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Assessment of Knowledge and Awareness Regarding Infection Control Practices Among Allied Health Professionals

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A B S T R A C T :

Background: Infection prevention is crucial in healthcare settings, particularly for allied health professionals who often provide direct patient care. Ensuring that these professionals have proper knowledge and awareness is critical for reducing the incidence of healthcare-associated illnesses.

Objective: This study aimed to assess the level of knowledge and awareness regarding infection control practices among allied health professionals across various healthcare institutions.

Methods: A cross-sectional study was conducted among 207 allied health professionals, including medical laboratory technologists, radiologic technologists, and physiotherapists. Data were collected using a structured questionnaire that included demographic information, knowledge-based questions, and awareness-based items related to infection control. The responses were analysed using descriptive statistics.

Results: Participants demonstrated a high level of knowledge. The majority of respondents (90.3%) correctly identified the recommended handwashing duration, whereas 91.8% were familiar with regularly used clinical disinfectants. Awareness levels were also positive, with 97.6% of participants acknowledging the significance of infection control and 81.2% having undergone formal training. The majority constantly used PPE and practiced good hand hygiene.

Conclusion: The study concludes that allied health professionals have extensive knowledge and awareness of infection control practices. These findings show the efficacy of institutional training programs and emphasise the necessity for ongoing education to maintain high infection prevention compliance rates.

Keywords: Infection Control, WHO, IPC, Allied Health,

Introduction

A key component of patient safety and high-quality healthcare delivery, infection control helps reduce the risk of healthcare-associated infections (HAIs), which are a major cause of morbidity, mortality, and medical expenses worldwide (WHO, 2016). These infections can impair therapeutic results and put a significant strain on healthcare systems since they are frequently contracted while undergoing treatment for other illnesses in a medical facility (CDC, 2020). Effective infection prevention and control (IPC) methods have become crucial in all healthcare settings, including hospitals, diagnostic centers, rehabilitation centers, and community health institutions, in response to this increasing challenge (WHO, 2016), (Loveday et al., 2014).

Allied health workers, including medical laboratory technologists, radiologic technologists, physiotherapists, occupational therapists, and anaesthesia technicians, make up a significant proportion of the healthcare workforce. They actively participate in diagnostic, therapeutic, and support services that include direct or indirect contact with patients, biological material, or contaminated settings. Because of their frequent and frequently lengthy involvement with patients and clinical materials, they play a vital role in the transmission chain of infectious pathogens (Westbury et al., 2018). Their role in adhering to standard precautions, including hand hygiene, personal protective equipment (PPE) usage, waste disposal, and equipment sterilization, is indispensable in reducing the risk of infection spread within healthcare facilities (Loveday et al., 2014), (Pittet et al., 2009).

Despite the existence of established guidelines and systematic training programs, gaps in infection control measures remain a serious concern in hospital settings (WHO, 2016). These breaches can considerably raise the risk of healthcare-associated infections (HAIs), which endanger patient safety and result in longer hospital stays, more medical interventions, and higher healthcare expenses (CDC, 2020). One of the key causes of these breaches is a lack of education and awareness among healthcare personnel, particularly allied health professionals. This knowledge gap is frequently associated with insufficient initial training, a lack of emphasis on infection prevention in academic curriculum, and limited access to continuing education programs (Westbury et al., 2018).

Furthermore, poor compliance with established protocols—such as hand hygiene, personal protection equipment (PPE), and equipment sterilization—is common, even when instructions are available and accessible. Compliance is affected not just by knowledge levels, but also by attitudes, workload, institutional culture, and the perceived value of IPC measures (Loveday et al., 2014). In many institutions, infection control training is more rigorously directed towards physicians and nursing staff, while allied health professionals—such as radiology technicians, physiotherapists, and laboratory personnel—may receive less comprehensive instruction despite their close and continuous contact with patients and potentially infectious materials (Westbury et al., 2018).

Their roles are critical in preventing infection from spreading in healthcare settings, and any failure or oversight in following basic IPC standards can have serious ramifications for patient safety. To guarantee a uniformly high standard of infection control across all healthcare disciplines, IPC education must be integrated as a core component of allied health curriculum and reinforced by frequent training, workshops, and competency evaluations (WHO, 2016), (CDC, 2020).

The purpose of this study is to assess allied health workers' current knowledge and awareness of infection control measures. By identifying gaps in understanding and practice, the findings can help to establish targeted educational interventions and legislative changes to increase infection prevention methods in the healthcare workforce.

Review of Literature

Infection prevention and control (IPC) is a critical component of healthcare delivery that aims to reduce the risk of healthcare-associated infections (HAI). The World Health Organisation (WHO, 2016) emphasises the importance of IPC in ensuring patient safety and reducing morbidity and death in healthcare settings. Allied health personnel, such as medical laboratory technicians, radiologic technologists, physiotherapists, and occupational therapists, play an important role in clinical practice and deal with patients frequently, so adhering to IPC standards is critical (Westbury et al., 2018).
Several studies have identified limitations in healthcare personnel' awareness and compliance with IPC guidelines. Loveday et al. (2014) reported inconsistent adherence to standard criteria, citing a lack of routine monitoring and education as primary contributors to non-compliance. Similarly, Ganczak et al. (2013) discovered that allied health personnel had poor knowledge of fundamental hand hygiene routines and the use of personal protective equipment (PPE).

Hand hygiene is the most effective measure for preventing HAIs. Pittet et al. (2009) demonstrated that hand cleanliness alone can lower infection rates by up to 50%, however adherence is frequently below required levels. Sax et al. (2007) developed the "My Five Moments for Hand Hygiene" strategy to close compliance gaps and encourage structured hand hygiene behaviour among healthcare workers.
Kermode et al. (2005) found considerable differences between knowledge and practice among paramedical staff in India. Many employees were aware of infection control procedures but did not consistently follow them. This gap has been linked to insufficient training, work pressure, and a lack of institutional enforcement (Haque et al., 2018).

Talaat et al. (2016) found that structured IPC training programs significantly improved knowledge retention and compliance among allied health practitioners. Similarly, Alhumaid et al. (2021) discovered that training and awareness sessions resulted in significant improvements in IPC procedures in Middle Eastern healthcare facilities. However, Sreedharan et al. (2020) found that a one-time intervention was insufficient; recurrent reinforcement and institutional support are required for long-term adherence.

Demographic and workplace characteristics influence IPC awareness. Nair et al. (2017) discovered that younger and recently trained professionals knew more about infection control than older personnel, indicating that revised curriculum and training have a good influence.
During the COVID-19 pandemic, the importance of consistent IPC knowledge across all healthcare cadres become even stronger. Zhou et al. (2020) found that a lack of consistent IPC training among allied health personnel posed a substantial barrier in limiting infection spread throughout the crisis.

Aim

To assess the level of knowledge and awareness regarding infection control practices among allied health professionals in healthcare settings.

Objectives

- to evaluate allied health practitioners' understanding of infection control procedures.
- to assess their knowledge of infection prevention strategies.
- to find knowledge and compliance gaps.

- To explore how demographic characteristics affect awareness and knowledge.

Materials and Methods

Study Design

A cross-sectional, descriptive study design was employed to assess the knowledge and awareness regarding infection control practices among allied health professionals.

Study Duration

The study was conducted in various healthcare institutions and paramedical training centers over a period of three months from January to March 2025.

Study Population

Allied health professionals, including medical laboratory technologists, radiologic technologists, physiotherapists, and other paramedical staff working in clinical settings or undergoing professional training, were included in the study.

Sample Size

Total 207 healthcare workers participated in this study,
Inclusion Criteria
Allied health professionals currently working in clinical settings or enrolled in final-year paramedical programs.
Willing to participate and provide informed consent.

Exclusion Criteria

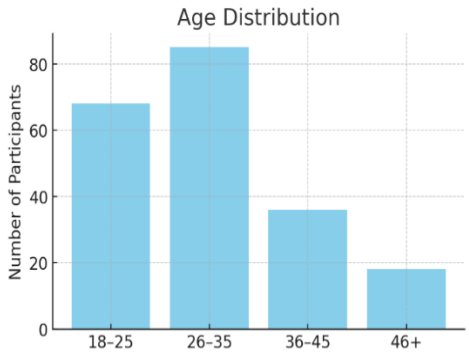
Professionals who were absent during data collection.
Those unwilling to participate.

Data Collection Tool

A structured and pre-validated questionnaire was used as the primary data collection tool. The questionnaire was distributed in Google Form and confidentiality was ensured throughout the process.

Results

The questionnaire included a total of 207 allied health practitioners. The majority of participants (41.1%) were between the ages of 26 and 35, with the 18 to 25 age group coming in second (32.9%) (Fig 1).



Females made up 56.5% of the sample, while males made up 43.5%. The majority of participants (55.6%) held a bachelor's degree, followed by master's degree holders (21.3%), diploma holders (19.3%), and others (3.8%) (Fig 2).

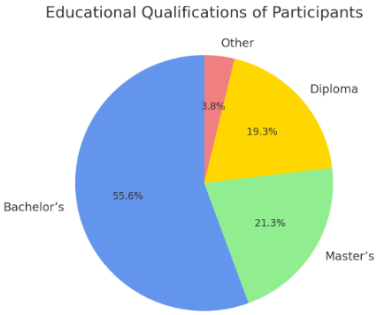


Fig 2: - Distribution of educational qualifications among participants

Medical laboratory technologists made up 34.8% of the participants, followed by physiotherapists (31.4%) and radiologic technologists (24.2%), with the remaining 9.7% representing various allied health areas.
In terms of professional experience, 37.2% had 1–3 years, 27.1% had 4–6 years, 19.3% had more than 6 years, and 16.4% had less than one year (Fig 3)

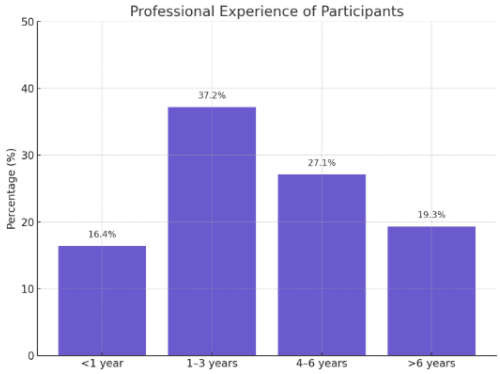


Fig. 3: - Distribution of participants based on their years of professional experience.

The majority of participants (61.4%) worked in hospitals, with the remainder working in clinics (20.3%), academic institutions (12.1%), or other healthcare settings (6.3%).

Table 1: - Knowledge of Recommended Handwashing Duration

Response	**Percentage**
Correct (20 seconds)	**90.3%**
Incorrect (5s, 10s, 1 min) total	**9.7%**

Notably, 90.3% correctly identified the minimum recommended duration for handwashing as 20 seconds (Table 1), and 86% recognised that using PPE for each patient and practicing hand hygiene before and after patient interaction are common precautions (Fig 3). Approximately 79.7% understood the proper procedure for removing personal protective equipment (PPE), and 91.8% correctly identified typical disinfectants used in clinical settings (Fig 4)

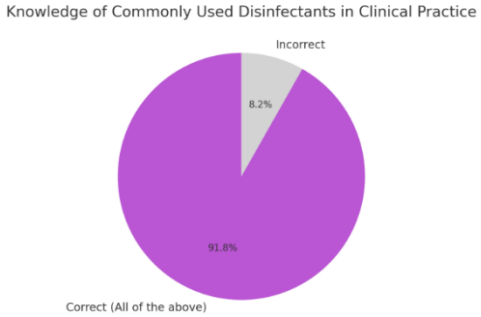


Fig 4: Responses to the question about commonly used disinfectants in clinical practice

Furthermore, 83.1% properly answered the question about biomedical waste segregation colour coding, and 85% correctly identified contact as the principal mode of transmission for the majority of healthcare-associated infections.

Approximately 84.1% said they were aware of their institution's infection control policies, and 81.2% had received formal training in infection control protocols. In terms of compliance behaviours, 70% stated that they always followed hand hygiene regulations, whereas 22.7% did so on occasion. The majority of people used personal protection equipment (PPE) when handling blood or body fluids, with 78.3% always wearing it and 16.4% doing so occasionally (Fig 5).

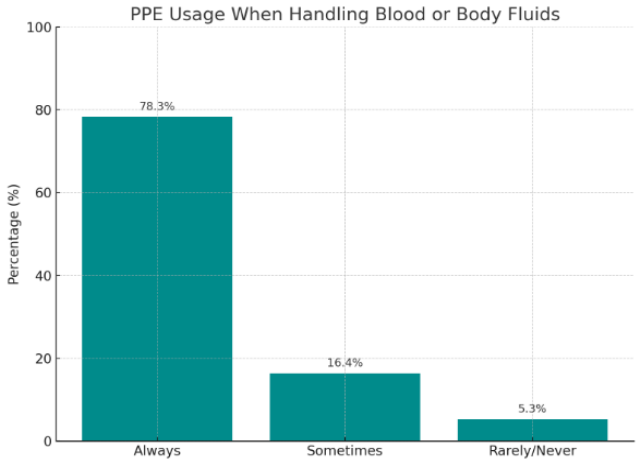


Fig 5: PPE usage when handling blood or body fluids

Furthermore, 46.4% of participants reported witnessing and reporting a breakdown in infection control procedures.

Conclusion

This study demonstrates a noteworthy degree of knowledge and awareness about infection control methods among allied health practitioners. The majority of participants displayed a thorough awareness of conventional precautions, good hand hygiene, PPE use, waste segregation, and the routes of transmission of healthcare-related illnesses. Furthermore, the data suggest that infection control is widely viewed as an important component of clinical practice, with the majority of professionals adhering to institutional rules and consistently following hygiene and safety protocols.

The high levels of formal training and reported awareness demonstrate the efficacy of contemporary educational initiatives and institutional practices. These findings are consistent with prior research highlighting the beneficial effects of structured infection control programs on healthcare worker behaviour. However, the prevalence of occasional breaches in adherence, as reported by some participants, highlights the importance of continued training, regular audits, and reinforcement measures for maintaining and improving compliance.

Overall, this study highlights the critical role that allied health professionals play in limiting the spread of diseases and ensuring patient safety. Continuous education and institutional assistance remain critical to maintaining good infection control standards across hospital settings.

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