the proper steps for handwashing.	12(8.0%)	21 (14.0%)	70 (46.7%)	47(31.3%)	3.01	Positive
I understand the importance of using Personal Protective Equipment (PPE).	8(5.3%)	17 (11.3%)	74 (49.3%)	51 (34.0%)	3.12	Positive

I am aware of the correct procedure for disposing of sharps.	13(8.7%)	22 (14.7%)	72 (48.0%)	43 (28.7%)	2.97	Positive
I understand the guidelines for safe injection practices.	15(10.0%)	30 (20.0%)	65 (43.3%)	40 (26.7%)	2.87	Positive
I am knowledgeable about healthcare waste disposal methods.	20(13.3%)	27 (18.0%)	60 (40.0%)	43 (28.7%)	2.84	Positive
Grand Mean					**2.98**	**Positive**

Mean cutoff = 2.5

The findings in Table 4.2 reveal that the majority of respondents demonstrated a good level of knowledge regarding standard precautions. A substantial 81.3% of participants either agreed or strongly agreed that they are familiar with the concept of hand hygiene, while 77.3% confirmed their knowledge of the proper steps for handwashing. This indicates strong awareness of basic infection control practices.

Table 4.3: Attitude Towards Standard Precautions

Variables	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean	Remark
Following standard precautions is essential in preventing infection.	10 (6.7%)	15(10.0%)	72(48.0%)	63 (42.0%)	3.19	Positive

PPE is unnecessary unless dealing with high-risk patients. *(reversed)*	70 (46.7%)	45(30.0%)	22(14.7%)	13 (8.7%)	1.85	Negative
Adhering to standard precautions is part of my professional responsibility.	6 (4.0%)	20(13.3%)	78(52.0%)	46 (30.7%)	3.09	Positive
Healthcare institutions should enforce strict infection control policies.	8 (5.3%)	18(12.0%)	75(50.0%)	49 (32.7%)	3.10	Positive
Continuous training on infection control is necessary.	5 (3.3%)	16(10.7%)	80(53.3%)	49 (32.7%)	3.15	Positive
Grand Mean					**2.88**	**Positive**

The data presented in Table 4.3 indicate that the majority of healthcare workers surveyed held a positive attitude toward standard precautions. Specifically, 90% agreed or strongly agreed that following standard precautions is essential in preventing infections. Similarly, 82.7% recognized adherence to standard precautions as part of their professional responsibility, and 82.7% also affirmed that healthcare institutions should enforce strict infection control policies.

Table 4.4: Practice of Standard Precautions

Variable	Never	Rarely	Sometimes	Always	Mean	Remark
I wash my hands before and after patient contact.	5 (3.3%)	12 (8.0%)	43 (28.7%)	90 (60.0%)	3.45	Positive
I wear gloves when handling body fluids or infectious materials.	4 (2.7%)	10 (6.7%)	35 (23.3%)	101(67.3%)	3.55	Positive
I dispose of sharps immediately after use in proper containers.	6 (4.0%)	15 (10.0%)	40 (26.7%)	89 (59.3%)	3.41	Positive
I use PPE (gown, mask, etc.) whenever required.	9 (6.0%)	18 (12.0%)	46 (30.7%)	77 (51.3%)	3.27	Positive
I decontaminate reusable medical equipment after use.	10 (6.7%)	20 (13.3%)	41 (27.3%)	79 (52.7%)	3.26	Positive
I follow protocols for handling bloodborne pathogens.	8 (5.3%)	16 (10.7%)	47 (31.3%)	79 (52.7%)	3.31	Positive
Grand Mean					**3.38**	**Positive**

Mean cutoff = 2.5

The results in Table 4.4 demonstrate a generally high level of compliance among healthcare workers with standard precautionary practices. A significant 88.7% of respondents reported that they “always” or “sometimes” washed their hands before and after patient contact, while 90.6% consistently wore gloves when handling body fluids or infectious materials.

Table 4.5: Factors Influencing Compliance and Management Support

Variable	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean	Remark
Availability of PPE affects my adherence to standard precautions.	12 (8.0%)	18 (12.0%)	63 (42.0%)	57 (38.0%)	3.10	Positive
My workload limits my ability to follow infection control procedures.	22 (14.7%)	30 (20.0%)	70 (46.7%)	28 (18.6%)	2.69	Positive
Institutional policies encourage compliance with standard precautions.	9 (6.0%)	14 (9.3%)	81 (54.0%)	46 (30.7%)	3.09	Positive
I have received adequate training on standard precautions.	11 (7.3%)	17 (11.3%)	69 (46.0%)	53 (35.3%)	3.10	Positive
Management support encourages me to follow safety guidelines.	10 (6.7%)	20 (13.3%)	66 (44.0%)	54 (36.0%)	3.10	Positive
Grand Mean					**3.02**	**Positive**

Mean cutoff = 2.5

The result in Table 4.5 highlights several institutional and organizational factors that influence healthcare workers' adherence to standard precautions. A notable 80% of respondents agreed that the availability of PPE directly affects their compliance. Additionally, 65.3% acknowledged that workload negatively impacts their ability to strictly follow infection control measures.

4.2.0 Hypothesis Testing

This section presents the results of the hypotheses formulated in Chapter One. The hypotheses were tested using the Chi-square test of independence at a 0.05 level of significance.

Hypothesis One

H_{01}: There is no significant relationship between healthcare workers' knowledge of standard precautions and their practice of standard precautions.

Variables Compared	χ^2 (Chi-square)	df	p-value	Decision
Knowledge × Practice	15.42	3	0.001	Reject H_{01}

Since the p-value (0.001) is less than the 0.05 level of significance, we reject the null hypothesis. This implies that there is a statistically significant relationship between healthcare workers' knowledge and their practice of standard precautions. This suggests that higher levels of knowledge contribute positively to safer clinical practices.

Hypothesis Two

H_{02}: There is no significant relationship between healthcare workers' attitude towards standard precautions and their compliance with safety measures.

Variables Compared	χ^2 (Chi-square)	df	p-value	Decision
Attitude × Compliance Factors	12.68	3	0.005	Reject H_{02}

The p-value (0.005) is below the 0.05 significance level, so we reject the null hypothesis. This indicates a significant association between healthcare workers' attitude and their compliance with standard precautions. A positive attitude is thus linked to better adherence to infection prevention protocols.

Hypothesis Three

H_{03}: There is no significant relationship between management support and the practice of standard precautions among healthcare workers.

Variables Compared	χ^2 (Chi-square)	df	p-value	Decision
Management Support Practice	× 10.87	3	0.012	Reject H_{03}

With a p-value of 0.012, which is less than the 0.05 threshold, the null hypothesis is rejected. This indicates that management support significantly influences the practice of standard precautions among healthcare workers. Strong institutional backing and supervision may thus lead to safer work practices.

CHAPTER FIVE

DISCUSSION OF FINDINGS, SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents a comprehensive discussion of the data analyzed in Chapter Four. It discusses the major findings in line with the stated research objectives, supported by relevant literature. It also outlines the implications of the study, limitations encountered during the research process, and provides a concise summary, conclusion, and recommendations for improving the knowledge, attitude, and practice of standard precautions among healthcare workers. Finally, suggestions for further research are highlighted.

5.1 Discussion of Findings

Demographic Characteristics of Respondents

The demographic data of respondents revealed that the majority were within the age range of 31–40 years (30.0%), followed by those aged 25–30 years (25.3%) . This indicates that most healthcare workers in the study area were in their productive and mid-career stages, which is consistent with the findings of Adeyemi et al. (2022), who reported that healthcare institutions in Nigeria are predominantly staffed by young and middle-aged professionals. Such an age distribution is favorable for compliance with infection control measures, as younger healthcare workers are often more receptive to new training and guidelines (Okeke & Nwankwo, 2021). Gender distribution showed a slightly higher proportion of females (54.7%) compared to males (45.3%). This finding aligns with Oladeji et al. (2023), who noted that nursing and laboratory professions in Nigeria are female-dominated, reflecting global patterns in healthcare workforce

demographics. The predominance of women may also influence compliance levels, as several studies (e.g., Ibrahim & Yusuf, 2021) have suggested that female healthcare workers often demonstrate greater adherence to safety practices, particularly hand hygiene and PPE use. In terms of professional category, nurses constituted the largest group (36.0%), followed by laboratory technicians (21.3%) and doctors (16.0%). This is in agreement with Usman et al. (2021), who reported that nurses usually form the backbone of healthcare delivery in both urban and rural facilities in Nigeria. The presence of a large nursing workforce is significant because nurses are frontline providers who spend the most time with patients, thus playing a central role in implementing standard precautions. The "others" category (14.7%) in this study comprised health attendants, record officers, and radiographers, whose inclusion highlights the multidisciplinary nature of infection prevention. However, studies such as Chukwu et al. (2022) have shown that non-clinical staff often have lower levels of knowledge and compliance compared to doctors and nurses, underscoring the importance of extending infection control training beyond core clinical staff. With respect to years of professional experience, the majority of respondents (28.0%) had 4–6 years of experience, while 14.7% had more than 10 years.

Objective 1: To assess the knowledge of healthcare workers about standard precautions.

The findings of this study reveal that the majority of healthcare workers in the selected clinics in Egor Local Government Area possessed a good level of knowledge about standard precautions. Most respondents agreed or strongly agreed with statements indicating familiarity with hand hygiene protocols, correct use of Personal Protective Equipment (PPE), safe injection practices, and appropriate methods for healthcare waste disposal. For example, over 75% of respondents affirmed knowledge of proper handwashing steps and the importance of PPE. This suggests a generally high level of

awareness and understanding of standard precautions among healthcare professionals in the area. This aligns with a study by Okeke et al. (2022), which found that healthcare workers in Enugu State demonstrated strong knowledge of infection control protocols, particularly concerning hand hygiene and sharps disposal. Similarly, Adewole et al. (2023) observed that nurses and laboratory staff in Lagos showed a high level of knowledge of standard precautions, largely due to regular in-service training and institutional guidelines. In another related study, Usman and Bello (2021) reported that more than 80% of primary healthcare workers in Kano State were knowledgeable about the principles of infection prevention, attributing this to sensitization campaigns and mandatory workshops conducted by local health authorities.

Objective 2: To assess the attitude of healthcare workers towards standard precautions

The study revealed that the majority of healthcare workers had a positive attitude toward standard precautions. A large percentage of respondents agreed or strongly agreed with key statements such as "Following standard precautions is essential in preventing infection" and "Continuous training on infection control is necessary." This reflects an encouraging perception of infection control as a professional obligation and a necessary part of daily clinical routines. Over 70% of respondents showed favorable attitudes on nearly all items, underscoring a commitment to safety and professionalism in clinical practice. This finding is in line with the work of Oladeji and Akinbami (2023), who reported that 81% of healthcare workers in Oyo State strongly believed in the efficacy of standard precautions in preventing infections. Their study emphasized that positive attitudes were closely tied to ongoing training and the perception of institutional support.

Similarly, Ezeonu and Alabi (2021) noted that the majority of healthcare professionals in their cross-sectional survey in Abuja demonstrated a proactive and responsible attitude towards standard precautions, which was attributed to strong professional ethics and peer influence. Moreover, a related study by Chukwuemeka et al. (2022) showed that positive attitudes significantly improved compliance rates. Their research among healthcare workers in rural health centers found that belief in the importance of precautions and fear of infection were strong motivators for adherence. This aligns with the findings of the current study, where a high proportion of respondents viewed adherence to infection control as both a moral and professional responsibility. However, a small percentage of respondents showed indifference or disagreement with some critical attitude statements, such as the necessity of wearing PPE unless handling high-risk patients. This suggests that while the overall attitude is positive, there are pockets of complacency or risk minimization that may pose a challenge to full compliance. This concern is supported by a study from Ibeh et al. (2023), which warned that even among well-trained staff, attitudes can waver in the absence of consistent policy enforcement and peer accountability.

Objective 3: To assess the practice of standard precautions among healthcare workers

The findings from this study indicate that healthcare workers' practice of standard precautions is relatively high, with a majority consistently engaging in hand hygiene, wearing gloves, and properly disposing of sharps. Specifically, the practice of hand hygiene before and after patient contact was reported as a regular habit by over 75% of respondents. Furthermore, the use of gloves when handling body fluids or infectious materials was regularly practiced by most healthcare workers. These results suggest that healthcare workers in the selected clinics are committed to implementing basic infection control measures, which is critical in reducing the spread of healthcare-associated

infections (HAIs). These results are consistent with the findings of Okeke et al. (2022), who noted that healthcare workers in Enugu state demonstrated high compliance with hand hygiene and PPE use, particularly in high-risk areas such as emergency and ICU settings. They emphasized the importance of personal accountability and institutional support in maintaining these practices. Similarly, Adeoye et al. (2021) found that the majority of healthcare workers in Lagos adhered to standard precautions in their day-to-day practice, with hand hygiene and PPE use cited as the most commonly observed practices. However, some gaps in practice were identified, particularly in the area of decontaminating reusable medical equipment. Only about 60% of healthcare workers regularly decontaminated equipment after use, which may reflect a lack of access to cleaning supplies or insufficient training on equipment sterilization. This finding mirrors the research of Akinbami et al. (2021), who reported lower adherence to protocols for cleaning medical equipment among healthcare workers in rural health centers.

Objective 4: To evaluate factors influencing compliance with standard precautions

The study revealed that several factors significantly influenced healthcare workers' compliance with standard precautions. Among these factors, the availability of personal protective equipment (PPE), institutional policies, and management support emerged as the most influential. A majority of healthcare workers reported that the availability of adequate PPE was crucial for their adherence to infection control protocols. Specifically, over 70% of respondents stated that access to gloves, masks, and gowns made them more likely to follow infection control procedures. This finding aligns with the research of Ibrahim et al. (2022), who found that the provision of adequate PPE directly impacts the consistent practice of standard precautions, particularly in areas of high patient contact such as emergency rooms and intensive care units. Furthermore, the study

highlighted the importance of institutional policies in shaping healthcare workers' compliance with standard precautions. Respondents who reported that their healthcare institutions had clear, enforced infection control policies were more likely to adhere to safety guidelines. This finding echoes the work of Nwogwugwu et al. (2021), which emphasized the role of hospital management in creating a conducive environment for infection control through well-defined policies and regular audits. When healthcare workers perceive that their institutions are committed to enforcing infection control policies, they are more likely to follow established guidelines. Management support was another significant factor that influenced compliance. Over 65% of respondents reported that their adherence to standard precautions was influenced by the encouragement and supervision provided by healthcare facility managers. This is consistent with the findings of Olumide et al. (2021), who noted that healthcare workers who received continuous support from hospital management and supervisors were more motivated to comply with infection control protocols. Moreover, the presence of regular training and feedback from management was cited as a key motivating factor in improving adherence to infection control practices. Despite these positive influences, challenges related to workload and time constraints were also highlighted as barriers to consistent compliance with standard precautions.

5.2 Implication of Findings

The findings of this study have significant implications for both policy and practice in healthcare settings. The identification of factors that influence healthcare workers' adherence to standard precautions provides critical insight into areas that require attention to enhance infection control practices.

Policy Implications

The importance of institutional policies in promoting compliance with standard precautions cannot be overstated. The study revealed that healthcare workers who perceived their institutions as having well-defined infection control policies were more likely to adhere to these practices. Therefore, healthcare institutions must establish, communicate, and regularly update clear infection control guidelines. These policies should be supported by a robust enforcement mechanism that holds healthcare workers accountable. Additionally, institutions must prioritize continuous staff education and training on the importance of standard precautions and the specific practices that need to be followed.

Practical Implications

The findings also highlight the practical challenges healthcare workers face in adhering to standard precautions, particularly due to the availability of personal protective equipment (PPE) and workload-related barriers. Ensuring adequate provision of PPE is critical to maintaining high standards of infection control. Healthcare facilities should allocate resources efficiently to guarantee that all staff members have easy access to essential protective gear, especially in high-risk areas like emergency departments and intensive care units. Furthermore, addressing workload challenges through proper staffing levels and reducing unnecessary administrative tasks can help ensure that healthcare workers have the time and energy to focus on infection prevention practices.

Implications for Management Support

The role of management support was particularly important in influencing compliance with standard precautions. Healthcare administrators must actively engage in the promotion of infection control practices by offering support through adequate

supervision, continuous training, and ensuring that infection control protocols are reinforced in routine practice. Supervisors should lead by example, following standard precautions themselves to set a positive example for their teams.

Finally, the study's findings suggest that improving the work environment by reducing stressors and increasing support for staff well-being could directly contribute to better compliance with infection control measures. By addressing these factors, healthcare organizations can foster an environment where adherence to infection control guidelines is part of the organizational culture, thus reducing the risk of healthcare-associated infections (HAIs).

5.3 Limitation of the Study

While this study provides valuable insights into the knowledge, attitude, and practice of standard precautions among healthcare workers, there are several limitations that should be noted:

Sampling Bias

The study was conducted in selected clinics in Egor Local Government Area, Edo State, which may limit the generalizability of the findings to other healthcare settings in Nigeria or internationally. A broader and more diverse sample across different geographical regions and healthcare sectors could provide a more comprehensive understanding of the factors influencing compliance with standard precautions.

Self-Reported Data

The study relied on self-reported data, which is susceptible to biases such as social desirability bias, where respondents may provide answers they believe are more socially

acceptable rather than their actual practices. Future research could consider incorporating observational methods to validate the self-reported data.

Cross-Sectional Design

The study's cross-sectional design provides a snapshot of healthcare workers' knowledge, attitude, and practices at a single point in time. Longitudinal studies that track changes in these factors over time would offer more robust data on how compliance with infection control measures evolves and what factors contribute to long-term adherence.

Despite these limitations, the study provides valuable findings that can inform future interventions aimed at improving compliance with infection control measures among healthcare workers.

5.4 Summary

This study aimed to assess the knowledge, attitude, and practice of standard precautions among healthcare workers in selected clinics in Egor Local Government Area, Edo State, Nigeria. The findings revealed that healthcare workers demonstrated a good level of knowledge regarding standard precautions, with significant variation in attitudes towards the importance of these practices. Factors such as the availability of PPE, workload, and institutional support were found to be influential in healthcare workers' compliance with infection control protocols. Additionally, management support was a key factor that enhanced adherence to infection control practices.

The study highlights the need for healthcare institutions to prioritize clear infection control policies, ensure adequate provision of PPE, and provide continuous training and management support to healthcare workers. These findings offer valuable insights for

healthcare administrators and policymakers aiming to improve infection control practices and reduce healthcare-associated infections.

5.5 Conclusion

In conclusion, the study demonstrates that healthcare workers' knowledge and attitudes towards standard precautions significantly influence their practice of infection control. The availability of adequate PPE, clear institutional policies, and strong management support were identified as key factors that enhance compliance with standard precautions. However, challenges such as workload pressures and inadequate training continue to hinder optimal adherence to infection control measures.

For healthcare institutions to effectively prevent the spread of infections, it is crucial that they implement strategies that address these barriers, provide consistent support, and foster a culture of safety and accountability.

5.6 Recommendations

Based on the findings of this study, the following recommendations are made:

1. **Enhance PPE Availability:** Healthcare institutions should prioritize the provision of sufficient PPE to healthcare workers, ensuring that protective equipment is readily available, particularly in high-risk areas such as emergency departments, operating rooms, and intensive care units.

2. **Implement and Enforce Clear Infection Control Policies**

Hospitals and healthcare facilities should develop and enforce comprehensive infection control policies that are communicated clearly to all healthcare workers. Regular training sessions and audits should be conducted to ensure compliance.

3. **Increase Management Support**

Healthcare management should provide ongoing support to frontline workers by offering regular training, ensuring adequate supervision, and fostering a supportive work environment. Leadership should model infection control behaviors to set a positive example for staff.

4. **Reduce Workload Pressures**

Healthcare institutions should explore ways to reduce staff workload by optimizing staffing levels, minimizing non-clinical tasks, and ensuring that healthcare workers have sufficient time to follow infection control protocols.

5. **Promote Continuous Education**

Continuous education and training on infection control practices should be a mandatory part of healthcare workers' professional development to ensure that they are always up to date with the latest guidelines and best practices.

5.7 Suggestions for Further Study

Future research should focus on the following areas:

Longitudinal Studies: Longitudinal studies that track changes in healthcare workers' compliance with standard precautions over time would provide more robust data on factors that contribute to long-term adherence to infection control measures.

Impact of Organizational Culture on Compliance: Research exploring how organizational culture and leadership styles influence compliance with infection control measures could offer valuable insights into fostering a culture of safety in healthcare settings.

Assessment of Healthcare Workers' Knowledge and Practices During an Outbreak: Investigating how healthcare workers' knowledge, attitude, and practice of infection

control measures change during an infectious disease outbreak, such as during a COVID-19 pandemic, would be beneficial for preparing healthcare systems for future crises.

Comparative Studies Across Different Healthcare Settings: Further studies should explore infection control practices in various healthcare settings, including private hospitals, public clinics, and specialized healthcare institutions, to understand how the environment and resources impact compliance with standard precautions.

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APPENDIX I

QUESTIONNAIRE

Department of Nursing Science,
School of Basic Medical sciences,
University of Benin,
Benin City,
Edo State.

Dear Respondent,

I am a 500 Level student of the department of Nursing, of the above mentioned institution conducting a research study on the ‘‘**KNOWLEDGE, ATTITUDE AND PRACTICE OF STANDARD PRECAUTIONS AMONG HEALTHCARE WORKERS IN SELECTED CLINICS IN EGOR LOCAL GOVERNMENT AREA, EDO STATE’’** as part of the requirement for the completion of a Bachelor’s Degree in Nursing Science.

Kindly and sincerely provide answers to the questions in the spaces provided. Every information provided is highly confidential and strictly for academic purpose. No names are required. You may decide to answer questions that best suits your understanding and for the accuracy in statistics. Please be independent and truthful as possible. Thank you.

Yours faithfully.

KNOWLEDGE, ATTITUDE AND PRACTICE OF STANDARD PRECAUTIONS AMONG HEALTHCARE WORKERS IN SELECTED CLINICS IN EGOR LOCAL GOVERNMENT AREA, EDO STATE

SECTION A (DEMOGRAPHIC INFORMATION)

Please answer all questions by ticking (√) the option

1. Age on Last Birthday:

☐ Below 25 years ☐ 25–30 years ☐ 31–40 years ☐ 41–50 years ☐ 51 years and above

2. Sex:

☐ Male ☐ Female

3. Highest Level of Education:

☐ Diploma ☐ OND/HND ☐ Bachelor's Degree ☐ Postgraduate Degree ☐ Other (please specify): _____

4. Professional Category:

☐ Doctor ☐ Nurse ☐ Laboratory Technician ☐ Pharmacist

☐ Other (please specify): _____

5. Years of Experience in Healthcare:

☐ Less than 1 year ☐ 1–3 years ☐ 4–6 years ☐ 7–10 years ☐ Over 10 years

6. Clinic of Employment:

☐ Edo-Ose Specialist Clinic ☐ St. Stevens Clinic ☐ Aniso Specialist Clinic

☐ Winseph's Family Clinic ☐ Blue Cross Clinic ☐ New-Life Clinic

☐ First Estate Clinic ☐ Total Care Clinic ☐ Apex Clinic ☐ Tobita Medical Clinic

☐ Aco Divine Clinic ☐ Divine Appreciation Ministry Clinic

SECTION B: KNOWLEDGE OF STANDARD PRECAUTIONS

SECTION C: ATTITUDE TOWARDS STANDARD PRECAUTIONS

Key: SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree

S/N	Statement	SD	D	A	SA
1	I am familiar with the concept of hand hygiene.				
2	I know the proper steps for handwashing.				
3	I understand the importance of using Personal Protective Equipment (PPE).				
4	I am aware of the correct procedure for disposing of sharps.				
5	I understand the guidelines for safe injection practices.				
6	I am knowledgeable about healthcare waste disposal methods.				

S/N	Statement	SD	D	A	SA

7	Following standard precautions is essential in preventing infection.				
8	Personal Protective Equipment is unnecessary unless dealing with high-risk patients.				
9	Adhering to standard precautions is part of my professional responsibility.				
10	Healthcare institutions should enforce strict infection control policies.				
11	Continuous training on infection control is necessary.				

SECTION D: PRACTICE OF STANDARD PRECAUTIONS

Key: N = Never, R = Rarely, S = Sometimes, A = Always

S/N	Statement	N	R	S	A
12	I wash my hands before and after patient contact.				
13	I wear gloves when handling body fluids or infectious materials.				
14	I dispose of sharps immediately after use in proper containers.				
15	I use Personal protective Equipment (gown, mask, etc.) whenever required.				
16	I decontaminate reusable medical equipment after use.				
17	I follow protocols for handling bloodborne pathogens.				

SECTION E: FACTORS INFLUENCING COMPLIANCE AND MANAGEMENT SUPPORT

KEY: SD = STRONGLY DISAGREE, D = DISAGREE, A = AGREE, SA = STRONGLY AGREE

S/N	Statement	SD	D	A	SA
18	Availability of Personal Protective Equipment affects my adherence to standard precautions.				

S/N	Statement	SD	D	A	SA
19	My workload limits my ability to follow infection control procedures.				
20	Institutional policies encourage compliance with standard precautions.				
21	I have received adequate training on standard precautions.				
22	Management support encourages me to follow safety guidelines.				