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Knowledge of health workers regarding infection control at Kajjansi Health Centre IV. A cross-sectional study.

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Abstract

Background:

Knowledge of infection control among health workers is essential for preventing healthcare-associated infections and ensuring patient safety. Therefore, this study aims to assess the knowledge of health workers regarding infection control at Kajjansi Health Centre IV.

Methodology:

A cross-sectional study design was used, where participants were given questionnaires to fill in quantitatively, the data were coded, and analysed with the aid of the Statistical Package for the Social Sciences (SPSS) version 25, and presented using tables, Bar charts, and pie charts.

Results:

A total of 55 healthcare workers were interviewed, 61.8% (34/55) were females. The mean age of the participants was 25.3, with the majority, 54.5% (30/55), in the age group of 26 to 30 years. 50.9% (28/55) of the participants were diploma holders, and 63.6% (35/55) of the participants were nurses. 85.5% (45/55) of the participants were found to be knowledgeable about infection control. 92.7 % (51/55) knew that disinfection and antiseptics prevent healthcare-acquired infections. 87.3% (87/55) of the healthcare workers believed that every piece of equipment needs decontamination before sterilization, with more than half of the respondents, 81.8% (45/55), knowing about infection control, while 72.3% (40/55) knew the recommended guidelines about hand hygiene.

Conclusion:

The knowledge of infection control was good, although gaps remain in formal training, especially on hand hygiene and standard precautions.

Recommendation:

There is a need for regular in-service training and continuous professional development on infection control.

Keywords: *Infection control, healthcare workers, knowledge on hand hygiene, Kajjansi Health Centre IV.*
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Background of the study

Infection control remains a cornerstone of safe healthcare delivery, as emphasized by the World Health Organization, which defines it as a set of practices aimed at preventing the transmission of infectious agents within healthcare settings. Adequate knowledge among healthcare workers (HCWs) is fundamental to the effective implementation of infection prevention and control (IPC) measures, including standard precautions, hand hygiene, and the use of personal protective equipment. Without sufficient knowledge, even well-established guidelines may not be properly followed, increasing the risk of healthcare-associated infections (HAIs).

Globally, several studies have assessed HCWs' knowledge of infection control with varying outcomes. For instance, a study conducted in Palestine by Imad (2015) found that approximately 53.9% of participants demonstrated a fair level of knowledge (>80%), indicating that while awareness exists, there are still notable gaps. Similarly, research in Ethiopia by Kelemua (2014) reported a relatively high

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overall knowledge score of 84.5% among respondents, suggesting that knowledge levels can be adequate in certain contexts, particularly where training and resources are available. However, these findings also highlight inconsistencies in knowledge distribution, often influenced by factors such as professional qualification, gender, and access to continuous education.

Further evidence from Ethiopia by Yakob (2015) revealed that although all respondents were aware that contaminated sharps could transmit infections, gaps persisted in the comprehensive understanding and application of infection control principles. This suggests that basic awareness does not always translate into in-depth knowledge required for effective practice. Additionally, Bouallègue (2013) emphasized that infection control measures, though often simple and low-cost, require not only awareness but also a solid knowledge base to ensure proper implementation.

In the Ugandan context, studies have also explored HCWs' knowledge of infection control. Research conducted at Mulago Hospital in Kampala by Katamba (2012) indicated that health workers generally had good knowledge of infection control practices. However, the study also pointed out that knowledge was sometimes oriented more toward self-protection rather than patient safety, highlighting a critical gap in the understanding of comprehensive infection prevention. Similarly, a cross-sectional study in Arua District by Peter (2015) found that only 51% of respondents were aware of at least six out of eight major infection control measures, suggesting moderate knowledge levels and the need for further education and training.

Despite these insights, there remains limited context-specific data on the level of knowledge among health workers in lower-level health facilities such as Kajjansi Health Centre IV. Understanding the knowledge levels of HCWs in such settings is essential for identifying gaps, informing targeted interventions, and ultimately improving infection prevention practices. Therefore, this study seeks to assess the knowledge of health workers regarding infection control at Kajjansi Health Centre IV.

Methodology

Study design

A cross-sectional study design was used, where health workers were interviewed. This design was chosen because it is relatively easy and economical to conduct.

Study area

The study was conducted at Kajjansi Health Centre IV in Wakiso district. The centre has an Out-Patient Department, In-patient wards, a laboratory, maternity, and pharmacy. The laboratory is well equipped to handle blood, urine, and stool samples, and has a hematology, biochemistry, and microbiology section. This site was chosen because it's a government facility, hence it has a large catchment area and is easily accessible to the researcher.

Study population

All health care workers employed at Kajjansi Health Centre IV were eligible for the study once they consented. This population was chosen because they are in direct contact with the patients and are also exposed to biohazard materials.

Sampling techniques

A purposive sampling technique was used in this study, where a list of the names of all the healthcare workers was generated from the hospital's official records and contacted on first come first serve basis until the required sample size. This was chosen because it gave a representative view of the population, was less time-consuming, and economical to apply.

Sample size determination

To calculate the minimum sample size, Slovin's formula was used

Where;

N = Population size e = Margin of error n = sample size

$$n = \frac{N}{1 + Ne^2}$$

In this study, a 99% confidence interval was used.

This gives (1-0.99=0.01) as the margin of error

$$n = \frac{60}{1 + (100\ (0.01)2)}$$

$$= 59$$

In this study, a sample size of 59 health care workers was needed

Selection criteria

Inclusion Criteria

All healthcare workers in direct contact with patients who had consented were enrolled in the study.

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Exclusion Criteria
All health workers handling emergency cases during the time of the study were excluded, and also those who were on duty were excluded from the study.

Study Variables
Independent Variables
In this study, the independent variables were various socio-demographic characteristics and institutional factors.

Dependent Variable
In this study, the dependent variable was the knowledge of healthcare workers towards infection control.

Piloting the study
To establish the validity and reliability of the study, the researcher sought the opinion of the supervisor and also distributed 5 questionnaires randomly to 5volunteer staff of Kajjansi Health Centre IV before applying the research tool so that any items missing in the questionnaire were added and those unsuitable were removed.

Data collection tools
In this study, a questionnaire and interview schedule were used. The questionnaire consisted of open and closed questions and was used to collect qualitative and quantitative data, while the interview was conducted one-on-one with prepared schedules to encourage the respondent to give an in-depth and heartfelt response without fear of revealing information.

Data collection procedures
Informed consent was obtained from the participants who met the inclusion criteria of the study. Those who agreed to participate in the study were enrolled after an explanation about the study, the risks and benefits of the study, confidentiality, and their freedom to decline to participate, and after signing an informed consent form. After being enrolled, the participants were interviewed using a structured questionnaire on a face-to-face basis and given unique numbers as identifiers to avoid repeat interviews with the same participant in the subsequent visits. A yellow sticker with the study number was used for unique identification of the participant after the interview, and the sticker was placed inside the top cover of the file. Also, a daily log of the out-patient number, name, and study number assigned to each participant was kept to counter-check when doing subsequent visits.

Participants' knowledge was assessed by 15 questions as follows: each question had a group of answer points, one point was awarded for each correct answer; incorrect or I don't know " answers took zero. Correct responses were summed up to get a total knowledge score for each participant.

The total score for all questions reached 15. The knowledge scores were classified into Poor knowledge (≤50%), Fair knowledge (51- 80%), and Good knowledge (> 80) considered good knowledge.

Data presentation and analysis
The data was analysed with the aid of the Statistical Package for the Social Sciences (SPSS) version 25 and presented using tables, Bar charts, and pie charts.

Quality control of the study
To ensure high-quality data, the data collected was checked for consistency immediately, where any missing or unclear responses to the question were corrected by requesting the participant for additional time to clarify the responses to the question before the study participant left the site.

Ethical consideration
Before starting the study, a letter of introduction and a copy of the research proposal were presented to the Kajjansi Health Centre IV administrator for approval. Also, verbal consent was obtained from the participants before interviewing and after explaining to them about the study, and they had the freedom to participate or not. They had the right to withdraw from the study at any time if they wished, and the investigator respected their decisions without compromising their service delivery at the hospital. Information obtained from the participant was handled with confidentiality by using study numbers and initials.

Results
Socio-demographic characteristics of the study participants
A total of 55 healthcare workers were interviewed, yielding a response rate of 91%, and the majority, 61.8% (34/55), were females. The mean age of the participants was 25.3, with the majority, 54.5% (30/55), in the age group of 26 to 30 years. A great proportion, 50.9% (28/55) of the

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participants were diploma holders, and 63.6% (35/55) of the participants were nurses.

Table 1: Socio-demographic characteristics of participants at Kajjansi Health Centre IV (n=55)

Variables		Frequency	Percentage
Age (years)	21 – 25	20	36.4
	26 – 30	30	54.5
	Above 31	5	9.1
Gender	Male	21	38.2
	Females	34	61.8
Marital status	Single	25	45.5
	Married	30	54.5
Education status	BSc and above	1	1.8
	Diploma	28	50.9
	Certificate	26	47.3
Work experience	<5 years	20	36.4
	5-10 years	25	45.5
	>10 years	10	18.2
Cadre	Physician	1	1.8
	Nurse	35	63.6
	Midwife	10	18.2
	Lab technicians	9	16.4
Had taken training in infection control	Yes	45	81.8
	No	10	18.2
Infection control guidelines available	Yes	50	90.9
	No	5	9.1

Knowledge of participants about infection control

Study findings show that only 85.5% (45/55) of the participants were found to be knowledgeable about infection control. Among the study participants, the majority, 92.7 % (51/55), knew that disinfection and antiseptics prevent healthcare-acquired infections. 87.3% (87/55) of the healthcare workers believed that every piece of equipment needs decontamination before sterilization, with more than half of the respondents, 81.8% (45/55), knowing about infection control, while 72.3% (40/55) knew the recommended guidelines about hand hygiene.

Table 2: Knowledge of infection control by the study participants (n=55)

Variables	Level of knowledge	Frequency	Percentage
Disinfection prevents healthcare-acquired infections	Yes	51	92.7
	No	4	7.3
Antiseptics prevent healthcare infections	Yes	51	92.7

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	No	4	7.3
Do you know about infection control	Yes	45	81.8
	No	10	18.2
Did you receive training in hand hygiene and standard precautions?	Yes	15	27.3
	No	40	72.3
Are you aware of the recommended guide lines for hand hygiene?	Yes	40	72.3
	No	15	27.3

The findings in Table 2 indicate that the majority of respondents demonstrated a high level of knowledge regarding key aspects of infection control. Most health workers (92.7%) correctly reported that both disinfection and antiseptics help prevent healthcare-associated infections, while only a small proportion (7.3%) lacked this knowledge. This suggests that fundamental concepts of infection prevention are well understood among the respondents. 81.8% indicated that they were aware of infection control in general, whereas 18.2% reported no knowledge. This reflects a generally good level of awareness, although the presence of a notable minority without such knowledge highlights an existing gap that needs to be addressed. However, despite the high awareness levels, the results reveal a significant deficiency in formal training. Only 27.3% of respondents reported having received training in hand hygiene and standard precautions, while a large majority (72.3%) had not received such training. This suggests that much of the knowledge possessed by health workers may have been acquired informally rather than through structured programs. In contrast, awareness of recommended guidelines for hand hygiene was relatively higher, with 72.3% of respondents indicating familiarity, compared to 27.3% who were not aware. This implies that while many health workers are aware of guidelines, the lack of formal training could limit their ability to effectively implement them in practice.

Discussion

The study findings indicate that a majority of health workers (85.5%) were knowledgeable about infection control, demonstrating generally good awareness of key infection prevention principles. 92.7% correctly identified that both disinfection and antiseptics play a critical role in preventing healthcare-associated infections. This suggests that fundamental concepts of infection control are well understood among most participants. 81.8% of the respondents reported that they were aware of infection control in general, while 72.3% indicated familiarity with recommended hand hygiene guidelines. These results collectively point to a relatively strong baseline knowledge among healthcare workers regarding infection prevention.

However, despite this encouraging level of knowledge, the study revealed a significant gap in formal training. Only 27.3% of respondents reported having received training in hand hygiene and standard precautions, while the majority (72.3%) had not undergone any formal instruction. This discrepancy suggests that much of the knowledge possessed by healthcare workers may have been acquired informally through experience or observation rather than through structured training programs. Such informal learning may not be sufficient to ensure comprehensive understanding or correct application of infection control measures in clinical practice.

The findings of this study are consistent with previous research conducted in similar settings. For example, Imad (2015) reported that healthcare workers in Palestine had moderate to good knowledge of infection control, while Kelemua (2014) found an overall knowledge score of 84.5% among healthcare workers in Ethiopia. These studies support the observation that healthcare workers often possess basic knowledge of infection prevention. However, like the current study, other researchers have also identified gaps in training. Yakob (2015) noted that although a proportion of healthcare workers had participated in training programs, coverage was still inadequate. Similarly, Peter (2015) reported limited awareness of key infection control measures among some healthcare workers in Uganda, highlighting persistent knowledge gaps in certain contexts.

Conclusion

The study revealed that most health workers at Kajjansi Health Centre IV had good knowledge of infection control, with 85.5% being knowledgeable and the majority correctly identifying key preventive measures such as disinfection, antiseptics use, and decontamination of equipment. However, gaps still exist in formal training on infection

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prevention, particularly in hand hygiene and standard precautions, which may affect consistent application of knowledge in practice.

Recommendations

There is a need for regular in-service training and continuous professional development programs focusing on infection control, especially hand hygiene and standard precautions. The health facility management should also strengthen supervision and ensure the availability of updated infection control guidelines to reinforce correct practices among health workers.

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List of Abbreviations

HCAIS:	Health Care-Associated Infections
HCWs:	Health Care Workers
HIV:	Human immunodeficiency virus
NI:	Nosocomial Infection
PEP:	Post-Exposure Prophylaxis
TB:	Tuberculosis
WHO:	World Health Organization

Data availability

The data is available upon request.

Informed consent

Written informed consent was obtained from all participants before their inclusion in the study. Participants were informed about the purpose of the study, procedures involved, potential risks and benefits, and their right to withdraw at any time without penalty.

Source of funding

The study did not receive any external funding.

Conflict of interest

The author did not declare any conflict of interest.

Author contributions

Duncan Edward Kasibante was the principal investigator Frank Ssegujja, Ssemuwemba Francisco, Jane Frank Nalubega, and Hasifa Nansereko supervised the research project

Author Biography

Duncan Edward Kasibante holds a Diploma in Medical Laboratory Technology from Mildmay Health Institute.
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Ssemuwemba Francisco is the Dean of the School of Allied Health, Mildmay Institute of Health Sciences.
Hasifa Nansereko is the Chairperson, Mildmay School of Allied Nursing and Midwifery – IRC.

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