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Knowledge, attitude and awareness among healthcare professionals about influenza vaccination in Peshawar, Pakistan

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ABSTRACT

A cross-sectional study was carried out among HCPs in Northwest General Hospital & Research Centre, Hayatabad Peshawar, Pakistan. The purpose of this study was to investigate knowledge, awareness and attitude of HCPs towards influenza vaccination. A total of $N=170$ questionnaires were distributed among the staff. There was a 97% response rate to this survey ($n=165$). The median age of the respondents was 30 years and most of them, 98 (59.0%), were from age group of 24–30 years. The majority of the HCPs that participated in this study were male 106 (64.2%), and by profession, the majority were physicians 77 (46.7%), followed by pharmacists and nurses. A majority 114 (69.1%) believed that it was not compulsory for HCPs to get vaccinated for influenza. Top three identified barriers to vaccination were: *not everyone is familiar with the availability of the influenza vaccination at their institution* (Relative importance weight factors (RIWF)=0.71), *due to needle fear I do not like to get vaccinated* (RIWF=0.70) and *it is not compulsory for healthcare professionals to get vaccinated for influenza* (RIWF=0.64). The logistic regression analysis has revealed association for job experience and profession with the most of the eleven knowledge item. However, when overall sum of eleven items were tested to identify the factors affecting the knowledge score, along with profession ($-0.215 [-0.389 \text{ to } 0.040]$; $p=0.016$) and job experience ($0.823 [0.521-1.125]$; $p<0.001$) HCPs age ($-0.409 [-0.755 \text{ to } -0.064]$; $p=0.020$) was found to be another significant factor affecting the total knowledge score of HCPs. Overall, scoring of the correct responses revealed that nurses have better knowledge and understanding about influenza and the influenza vaccination (6.5 ± 0.8 , $p<0.001^*$), followed by pharmacists (6.3 ± 1.14) and physicians. In spite of the published guidelines and recommendations, a very low percentage of the healthcare professionals in our hospital were vaccinated against influenza, and the barriers to vaccination were prevalent. Various strategies, including arranging seminars regarding awareness about vaccinations, are required to improve the knowledge and overall outcomes.

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1. Introduction

Vaccinating healthcare professionals (HCP) against influenza is an approved infection control method [4–6]. In response to some global H1N1 epidemics [7], the World Health Organization (WHO) recommended the rapid immunisation of HCP against the influenza. The WHO recommendations are adopted around the globe to ensure the safety of the healthcare human resources and robust functioning of the healthcare setups [8,9]. Moreover, in today's global clinical practice, HCP vaccinations are considered essential measures to prevent influenza pandemic [10].

Healthcare settings are the ideal environment for the rapid spread of influenza and healthcare professionals are the primary group of carriers, potentially transmitting the disease to patients in their care [11]. The transmission of influenza within health services is extensively documented in the medical literature [12]. It is a serious health problem worldwide. The principal method for the prevention of influenza-related deaths and complications is vaccination of persons at high risk. Influenza immunisation reduced the risk of infection among HCPs and also protected the vulnerable patients, improving patient safety and significantly decreasing patient morbidity and mortality [13].

The Advisory Committee on Immunization Practices (ACIP) recommends vaccination of healthcare professionals (HCPs) because they care for persons at high risk for influenza-related complications [14]. Despite these recommendations and the promotional campaign, vaccination rates among HCPs are low [15]. The

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current rate of influenza vaccination remains unacceptably low at 42%. The low vaccination rate may be due to uncertainty about the effectiveness of the vaccine and fear of its adverse effects. However, understanding these barriers is essential in overcoming the low levels of compliance with vaccination recommendations [16]. HCPs are believed to have many of the same misconceptions about influenza and the influenza vaccine as do patients with the most general belief that one can get influenza-like symptoms from the influenza vaccination [17].

Addressing the situation in Pakistan, to date, there has been no specific/published guidelines for HCPs influenza vaccination in healthcare settings. In addition, there is a lack of any published studies that demonstrate HCPs' attitude and knowledge towards the influenza vaccination. Therefore, this study aimed to investigate the awareness, knowledge, and attitude of HCPs towards influenza vaccination and the reasons for not getting vaccinated.

2. Method

2.1. Study design

A cross-sectional study was carried out among the HCPs practicing at Northwest General Hospital & Research Centre in Peshawar, Pakistan, 1 April 2015–30 April 2015.

2.2. Study location

This study was conducted at Northwest General Hospital & Research Centre in Peshawar, Pakistan. It is a private teaching multispecialty hospital with a 220-bed capacity. Peshawar is one of Pakistan's main cities, known for its cultural and population diversity.

2.3. Ethical approval

The study protocol was approved by the Northwest General Hospital & Research Centre in Peshawar, Pakistan.

2.4. Sampling method

A universal sampling method was adopted. The entire body of HCPs working at the hospital were invited to participate in the study. Two trained hospital pharmacists were responsible for distributing the questionnaires and assessing the whether or not the participants had any confusion in answering the questions. The completed questionnaires were collected from the participants on the same day. The questionnaire was voluntary and accepting participation in the study and a returned and completed questionnaire were taken as consent to participate in the study.

2.5. Questionnaire items

The questionnaire was adopted from the existing literature addressing the same research question in other regions [16]. A preliminary version of the questionnaire was designed and subjected to content validation. A 27-item questionnaire was finalised and a pilot study was conducted among 25 HCPs to assess the face validity of the tool. The reliability and internal consistency of the tool were estimated using Cronbach's alpha test. The overall reliability (Cronbach's alpha) of the tool was found to be 0.87.

The questionnaire was comprised of three sections.

- The first section was comprised of seven items to gather the demographic information of respondents and the respondent's

Table 1
Demographics of respondents.

Variables/statements	N (%)
Age	
Range = 24 years–40 years	
Median = 30 years	
24–30 years	98 (59.0%)
31–40 years	67 (41.0%)
Gender	
Male	106 (64.2%)
Female	59 (35.8%)
Profession of respondents	
Physician	77 (46.7%)
Pharmacist	27 (16.4%)
Nurses	49 (29.7%)
Others (lab technician, physiotherapist, nutritionist)	12 (7.3%)
Qualification	
Bachelor of Medicine and Surgery (MBBS)	76 (46.1%)
Doctor of Pharmacy (Pharm.D)	27 (16.4%)
Bachelor of Nursing	47 (28.5%)
Lab Technician Diploma	9 (5.4%)
Doctor of Philosophy (PhD)	1 (0.6%)
MBBS + Medical Specialization	1 (0.6%)
Diploma in Nursing	1 (0.6%)
Diploma in Nutrition	1 (0.6%)
Bachelor of Physiotherapy	2 (1.2%)
Job experience	
1–2 years	6 (3.6%)
3–5 years	59 (35.8%)
6–10 years	100 (60.6%)
Employment sector	
Private	165 (100.0%)
Vaccination done in last 6–12 months	
Yes	28 (17.0%)
No	137 (83.0%)
Name the disease for which you have done vaccination	
Influenza	1 (0.6%)
Tetanus toxoid	27 (16.4%)

disclosure by asking whether they have vaccinated against influenza or any other disease (Table 1).

- The second section consisted of eight items inquiring the reasons for not vaccinating against influenza. A five-item Likert scale was provided to choose the relevant response (Table 2).
- The last part, section three of the questionnaire, regarded the knowledge about influenza and influenza vaccines. It was comprised of 11 statements, and a nominal scale (correct and incorrect) was provided for the respondents' convenience in disclosing their responses (Table 3).

2.6. Statistical analysis

Upon the completion of data collection, the data were coded into categorical, nominal and ordinal variables. The entire dataset was analysed using SPSS® version 20. Furthermore, to identify significant factors hindering influenza vaccination, A Fisher Exact Test was applied. In addition, to identify the top three barriers to vaccination, a relative index for each of the eight statements was calculated. Relative importance weight factors (RIWF) were also calculated to identify the top three barriers to vaccination among HCPs. "It is a simple and widely used approach of business and market strategies that allows subjective and objective assessments of multiple factors", and also assisting in ranking of the factors that might have main association with the problem under discussion [18]. Ranking of RIWF was done, with the value closest to 1 ranked as the main barrier to influenza vaccination. For the 11-items presented in section five, scoring of the responses was done using the correct answers (*). Furthermore, Identify the contributing factors affecting the knowledge score, linear regression was applied using score as the dependant variable and gender, age, profession and job experience as the independent variable.

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