Vaccine Preventable Diseases- Vaccination Status, Awareness and Perceptions of Health Care Providers

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Abstract

Background: To determine the vaccination status and knowledge of health care providers (HCPs) against vaccine preventable diseases (VPDs)

Methods: In this descriptive cross sectional study sample size was categorized into 13 (12.3%) consultants, 22 (21%) post-graduate trainees (PGTs)/medical officers (MOs), 16 (15.2%) house officers (HOs), 17 (16.2%) nurses, 10 (9.5%) laboratory attendants, 10 (9.5%) ward boys/ayas and 17 (16.2%) sweepers. Fifty one participants (48.6%) belonged to the doctors group, while 54 (51.4%) of the health care providers belonged to the group labeled as ‘paramedics and others’. After undergoing the evaluation process by the Institutional Research Forum HCPs who fulfilled our specific selection criteria were approached. The total study duration was 3 months. To determine any existing association of status of HCP as doctors or paramedics with different parameters of vaccination status, awareness and practices regarding vaccination of VPDs, chi squared test at 5% level of significance was applied (p-values less than 0.05 were considered statistically significant).

Results: Amongst all HCPs, 66.7% were vaccinated against hepatitis B, 74.3% against MMR, 5.7% against Influenza, 79.0% against Diphtheria, 80.0% against Pertussis, 82.9% against Tetanus, 95.2% against Polio, 11.4% against Typhoid and 9.5% against Meningococcal. Majority (97.1%) considered vaccination as an important method of disease prevention. Majority of HCPs had an acquaintance about the diseases against which they should be vaccinated yet 23.09% of the participants were totally unaware of the VPDs. The most common reason stated for not being duly vaccinated was lack of appropriate knowledge.

Conclusion: Vaccination status and awareness regarding VPDs were not up to the mark in HCPs.

Key Words: Vaccine, Health care provider, Immunization.

Introduction

Health care providers (HCPs) are responsible for providing health services to the people of the society. They are therefore occupationally at risk of acquiring certain infectious diseases more than the general masses, primarily through contact, airborne and droplet routes. HCPs are exposed to VPDs more often and may transmit them to susceptible patients, their families and other HCPs. Although vaccines are available for over 26 diseases, but HCPs in particular should get immunized against Hepatitis B, MMR, Influenza, tetanus, diphtheria and pertussis (Tdap).

In Pakistan extended program of immunization (EPI) covers 9 VPDs in children and also provides tetanus protection to pregnant females but no initiative has been taken so far for the protection of HCPs. In some countries vaccines are provided free of cost to HCPs and this step can reduce disease burden among HCPs in Pakistan immensely.

Subjects and Methods

This descriptive cross sectional study was conducted at Holy Family Hospital, an Allied Hospital of Rawalpindi Medical College and a tertiary care public health care facility of Rawalpindi. A sample size of 105 HCPs was taken by keeping expected proportion of HCPs who are vaccinated against at least one VPD as 49%, keeping 95% confidence level and margin of error at 5%. All the HCPs included as study population were employed in hospital for at least one month. Whereas HCPs who were being cases of VPDs under study, were excluded from our sample. The sample was further categorized into 13 (12.3%) consultants, 22 (21%) post-graduate trainees (PGTs)/medical officers (MOs), 16 (15.2%) house officers (HOs), 17 (16.2%) nurses, 10 (9.5%) laboratory attendants, 10 (9.5%) ward boys/ayas and 17 (16.2%) sweepers. For the purpose of analysis, the consultants, post graduate trainees/medical officers and house officers have been categorized in a group titled as ‘doctors’, whereas the nurses, Ward boys, ayas, laboratory technicians and sweepers have been included in the category ‘paramedics and others’.

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participants (48.6%) belonged to the doctors group, while 54 (51.4%) of the health care providers belonged to the group labeled as ‘paramedics and others’. A random sample was derived using the hospital employer’s record as the sampling frame work and using stratified random sampling technique.

After undergoing the evaluation process by the Institutional Research Forum of Rawalpindi Medical College, Rawalpindi this study was conducted. HCPs of HFH who fulfilled our specific selection criteria were approached and after explaining to them the purpose, nature and procedure of the study, written consent was taken and their interviews were conducted as data collection technique, with help of self-structured questionnaire using as data collection tool. The total study duration was 3 months from 15th June to 15th August, 2014.To determine any existing association of status of HCP as doctors or paramedics with different parameters of vaccination status, awareness and practices regarding vaccination of VPD’s, chi squared test at 5% level of significance was applied ( p-values less than 0.05 were considered statistically significant).

Results

Amongst all 105 participants 62 (59%) were males. Majority of participants (72.4%) belonged to the age group of 20-40 years whereas 27% were above the age of 40 years. After excluding the medical doctors and consultants (who were at least MBBS and/or above the age of post-graduation) (47.67%), the educational status of remaining staff (51.4%) varied from receiving no formal education (10.5%), up till primary (9.5%), up till matriculation (14.3%) or bachelorette (18.1%). Majority of participants (84.4%) were of the opinion that their profession puts them in a position where they are more exposed to diseased agents as compared to other professionals. The reasons they mentioned for this increased exposure were interaction/contact with patients (65.5%), inadequate knowledge about prevention (8%). Inadequate preventive measures taken was a reason presented by 19.5% study participants, whereas 8.9% were not certain about any justification. Only 2 (3.9%) of the doctors considered themselves, less exposed to diseases, while majority comprised of those belonging to the group of paramedics and others (25.9%). This difference was highly statistically significant ($\chi^2$ statistic 9.83 and p value 0.002). Almost all the participants 97.1% stated that prevention from diseases due to exposure is possible. Amongst these 40.1% thought that prevention against all diseases is possible, while remaining 59.9% considered only some diseases to be preventable, not all.

Majority of HCPs had an acquaintance about the diseases against which they should be vaccinated yet 23.09% of the participants were totally unaware of the VPDs. The most common reason stated for not being duly vaccinated was lack of appropriate knowledge (Table 1). Responding to an inquiry relevant to best possible preventive methods against some or all the diseases, majority of the participants 87.37% suggested both physical protection and vaccination whereas 12.7% participants mentioned only physical protection. When inquired about the perceptions regarding the role of vaccines in prevention of diseases 44.8% thought that vaccines provide complete protection or immunization against the disease. Majority of study participants (97.1%) considered it important for HCPs to be vaccinated. Majority of the study participants (81%) were vaccinated against different diseases. Amongst all HCPs, 66.7% were vaccinated against hepatitis B, 74.3% against MMR, 5.7% against Influenza, 79.0% against diphtheria, 80.0% against pertussis, 82.9% against tetanus, 95.2% against polio, 11.4% against typhoid and 9.5% against meningococcal (Table 2). Majority (97.1%) considered vaccination as an important method of disease prevention.

<table>
<thead>
<tr>
<th>Table 1: Reasons given or not getting vaccinated</th>
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<tr>
<td>Reasons for not been vaccinated</td>
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<tr>
<td>Doctors</td>
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<tr>
<td>Inadequate information</td>
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<td>Do not consider vaccination important</td>
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<td>High price</td>
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<td>Others</td>
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Discussion

Studies revealed non-availability and affordability as reason for not being vaccinated. In an international study conducted in Greece on attitudes towards mandatory vaccination and vaccination coverage against vaccine-preventable diseases among health-care workers in tertiary-care hospitals revealed that 56.5% had vaccine cover against hepatitis B versus 66.7% of our study. In another study on attitudes, vaccination among primary
perceptions and factors associated with influenza health care professionals in Navarre, results were below desirable levels. Yet 56.2% had received the influenza vaccine which is not in accordance with the results of our study for that only 5.7% HCPs received influenza vaccine. Similar results were obtained in a study by Murray et al wherein 95% of the HCPs had vaccine cover against hepatitis B and almost half of the study population had received influenza vaccine which are better results than the ones obtained in our study. Yet HCP vaccination coverage and knowledge of vaccination requirements were generally poor. Present study reflects the situation at a tertiary care centre. The situation at other levels needs to be examined. Health professionals, being exposed to the pathogens, need adequate coverage against VPD.

**Conclusion**

Health care providers, working at all levels need proper coverage against vaccination preventable diseases, as they are exposed to the pathogens.

**References**