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Research Article

### PERSONAL PROTECTIVE EQUIPMENT KNOWLEDGE AND PRACTICES AMONG NURSES

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**Abstract:**

**Introduction:** Health care professionals and patients are at high risk to be exposed to potentially infected blood and body fluids that can lead to serious or even lethal infections. **Objectives:** The main objective of the study is to analyse the personal protective equipment knowledge and practices among nurses. **Material and methods:** This cross sectional study was conducted in The Children's Hospital and Institute of Child Health, Lahore during 2019 to 2020. The study population were nurses working in medical, surgical, maternity and pediatric wards, who had worked for a minimum period of six months. The study targeted nurses since they are amongst the healthcare providers who are in majority and are involved in a number of nursing activities which render them at risk of acquiring and transmitting HAIs. **Results:** A total of 185 nurses consented and the response rate, adjusted for non-delivery of questionnaires, was 92.5%. Regarding the correlation of PPE with the demographic characteristics of respondent nurses as shown in table, there is strong evidence of positive relationship [ $p$ -value of (0.024, 0.043, 0.001, 0.030)] between awareness of the respondents with PPE as an effective barrier for infection control and their gender, age, education and work experience respectively. **Conclusion:** It is concluded that nurses had excellent knowledge with and appropriate use of PPE as vital in safeguarding the HCWs and spread of infection.

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## INTRODUCTION:

Health care professionals and patients are at high risk to be exposed to potentially infected blood and body fluids that can lead to serious or even lethal infections [1]. Nurses in particular are repeatedly exposed to various infections during the course of carrying out their nursing activities [2]. This can be minimized by applying standard precautions as hand hygiene, use of personal protective equipment (e.g., gloves, gowns, masks), safe injection practices, safe handling of potentially contaminated equipment or surfaces in the patient environment, and respiratory hygiene/ cough etiquette which are designed to reduce the risk of acquiring occupational infection from both known and unexpected sources in the healthcare setting [3]. At 1996 the Center for Disease Control and Prevention (CDC), put forward guidelines, a revised version of a preventive concept against nosocomial infections. It advocates basic standard precautions for all healthcare delivery and additional specific measures to protect healthcare workers and patients from exposure to potentially harmful microorganisms.

Despite the adoption of these guidelines by healthcare worker in several countries, compliance with aseptic precautions is known to be “poor and lacking” [7-10]. Numerous studies shown that factors that contribute to non-compliance with standard precautions include lack of understanding and knowledge among health care workers on how to properly use protective barriers, lack of time, lack of resources, and lack of proper training. Other reported that better knowledge of universal precautions among health care workers was one of the predictors of better compliance.

Several studies have evaluated disinfection and sterilization procedures in hospitals, knowledge and practices of hospital staff, and compliance with universal precautions, but similar data are few if not available. Information on this topic is necessary to assess whether nurses are prepared to assume their responsibilities in preventing hospital infections. Studies on standard precautions are increasing over the world [3,6,7,10].

## Objectives

The main objective of the study is to analyse the personal protective equipment knowledge and practices among nurses.

## MATERIAL AND METHODS:

This cross-sectional study was conducted in The Children's Hospital and Institute of Child Health, Lahore during 2019 to 2020. The study population were nurses working in medical, surgical, maternity and pediatric wards, who had worked for a minimum period of six months. The study targeted nurses since they are amongst the healthcare providers who are in majority and are involved in a number of nursing activities which render them at risk of acquiring and transmitting HAIs. These activities include, wound management, initiation of intravenous infusions, administration of injections, management of labour, waste disposal and instrument processing. The medical wards admit patients with various disease conditions some of which are infectious. Patients in surgical wards are at increased risk of acquiring hospital acquired infections because of the nature of surgical interventions they go through most of which are invasive. Data was collected using self-administered semi structured questionnaire that composed of information about demographic and occupational characteristics of the respondents like: (gender, age, education and years of experience), as well as their knowledge and practices regarding compliance with usage of Personal Protective Equipment (PPE).

The data was collected and analysed using SPSS version 18.

## RESULTS:

A total of 185 nurses consented and the response rate, adjusted for non-delivery of questionnaires, was 92.5%. Regarding the correlation of PPE with the demographic characteristics of respondent nurses as shown in table, there is strong evidence of positive relationship [p – value of (0.024, 0.043, 0.001, 0.030)] between awareness of the respondents with PPE as an effective barrier for infection control and their gender, age, education and work experience respectively. Routine use of disposable gloves has been recommended for all patient contacts. Gloves ideally should be removed after seeing a patient and the hands washed thoroughly before re-gloving to see a new patient. Out of the total staff, 86 per cent claimed to wear fresh gloves before patient examination and procedures but only 57 percent of the staff actually did it during observations.

**Table 01: Awareness regarding PPE**

	Frequency	Percent
Excellent	141	76.2
Good	31	16.8
Ok	13	7.0
Total	185	100.0

**DISCUSSION:**

To our knowledge, this is the first research study conducted in hospital healthcare workers, investigating the issue of compliance with Standard Precautions to avoid occupational exposure to pathogens. Present study was carried out to assess the knowledge, practice and attitude of nursing staff related to infection control measures. Infection control is a key factor of practice for all healthcare professionals, not only for their health but also to reduce nosocomial infections and thus improve the patient safety. Regarding PPE, the mandatory use of PPE defined by health authorities in Saudi, our study showed the overall awareness amongst study respondents was 93%, this was not in accordance with many studies in Egypt. Routine use of disposable gloves has been recommended for all patient contacts. Gloves require hand hygiene before wearing and be removed after seeing a patient and the hands washed thoroughly before re-gloving to see a new patient. In our study nurses showed satisfactory knowledge 86% on this regard, this finding was in concordance with a study reported that compliance with hand hygiene performance is high but was not in concordance with three studies who reported that compliance with hand hygiene performance is low.

**CONCLUSION:**

It is concluded that nurses had excellent knowledge with and appropriate use of PPE as vital in safeguarding the HCWs and spread of infection. However, practice was unsatisfactory about infection control standard precautions.

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