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# Factors Influencing IPC Guideline Adherence Among Healthcare Workers in a Private Hospital in Kampala, Uganda

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**Abstract**

**Background:** Healthcare-associated infections (HAIs) pose a major challenge to patient safety and the quality of healthcare worldwide, with a higher burden in low- and middle-income countries (LMICs) (WHO,2024). Infection Prevention and Control (IPC) is a known strategy for the prevention of HAIs. However, the implementation of IPC recommendations by Healthcare Workers (HCWs) is still inadequate in many facilities. Despite the ongoing efforts to improve IPC, there is a knowledge gap in understanding the practical challenges and enabling factors that influence IPC adherence from the perspective of healthcare workers at the facility level (Nanyondo et al., 2025).

**Objective**: To explore healthcare workers' perceptions and experiences regarding IPC practices, determine the barriers and facilitators for adherence, and identify strategies for strengthening adherence to IPC guidelines among healthcare workers at a private hospital in Kampala**.**

**Methods:** A qualitative study with 22 HCWs utilized purposive sampling from the study site. In-depth interviews were conducted, recorded until data saturation, and thematically analyzed, with ethical approval from the university's ethics committee and management permission.

**Results:** Participants demonstrated a strong awareness of infection control practices, particularly in hand hygiene and personal protective equipment, waste management, and environmental cleaning, though this varied by profession. Factors influencing adherence included visible leadership, training, resource availability, and motivation, while barriers involved staffing shortages, heavy workloads, inadequate resources, and behavioral issues. Improvement strategies highlighted the need for enhanced training, supervision, decentralized leadership, infrastructure development, and a robust safety culture.

**Conclusion:** The enhancement of IPC practices requires a multimodal approach that targets the improvement of knowledge, motivation, leadership, resources, and culture.

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**Keywords:** Infection Prevention and Control (IPC), Healthcare Workers, Adherence, Barriers and Facilitators, Strategies, Patient Safety.

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## 1. Introduction

### Background to the study

Globally, healthcare-associated infections (HAIs) affect 7% of patients in high-income countries and 15% in LMICs worldwide. (WHO, 2024). HAIs have been linked with increased morbidity, mortality, length of hospital stay, reduced quality of life, and higher treatment costs, in addition to antimicrobial resistance; however, many are preventable with effective infection prevention and control measures (WHO) (World Health Organization, 2020). HAI prevalence is underestimated due to underreporting, poor data quality, and surveillance challenges in LMICs (Odoom et al., 2025). WHO reported varying HAI rates worldwide, such as 27% for Africa, 12.9% for Southeast Asia, and 9.6% for the Americas. (WHO, 2024).

Effective IPC Programmes can reduce HAIs, as indicated by WHO. Key elements that make IPC programs successful are national and facility-based programs, an IPC team, financial commitment, evidence-based guidelines, continuous education for health care workers, a monitoring system, multimodal strategies, regular audits and feedback, consideration for workload and work environment, patient safety, and risk management for infection control (Ministry of Health (MOH), Uganda, 2025), (Centers for Disease Control and Prevention, 2024).

IPC's Standard Precautions are designed to protect health care workers from exposure to blood, body fluids, and infection. Providers should assess patient risk, practice proper hand hygiene, utilize appropriate PPE, and use aseptic techniques to mention but a few. Transmission-Based Precautions are used in addition to these precautions for patients known or suspected to be infected with highly transmissible or epidemiologically important pathogens. They are used in outbreak situations or for highly infectious cases to provide extra precautions (Centers for Disease Control and Prevention, 2024).

The Ministry of Health in Uganda created national IPC guidelines aligned with WHO standards. Initial guidelines from 2013 established a framework for healthcare workers and managers. Uganda's epidemic-prone environment has led to diseases like COVID-19 and Ebola, increasing healthcare-associated infections and multidrug-resistant organisms. Enhanced IPC measures and education are vital for public health (MOH, 2013). To keep HCWs safe, the Ministry of Health of Uganda introduced the revised Infection Prevention Guidelines, the 2nd edition (Ministry of Health, 2025). Revised IPC guidelines address past epidemics and health facility gaps, aligning with WHO standards. Previous failures stemmed from low worker compliance due to scarce resources and training, emphasizing a commitment to safety and patient-centered practices (Ministry of Health (MOH), Uganda, 2025).

The Ministry of Health Uganda promotes Infection Prevention and Control (IPC) to enhance patient care in resource-limited settings. However, IPC faces challenges, including resource limitations, poor compliance, and inadequate training, which elevate cross-infection risks. This study aims to identify enabling factors and barriers influencing the implementation of IPC practices among healthcare workers in these facilities (Ministry of Health (MOH), Uganda, 2025).

### Statement of the Problem

Adherence to IPC guidelines remains unsatisfactory in many healthcare settings, despite the presence of national IPC guidelines, functional IPC committees, focal persons, and institutional protocols (Ministry of Health (MOH), Uganda, 2025). Effective IPC implementation is hindered by limited budgets, inadequate training, lack of job aids, poor supervision, staffing shortages, and heavy workloads. Despite 86.7% of health facilities having IPC committees and 90.7% having IPC focal persons, only 49.3% have annual plans, and 32.3% receive budget support. WASH infrastructure is also lacking (Nanyondo et al., 2025). Despite these efforts, there is a knowledge gap in understanding the practical challenges and enabling factors that influence IPC adherence from the perspective of healthcare workers at facility level. This study seeks to explore the barriers and facilitators to IPC implementation among healthcare workers in selected health facilities.

### Objectives of the Study

- To explore healthcare workers' perceptions and experiences regarding IPC practices at a private hospital in Kampala.
- To explore the facilitators that promote adherence to IPC guidelines among healthcare workers at a private hospital in Kampala.
- To explore the barriers that hinder adherence to IPC guidelines among healthcare workers at a private hospital in Kampala
- To identify strategies for strengthening adherence to IPC guidelines among healthcare workers at a private hospital in Kampala.

## Methodology

### Study Design

A qualitative study explored healthcare workers' experiences and compliance with IPC recommendations, revealing opinions, practices, and individual/system-level influencing factors.

**Study Population**

The study included diverse healthcare workers in patient care, such as nurses, doctors, laboratory staff, and allied professionals, facilitating a comprehensive understanding of IPC practice adherence.

**Inclusion and Exclusion Criteria**

Inclusion criteria were based on healthcare professionals with 6+ months of patient care experience, and exclusions were based on probationary status, non-clinical roles, or leave of absence.

**Sampling Size Determination**

The expected number of participants recruited was 15–20. Recruitment continued until data saturation was reached, and 22 participants were reached

**Sampling method**

A purposive sampling technique was used in selecting participants who have expertise and experience in the different departments that have direct involvement with IPC.

**Study Instrument**

In-depth interviews were conducted using a semi-structured interview guide and took about 20 minutes. The guide explored participants' perceptions and experiences of IPC practices, barriers and facilitators to adherence, and put forward suggestions for improvement.

**Data Analysis**

Interview transcripts were manually analyzed using thematic content analysis to examine participants' knowledge, attitudes, experiences, and suggested strategies regarding infection prevention and control (IPC) practices. The researcher familiarized themselves with the transcripts through repeated readings, extracting relevant information and assigning initial codes based on recurring ideas. Related codes were grouped into broader patterns and candidate themes, which were reviewed and refined through comparisons with the original transcripts. Final themes were defined and named based on identified meanings, supported by relevant verbatim quotations.

**Trustworthiness of the Study**

The research was carried out using Lincoln and Guba's trustworthiness criteria to provide rigorous data (Lincoln and Guba, 1985). Credibility was achieved through member checking, sustained immersion and peer debriefing. Transferability was provided through detailed descriptions. Face-to-face interviews were audio-recorded, transcribed verbatim, and consistently conducted. An audit trail was maintained, and emerging codes and themes were reviewed against transcripts for accuracy in reflecting participants' accounts

## Results

A total of 22 (twenty-two) were interviewed from Nursing, Medical, Administration, food services, housekeeping, and Allied health, such as Lab and Pharmacy. There was representation of both genders, male and female, and all the participants interviewed had spent at least a year at the hospital.

### HEALTHCARE WORKERS' PERCEPTIONS AND EXPERIENCES OF IPC

**Understanding of IPC among healthcare workers**

All identified IPC as crucial for infection prevention. *"Infection Prevention and Control is about making sure there is no spread of infection on either side, both to the patient and to the healthcare worker*." (P001) and another simply defined IPC as "*IPC, these are the general set of rules in a particular place which one is supposed to follow in order to maintain sort of cleanliness of the environment*." (P012).

**IPC as a core patient and healthcare worker safety practice**

IPC is directly related to patient safety and is a continuous process rather than a one-time activity: "*And if you control and prevent infections, then you're promoting patient safety. It means if a patient comes in with malaria, they don't live with the UTI*." P015. IPC ensures patient safety and to control healthcare associated infection to patients, HCWs, visitors or the community, said P018.

**Perceived benefits of IPC beyond infection control**

Effective IPC implementation benefits include shorter hospital stays, faster recovery, and lower costs. *"Infection Prevention and Control is very important because it helps reduce the patient's length of stay in the hospital. When IPC is followed well, patients recover faster, and even the hospital bills are reduced, which benefits both the patient and the hospital*." (P002). "*Proper IPC practice also contributes to preventing microbial resistance*." (P004).

**Figure 1: A figure showing Demographics of Participants in the study**

| Characteristic | Category | Number |
|---|---|---|
| **Gender** | Female | 9 |
| | Male | 13 |
| **Roles** | Nurse | 9 |
| | Midwife | 2 |
| | Doctor | 4 |
| | Housekeepers | 2 |
| | Biomedical | 1 |
| | Senior Management | 1 |
| | Pharmacy | 1 |
| | Laboratory | 1 |
| | Facilities | 1 |
| **Department** | ICU | 2 |
| | Neonatal ICU | 1 |
| | Medical Surgical | 4 |
| | General OPD | 4 |
| | Theatre | 2 |
| | Administration | 1 |
| | Emergency Area | 2 |
| | Pharmacy | 1 |
| | Laboratory | 1 |
| | Biomedical | 1 |
| | Facilities | 1 |
| | Maternity | 2 |

**Motivation to comply with IPC practices**

Why adopt IPC standards? "*What motivates me is knowledge and the need to protect clients and family, see patients get better. I experienced contamination myself, which disrupted my family for three weeks."* P005, P008, P009, P004

## FACILITATORS TO INFECTION PREVENTION AND CONTROL ADHERENCE AMONG HEALTHCARE WORKERS

**Resource and Infrastructure availability**

Enabling environment facilitates IPC guideline adherence. "*Most times, the hospital has personal protective gear ready; people just go get gloves or whatever, the infrastructure is really there. We have the sanitizers and everything*" (P008, P014, P001, P005).

**Leadership and Governance**

Leadership in IPC starts with the executive leadership of the hospital. "*The hospital has an IPC Officer in place, who guides and coordinates IPC activities*." (P002), "*IPC is present on the ground. We have a committee chaired by the Clinical Operations Manager. This ensures compliance from the doctors, who respect hierarchy. A focal person helps oversee IPC in every department*." (P004). Visibility of IPC is seen in daily hospital rounds and real-time feedback. "*I feel the presence of IPC leadership on the ground, and they really support the hospital and the staff*." (P006), "*sensitization isa done, job aids like steps of handwashing, isolation protocols etc.*" (P007, P006, P009). "*and also other super-specialized IPC people supporting the facility internally and also from the Ministry of Health and also support from unit in charges*." (P018, P020, P022, P015).

**System organization**

IPC Procedures and Protocols are readily available. "*IPC processes are standardized in the hospital, and guidelines are available in many areas. These standard procedures help staff to know what is expected of them*

*and encourage adherence to IPC practices*." (P003, P012 *"The IPC office responds quickly if they can fix something.*" (P019), "*What motivates us? One is that the hospital is willing to support us and provide what we need. The hospital is teaching us. We have an IPC person who spearheads this IPC protocol procedure. That makes it easy. Conversely, if we didn't have it, it would be much harder*." (P021).

**In-house Training and Capacity Building**

Continuous training and orientation of new staff. "*Routine updates and early guidance helped people grasp what they needed to do"* (P005). "*Learning materials, ongoing instruction, clear guidelines, and visual supports actually allow teams to follow best practices effectively*" (P018).

**Personal Motivation**

An intrinsic desire to follow infection control. "*The patient is the primary goal of care. You want to prevent them from getting any other preventable infection*" (P007), "*IPC… is the first defense for me as a health worker… and if you can prevent infection, you reduce the cost transferred to the patient*" (P018), "*When you love what you are doing, you take your work seriously… including infection prevention and control*" (P020). Another added, "*I wouldn't want anyone to pick any infection that they didn't come with… I am naturally empathetic*" (P015).

**Teamwork among Healthcare workers**

Improved infection control through co-operation. "*The other factor that makes it easier is the colleagues I am working with. Sometimes about 70% are cooperative, and when people are cooperative, it becomes easier to implement infection prevention and control because you are not working alone, you are working together and helping each other.*" (P020).

**BARRIERS TO INFECTION PREVENTION AND CONTROL ADHERENCE AMONG HEALTHCARE WORKERS**

**Resource and Supply Limitations**

Lack of resources affects compliance. "*People may know how to segregate, but if the hospital does not provide the rightful segregation papers, if sanitizer bottles are hung on walls, but not refilled, people will not sanitize, Though PPEs are there, they are not there all the time.***"** (P007, P006, P012, P016). *Some had gloves but did not have goggles*." (P001), "*Sometimes we don't have aprons or PPE available in sufficient numbers, so we improvise. That affects the standardization of IPC practice.*" (P002).

**Knowledge and Skills Gaps**

A lack of understanding of IPC can cause risky healthcare practices. "*There are gaps in knowledge among some staff, especially regarding cleaning and disinfection. For example, some people think that Jik removes debris, which is not its role… not everyone fully understands how disinfectants are supposed to be used.*" (P001). "*My knowledge of IPC is very basic.*" (P004).

**Staffing and Workload**

Bed occupancy and workload affect IPC compliance. "*With nonstop duties and overcrowded units, keeping up with each guideline seems out of reach during peak pressure, small oversights happen, even if unintentionally*" (P002, 003, 006). High turnover complicates orientation on IPC standards. "*With high patient numbers, and staff turnover makes it hard to implement IPC fully*" (P005), and "*The workload prevents achieving all five moments of hand hygiene*" (P007, P008, P017).

**Behavioral Factors Among Staff**

Resistance is based on psychology, despite resources, we fail to apply prevention of infection. *"Even when IPC materials are available, if someone is not willing or has a poor attitude, they will still not do what is required"* (P002, 004). Compliance often declines over time, *"At first, people were entering with N95 masks in TB room, but after three days, they start using disposable masks, and eventually without masks. People break isolation before it is even unannounced"* (P006). Still, resistance remains even after repeated cautions. *"People don't take things seriously. They don't see the benefit. We have posters everywhere, but you still get someone not washing hands"* (P009). *" I think for me, the challenge is a mindset challenge and behavior change and not looking at IPC as the role of IPC Officer, but not looking at it as collective effort. Because it's everybody's responsibility"* (P015).

**Equipment-Related Risks**

Participants worried about machines/equipment moved between units without proper cleaning. *"When tools move between sections - say, from ICU to another floor - the chance of spreading infections grows if cleaning*

*steps are skipped or uneven, exchange of equipment.*" (P003, P008).

**Financial Constraints**

IPC is overlooked in budget decisions favoring areas with clear financial returns. "*IPC is generally an indirect cost that does not generate direct revenue, so sometimes other members may not appreciate it as much. Because it is something indirect, somebody may not understand how it works and how it actually protects them.*" (P018).

**System Organization Barriers and Failures**

Control of caretakers was emphasized. "*Relatives enter without caution, touching infants, embracing sick individuals with little attention paid to handwashing or glove use*." (P011). Caretakers should be controlled during isolation. "*What we call an isolation room is just still within the wards…and we do not have a limit of caretakers that come into the rooms*." (P011). It was noted there is no clear accountability for people's actions. "*We don't hold people accountable. We don't. So, people like, who are you? Because the hospital system has created that culture. When you come here, you do the right thing, and it is not negotiable. It will work out. These people can learn, but no one holds them accountable, so they just normalize doing what they want*." (P021).

**Poor Safety Culture**

Safety culture of people affected their IPC practice. "*People's response might be culture… some of them don't care.*" (P014). Even healthcare workers meant to set an example sometimes failed to follow safety rules. "*I was at A&E… I was telling someone to put on a glove. He said, 'No, I'm just putting on a plaster.*'" (P013). IPC seen as one team's role. "*It's not truly embedded… people still think it's IPC's role. When something happens, they say, ah, IPC, IPC…*" (P015).

## STRATEGIES TO IMPROVE INFECTION PREVENTION AND CONTROL ADHERENCE AMONG HEALTHCARE WORKERS

**Continuous Education and Training for IPC Adherence**

Continuous training and capacity building affect how people implement IPC.

"*It would be important to have constant refresher training for staff. Periodically, maybe twice a year, to assess knowledge and ensure people are up to date with IPC practices. Many people don't know the full guidelines, even those who are considered forerunners of prevention*." (P004, P001, P007, P005). Training programmes should also be specific role-based instead of standard all over the place. "*Sometimes what I understand or what I require may not be what the housekeeper requires, so we need to have training that is specific to a particular group of people, with packaged information that will meet their understanding and their practices*." (P022).

**Decentralized IPC Leadership**

It was noted that IPC leadership should be brought closer to people at department level. *"The hospital has an IPC manager in place; However, I think it would be better if each department also had its own IPC focal person to help with supervision and follow-up*." (P002, P006)

**Monitoring and Evaluation of IPC Practices**

Close monitoring also reinforces good infection control practices and identifies problems in their early stages. *"There is a need for continuous supervision of IPC practices. When supervision is done regularly, people become more careful and consistent in what they are doing.*" (P003).

**IPC Financing and Resource Commitment**

Consistent funding allows for the continuation of infection control, preventing a crisis and ensuring availability of needed supplies and equipment. "*I think we need to intentionally, as management, commit resources for IPC, meaning if there's an IPC budget, it is intentionally funded and it doesn't come as an emergency.*" (P015).

**Strengthening Supervision and Accountability**

Clear oversight and responsibility improve IPC. "*Doctors are rarely held accountable for relapses in IPC. Most responsibilities fall on nurses. There should be a system that ensures all staff, including doctors, are supervised and accountable for IPC adherence*." (P004, P005) Real-time feedback improves compliance. "*The most important thing is supervision… not just coming to the station." "Go down to the patient, see what is really being done, ask what is being done wrong and correct it there*." (P017).

**Caretaker Education, Patient Involvement, and Community IPC Awareness**

Everyone should be involved in IPC program of the hospital. "*We need to extend the sensitization not just to health workers but also to caretakers and patients themselves*." (P008), "*They need to reduce or put a strict number of caretakers to visit the patient and what they really should have to protect themselves*." (P011).

**Building a Strong IPC Culture Among Staff**

The focus should be on building the IPC Culture. "*Build a culture of IPC among our people so they don't see it as IPC's role, but it's… everybody feels responsible and it is embedded in their day-to-day work*." (P015, P021, P022).

**Multimodal IPC Strategies and Accountability**

There is a need for continuous improvement and using diversity in strategies for IPC. "*If the hospital continues to intensify the use of the multimodal strategy, as advised by the Ministry of Health and WHO, I believe IPC will continuously improve to the level that we want it to in all aspects.*" (P018).

**Adequate Staffing and Workload Reduction**

Low staffing levels undermine the effectiveness of infection control practices. "*If you increase the number to six to eight, they're going to skip these things… People get overwhelmed or overworked*." (P015).

**Senior Management Commitment and Role Modeling**

Commitment starts at the top, yet fades if ignored by those in charge. "*What is the attitude of the senior management or the board or the human resource to ensure that IPC is done in accordance with the recommendation?*" (P018).

**Promoting Teamwork and Shared Responsibility**

A team-based approach was highlighted as essential for improving IPC adherence. "*For us to improve, we have to cooperate with one another. We should know that we are working as a team and not take things on an individual basis. This cleaning is not for one person; it is for all of us, and we should all work together towards the same goal*." (P020).

**Resource Allocation, Availability, and Functional Infrastructure**

Effective IPC practices depend heavily on reliable access to essential resources and functional equipment. "*We shouldn't run out of very necessary items like disinfectants, sanitizers, and handwashing facilities. This allows IPC policies to be implemented effectively*." (P005, P010, P006), *"I think there are some things that should be non-negotiable. Whether they are doing budget cuts or not. Things like bin liners, toilet paper*." (P019).

**Behavioral and Attitudinal Change Interventions**

Adherence was described as strongly influenced by motivation, attitudes, and personal responsibility. "*Human behavior is a major factor. Even with all resources, if staff are not conscious or motivated, adherence is low. There should be interventions that target attitudes and motivation for IPC compliance*." (P004, P005, P013). "*People should understand that we are all working for the same goal. When someone does something wrong, and you correct them, they should not take it personally. They should accept it and do the right thing because infection prevention and control is not about proving someone wrong; it is about keeping the environment clean and safe for everyone*." (P020).

## Discussion

### HEALTHCARE WORKERS' PERCEPTIONS AND EXPERIENCES OF IPC

Healthcare workers demonstrated a broad understanding of IPC principles, particularly hand hygiene, environmental cleaning, waste segregation and patient isolation. However, deep knowledge varied from person to person based on their professional roles, training and experience. The study from Mulago National Referral, Uganda by Sethi et al. (2012) found that healthcare workers generally understood the importance of hand hygiene, although gaps existed in understanding its role in preventing patient-to-patient transmission. Similarly, Kalule et al. (2024), in a qualitative study among Ugandan healthcare workers, found that recognizing the importance of IPC was an important step in implementation, but healthcare workers continued to encounter individual and organizational challenges in translating guidance into practice. These findings suggest that IPC knowledge requires continuous reinforcement and practical application to support consistent adherence.

Participants perceived IPC as essential for protecting both patients and healthcare workers and regarded adherence as a shared professional responsibility. Motivation was influenced by patient safety, self-protection and fear of infection. Limenyande et al.

(2024), found that fear of infection, social pressure, moral responsibility, and provision of IPC equipment facilitated compliance among healthcare workers in Kampala. Similarly, Ssekamatte et al. (2024), identified fear of infection, positive attitudes, knowledge of IPC guidelines, and recognition or rewards as facilitators of hand hygiene among healthcare providers in the Kampala Metropolitan Area. The consistency across these studies suggests that perceived personal and patient benefits of IPC can strengthen motivation to adhere to recommended practices.

## FACILITATORS TO INFECTION PREVENTION AND CONTROL ADHERENCE AMONG HEALTHCARE WORKERS

The findings demonstrate that IPC adherence was facilitated by interacting structural, organizational, and individual factors. Participants identified availability of PPE, hand hygiene supplies, cleaning materials, supportive leadership, clear IPC protocols, continuous training, personal motivation, well-organized IPC Systems, and teamwork as important facilitators. This supports evidence that IPC adherence depends not only on healthcare workers' knowledge but also on the availability of resources and a supportive organizational environment (Houghton et al., 2020; Alhumaid et al., 2021). Another study from Kampala noted that the availability of supplies and functional hand hygiene infrastructure, together with active IPC leadership and committees, facilitated hand hygiene practice among healthcare workers (Ssekamatte et al., 2024).

Participants also identified leadership support, continuous training, personal motivation, and teamwork as important facilitators. Supportive leadership and ongoing training can strengthen competence, accountability, and confidence in IPC practice, while personal commitment to patient and staff safety motivates adherence (Alhumaid et al., 2021; Houghton et al., 2020). Teamwork and a positive safety culture further reinforce shared responsibility for IPC. Overall, these findings suggest that sustainable IPC adherence requires a multimodal approach combining adequate resources, effective leadership, clear systems, continuous capacity building, and a supportive safety culture rather than focusing on individual healthcare workers alone (Storr et al., 2021).

## BARRIERS TO INFECTION PREVENTION AND CONTROL ADHERENCE

The study identified inadequate resources, knowledge and skills gaps, heavy workload, behavioral factors, and infrastructure limitations as major barriers to IPC adherence. Participants reported shortages of PPE, disinfectants, soap, and other hygiene supplies, which made it difficult to implement recommended practices. Findings from a qualitative study conducted in Kampala show that inadequate PPE, limited hand hygiene supplies, and inaccessible handwashing facilities were reported as important barriers to IPC compliance (Limenyande et al., 2024). Similar findings have been reported among healthcare workers in Ethiopia, where inadequate working environments contributed to the gap between knowledge and actual IPC practice (Wubneh et al., 2024). Heavy workload and staffing constraints further undermined adherence. Participants reported that high patient volumes and inadequate staffing encouraged shortcuts and missed hand hygiene opportunities. This finding is strongly supported by studies in Kampala, where healthcare workers reported that workload and staff shortages made it difficult to maintain hand hygiene and other IPC practices (Limenyande et al., 2024; Ssekamatte et al., 2024).

A knowledge-practice gap was also evident, particularly in PPE use, waste segregation, disinfectant use, and hand hygiene. Importantly, having knowledge or PPE did not always translate into correct practice. Evidence from Kampala found that healthcare workers who had not received adequate IPC training had difficulties implementing recommended measures, while a recent study at Kiruddu Referral Hospital also identified gaps in PPE, waste management, and other IPC knowledge domains (Limenyande et al., 2024; Nsubuga et al., 2025). Overall, these findings suggest that poor IPC adherence is not solely an individual knowledge problem but reflects health-system and workplace constraints. Improving adherence therefore requires reliable supplies, accessible infrastructure, regular practical training, adequate staffing, supportive supervision, and stronger accountability mechanisms.

## STRATEGIES TO IMPROVE INFECTION PREVENTION AND CONTROL ADHERENCE

Participants proposed several strategies for improving IPC adherence, with emphasis on continuous training, active supervision, Immediate feedback, decentralized IPC responsibilities rather than solely on periodic

monitoring, adequate resources, leadership, behavioral change, and multimodal interventions. Continuous, job-specific education and competency assessment were considered important, particularly in settings with staff turnover. This is supported by evidence showing that regular IPC training is associated with improved knowledge and practice among healthcare workers (Alhumaid et al., 2021; Wubneh et al., 2024). Another study from Kampala shows that supportive leadership, feedback, recognition, and active IPC structures can facilitate adherence to hand hygiene practices (Ssekamatte et al., 2024). Similar findings have been reported in Ugandan healthcare facilities, where resource shortages, workload, and infrastructure limitations affected IPC implementation (Limenyande et al., 2024; Nsubuga et al., 2025).

The findings also highlight the importance of developing a strong IPC culture in which responsibility is shared across all healthcare workers, patients, and caregivers. This supports the WHO multimodal approach, which combines system change, education, monitoring and feedback, communication, and institutional safety climate rather than relying on a single intervention (World Health Organization, 2009). Generally, the findings suggest that sustainable improvement in IPC adherence requires a multimodal strategy integrating continuous training, active supervision, adequate resources, strong leadership, accountability, adequate staffing, and patient and caregiver engagement.

## Conclusion

The study identified how individual, organizational and systemic factors influenced adherence to IPC. The importance of IPC was acknowledged by healthcare workers, but adherence was facilitated by adequate resources, training, supportive leadership and teamwork, whereas staffing shortages, workload, resource limitations, behavioral factors and weak accountability created barriers. Sustainable improvement requires a multimodal approach, combining continuous training, active supervision, adequate resources, strong leadership, accountability and an organizational culture in which IPC is seen as everyone's responsibility.

## Limitations of the Study

A limitation of this study is that it was performed in one private hospital and transferability to other healthcare settings may be limited. As a qualitative study, findings are representative of participants' reported perceptions and experiences and do not provide quantitative estimates of IPC adherence. The researcher's professional position in the healthcare setting may also have been a source for social desirability or interviewer bias.

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## Conflict of Interest

The authors confirm no financial or personal conflicts of interest. Despite one author's role at the study site, objectivity in data collection and analysis was prioritized. Findings reflect true data.

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