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Knowledge and Practice of Health Care Providers Regarding Infection Control at Luqman International Hospital Swat

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ABSTRACT

Infection control is paramount in healthcare settings, preventing healthcare-associated infections and ensuring patient and staff safety. **Objectives:** To assess the knowledge and practice of healthcare providers regarding infection control. **Methods:** This cross-sectional study was conducted in Luqman International Hospital, swat. 100 staff included in the research are nurses, paramedics, medical technicians (MTs), and Lady Health Visitors (LHV). The researchers have used convenient sampling, considering the accessibility and availability of staff members during the study period. **Results:** The findings revealed that 40% have a low level of knowledge, 50% moderate, and 10% have an elevated level of knowledge regarding infection control. Regarding the level of practice on infection control, 35% had low practice, 53 had average, and 12% had an elevated level of practice regarding infection control. **Conclusions:** It was concluded that healthcare providers have considerable gaps in their understanding and use of infection control. 35% showed poor practice and 40% showed little knowledge. To increase the comprehension and use of infection control strategies, immediate interventions are required.

INTRODUCTION

Healthcare-associated infections (HAIs) are acquired in medical facilities but are not present when the patient is admitted. It is a serious problem that has an impact on healthcare delivery throughout the world [1]. Moreover, HAIs are a global problem that mostly impacts countries with lower and intermediate incomes [2]. Additionally, unfavourable healthcare outcomes result from this, such as increased hospital stays, higher expenses, and significant morbidity and mortality. Almost 90% of these illnesses occur in developing countries, where the virus is only occasionally transmitted. The high frequency of illnesses linked to healthcare was a result of the lack of a standardised infection prevention programme, which was caused by low funding, dirty facilities, and lax hygiene standards [3]. In addition, hospital-acquired infections are the primary issue related to healthcare services; globally, over 1.4 million people suffer from these illnesses, with developing nations having a 2-20-fold higher risk [4]. Poor hygiene habits and unhygienic conditions are vital contributors to the rising rate of infectious diseases in these developing nations [5]. In addition, Approximately 40% of all infections linked to healthcare are catheter-associated urinary tract infections (CAUTIs), which pose a severe threat to global healthcare [6]. Moreover, compliance with infection control protocols contributes to needle stick injuries among healthcare providers (HCPs) [7]. In the healthcare industry, infection control procedures have been a crucial concern. While the

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healthcare sector and public health have made significant strides, hospital staff members are also susceptible to illnesses that continue to arise among hospitalized patients. Hospitalization increases the risk of infection due to several factors, including weakened patient immunity, the growing range of invasive medical procedures and techniques that open up new infection pathways, and the spread of drug-resistant bacteria among crowded hospital populations. Microorganisms may spread more easily between patients due to inadequate infection control procedures [8]. One of the most important aspects of providing safe and excellent services at the facility level is infection prevention, erecting a barrier between the germs and the susceptible host. Therefore, infection prevention techniques like good hand hygiene can prevent the morbidity and death linked to HAIs [9-12]. Extended hospital stays, long-term disabilities, elevated microbial resistance, financial load, and fatalities are all part of the associated burden of disease associated with hospital-acquired infections [4]. It is well known that nosocomial infections are a significant cause of unfavourable healthcare outcomes and an issue compromising the standard of treatment. The literature has provided evidence that these infections significantly influence patient safety. The numerous detrimental effects include extended hospital stays, higher healthcare expenses, financial difficulties for patients and their families, and even fatalities [13]. Healthcare personnel are essential in stopping the spread of HAIs and maintaining infection control, essential to patient safety. Nonetheless, research indicates that healthcare practitioners frequently do not have sufficient knowledge, experience, or comprehension of infection control concepts, which can result in less-than-ideal practices in clinical settings. In addition, Pakistan is still a poor nation with a high rate of infectious diseases [14].

This study aims to assess the knowledge and practice of HCPs regarding infection control.

METHODS

This descriptive cross-sectional study was conducted at Luqman International Hospital, Swat KPK, Pakistan. 100 staff included in the research are nurses, paramedics, medical technicians (MTs), and Lady Health Visitors (LHVs). The researchers have used convenient sampling, considering the accessibility and availability of staff members during the study period of Aug 2024 to Nov 2024. With a 5% margin of error and a 95% confidence level, the sample size was determined via Open Epi 3.0 and the proportion of 31.6% of musculoskeletal disorders [5]. Adopted questionnaires were likely used to collect data [15]. These tools were designed to gather information about demographics, knowledge, and practice regarding infection control. The tool's total score was converted into a percentage. Inclusion criteria were staff members of Luqman International Hospital, Swat KPK. Except for staff members of Luqman International Hospital, all were excluded. Less than 50% of respondents were deemed to have a low knowledge of infection control, 50–70% moderate knowledge, and more than 70% high knowledge. Less than 50% of respondents were deemed to have low levels of infection control practice, 50–70% to have moderate levels, and more than 70% to have high levels of practice. Moreover, 10% of the population participated in a pilot study, and the resultant Cronbach's alpha score was 0.723 [14]. Trained researchers distributed questionnaires among the participants to collect the data. Confidentiality and anonymity were ensured to encourage honest responses. Quantitative data collected through structured questionnaires were analyzed by SPSS version 24.0. Descriptive statistics, like frequencies and percentages, were likely utilized to summarize the data. The goal, methods, and rights of the research were informed to the respondents. Informed consent was obtained from every respondent before their participation. Participants' identities and responses were kept confidential. Just the study team was entitled to the safely kept data.

RESULTS

Regarding gender distribution, most participants were male, accounting for 55% of the total sample, while female constituted 45%. In terms of age, the highest percentage of participants fell within the age group of 24-29 years, making up 50% of the total sample, followed by those above 30 years (30%), and the youngest age group of 18-23 years (20%). Regarding professions, nurses comprised the participants (55%), while others were paramedics, medical technicians, and Lady Health Visitors (Table 1).

Table 1: Demographic Information of the Participants (n=100)

Variables	Frequency (%)
Gender	
Male	55 (55%)
Female	45 (45%)
Age	
18-23	20 (20%)
24-29	50 (50%)
Above 30	30 (30%)
Profession	
Nurse	55 (55%)
Paramedics	15 (15%)
Medical Technicians	20 (20%)
Lady Health Visitors	15 (15%)

Results show the level of knowledge among HCPs regarding infection control. The findings revealed that 40% have low knowledge, 50% moderate and 10% have high

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knowledge regarding infection control (Figure 1).

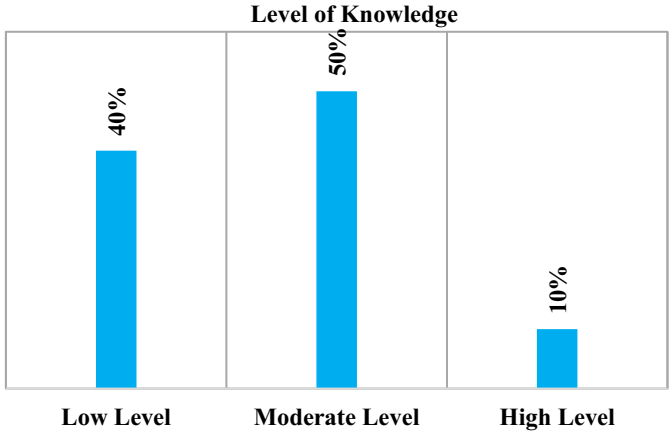

Figure 1: Level of Knowledge Regarding Infection Control

Findings show the level of practice regarding infection control regarding infection control. 35% had low practice, 53 had moderate, and 12% had a high level of practice regarding infection control (Figure 2).

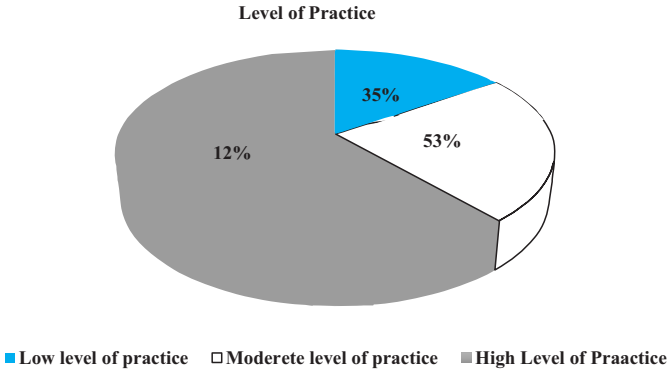

Figure 2: Level of Practice Regarding Infection Control

DISCUSSION

Infection control is paramount for patient safety in healthcare settings [16]. Understanding healthcare providers' knowledge and practice level directly effects the risk of healthcare-associated infections [17]. Evaluating their knowledge and practice interventions can be tailored to ensure a safer patient environment. The current findings show that 40% give a low level of knowledge regarding infection control. At the same time, another study found a slightly different result, that 57% had low awareness [18]. Similarly, another study found that most professionals lacked knowledge of fundamental infection control procedures [19]. In contrast, a study found that 84.7% had good knowledge regarding infection control [3]. Standardized training courses and certification processes are needed to guarantee uniformity in infection control expertise [20]. These must be the same in all healthcare facilities and updated frequently to consider fresh scientific discoveries and emerging infectious diseases. Regardless of their location or place of employment, standardization guarantees that all healthcare providers obtain the same quality of education. The current findings revealed that 50% had moderate knowledge regarding infection control. In contrast, another study found that 95.19% had good knowledge [5]. Another study also found that 75% had moderate knowledge [14]. In hospital settings, knowledgeable healthcare professionals could identify infectious disease outbreaks and put an end to them before they start. This lessens the possibility that patients will contract an infection while getting treatment [14]. The current findings revealed that 35% had low practice. In this regard, another study found frequent unsafe practices among study participants [21]. In contrast, another study found different results and showed that 67.6% had good practice [22]. In addition, another study found that 92% had good practice [23]. Improper infection control can lead to healthcare-associated infections (HAIs) in patients [24]. HAIs, when not effectively controlled, can lead to an increase in mortality rates [25]. Based on these findings, there should be standardized training modules and certification programs to ensure consistency in infection control knowledge. Furthermore, 53% had moderate practice regarding infection control. Similarly, another study found that 71.0% had inadequate practice regarding infection control measures [26]. Regular training programs are required to improve HCP proficiency in nosocomial infection control strategies.

CONCLUSIONS

It was concluded that the study findings highlight disparities in knowledge and practice regarding infection control among healthcare providers (HCPs). Regarding knowledge, 40% exhibited a low level of knowledge, 50% showed moderate understanding, and only 10% had a high level of knowledge. Regarding practice, 35% demonstrated a low level, 53% had a moderate level, and only 12% displayed high-quality practices. These results underscore the urgent need for targeted interventions to enhance knowledge and practical implementation of infection control measures among HCPs. Continuous education and regular assessments can significantly enhance the knowledge and practice of infection control, ensuring a safer healthcare environment for both patients and providers.

Authors Contribution

Conceptualization: YK
Methodology: YK, ZU, MB, TS[1], IUH, AK, TS[2], AA
Formal analysis: YK, AK, TS[2]
Writing review and editing: YK, SZ, WA

All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

All the authors declare no conflict of interest.

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