SHORT REPORT

Awareness about swine flu/H1N1 influenza virus among the tertiary population of Lahore, Pakistan

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Abstract

The prevalence of pandemic and viral diseases like dengue, diphtheria, Congo virus and now influenza A (H1N1) virus (swine flu) has been creating trouble among the residents of Punjab, Pakistan due to high mortality rates. People have not yet forgotten the dramatic spread and the resulting deaths due to dengue fever and have start facing the fear of another communicable viral disease, namely the swine flu. A study was conducted to assess the awareness about the causes, symptoms and treatment of swine flu among the tertiary population (n=286) of Lahore, Pakistan via a self-administered questionnaire. Majority of the respondents 233(84.1%) had heard of the swine flu but did not have knowledge about the various symptoms (26%-97%), transmission factors (89%-98%) and preventive measures (91%-98%). Swine flu is a serious concern and officials should take necessary steps to avoid the morbidity and mortality due to the disease.

Keywords: Awareness, Pandemics, Public health, Influenza A virus, H1N1 subtype.

Introduction

In recent times, the swine flu has created an immense pandemonium among the individuals of several areas of Pakistan, where the people are shocked regarding the rapid spread of the disease. The virus has struck many parts of the country, with the most affected areas including Rawalpindi, followed by Lahore where the spread of the disease has created fear across the various sectors of the society. In 2014, the outbreak of swine flu in Pakistan was reported from Multan, Dera Ghazi Khan and Taunsa, where 5 out of more than 10 people lost their lives due to the virus.[1] In 2015-16, 16 mortalities had been noted out of more than 46 reported cases. Pakistan's neighbouring country India is the third largest country affected by the disease, where, in 2015 alone, about 1731 deaths and more than 30,000 cases were reported due to swine flu.[2]

Swine flu is an influenza A virus, subtype H1N1 and is generally a disease of pigs. The disease usually occurs in people who work around the pigs or poultry, and can also transfer from one human to another through respiratory means including vaporizers and fomites.[3] The virus can also be transmitted through contact via contaminated hard surfaces like doorknobs or counters. The World Health Organization (WHO) has signified the threat of H1N1 influenza A disease by rating it as a level 6.[4]

Generally, an increasing mortality rate among communicable diseases creates fear and panic among individuals which may also lead to worse epidemics. Demand for diagnostic tests and treatment rises even among people with no symptoms. This creates an extra pressure over the government to cope with existing epidemic situation with limited medical resources.[5] Awareness about H1N1 influenza A among the public can be a significant tool to control the spread of the disease, by educating the community to follow precautionary strategies to avoid or control the spread of the disease.[6] This will also help the policy makers to take appropriate steps to promote individual- or community-based health programmes in pandemic situations. The current study was therefore conducted in Lahore, Pakistan to explore the level of awareness among the general public regarding H1N1 influenza A or swine flu.

Methods and Results

A cross-sectional study was conducted to collect the data from tertiary population of Lahore, Pakistan, from October 10, 2015 to February 25, 2016 after taking permission from our institutional review board. Lahore is the fourth literate city of Pakistan with 64.7% literacy rate. The rate of tertiary education in the city is approximately 12.5%.[7] The population of Lahore is over 100 million and the tertiary population is approximately 12.5 million. The sample size was calculated using the population size of N=12.5 million, margin of error as e = 0.05, confidence level as $1-\alpha=0.95$, and sample proportion for tertiary education as =0.125:

$$N= N*X / X+N-1 = 289, \text{ where, } X= Z^2_{a/2}\, p\,(1-p) / e^2$$

The sample was selected using a two-stage sampling technique. In the first stage, three public and three private

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Table-1: Personal profile of the participants and knowledge regarding swine flu.

		Frequency (%)
Health Status		
	Excellent	39 (14.1)
	Good	121 (43.8)
	Moderate	96 (34.8)
	Poor	20 (7.2)
Gender		
	Male	112 (40.1)
	Female	167 (59.9)
Education		
	Under-Graduation	63 (23.1)
	Graduation	86 (31.5)
	Post-Graduation	124 (45.4)
Family income (Rs.)		
	≤ 20,000	69 (26.5)
	20,001 - 40,000	71 (27.3)
	40,001 - 60,000	46 (17.7)
	> 60,000	74 (28.5)
Area		
	Urban	217 (80.1)
	Rural	54 (19.9)
Occupation		
	Others (Student/Housewives)	156 (56.9)
	Employed	108 (43.1)
Physician in blood relation		
	Yes	71 (26.9)
	No	192 (72.7)
Knowledge about H1N1 influenza		
	Yes	102 (37.1)
	No	173 (62.9)
Heard about swine flu		
	Yes	233 (84.1)
	No	44 (15.9)
Experienced seasonal influenza ever		
	Yes	139 (51.1)
	No	133 (48.9)
Received vaccination for influenza during the last 12 months		
	Yes	69 (25.6)
	No	201 (74.4)
Diagnosis of swine flu		
	Nasopharyngeal swab test	259 (92.8)
	Blood test	10 (3.6)
	Do not know	10 (3.6)
Source of information regarding swine flu		
	Television and news channel	34 (12.2)
	Seminars	12 (4.3)
	Internet	22 (7.9)
	Hoardings/ banners	13 (4.7)
	Advertisement/ messages/ pamphlets	13 (4.7)
	Health department staff	8 (2.9)
	Newspaper	20 (7.2)
	Personal Doctor	14 (5.0)

hospitals were selected by simple random sampling. In the second stage, systematic sampling was used where every 30th person entering these hospitals was asked to participate in the study. This process continued until the required sample was achieved.

The respondents were asked to fill a self-administered questionnaire after obtaining their verbal consent. Inclusion criteria included those who were either enrolled in a graduation degree programme or at least had a graduation degree while participants below this education level were excluded from the study. In addition, respondents who were not willing to participate in the study were also excluded. Three questionnaires were incomplete and were excluded from the analysis, bringing down the final data count used for analysis to 286. By taking tertiary population in Pakistan as 6%, tertiary population in Lahore as 12.5%, number of respondents studied as 286 and alpha as 5%, the post-hoc power of the sample studied was 97.2%.[8] In addition, the reliability measure (Cronbach Alpha) of the disease-related items of the questionnaire was 0.946. All the data was entered, screened and analysed on SPSS version 21. Frequencies and percentages were used for the presentation and interpretation of the data.

A total of 167 out of 279 (59.9%) respondents were female, and the mean age was 27±9.7 years, ranging from 14 to 66 years. Majority of the respondents were from the urban area (80.1%), and 210 out of 273 (76.9%) respondents had at least a graduation degree. A total of 108 out of 264 (43.1%) respondents were working and the rest were either students or housewives. The results presented in Table-1 depict that the health status of 256 out of 276 (92.8%) respondents was at least moderate.

Majority of the respondents 192 (72.7%) did not have a physician in their blood relation. Although most of the respondents (233; 84.1%) had heard of the swine flu only a small proportion (102; 37.1%) had knowledge regarding the H1N1 influenza A virus. Approximately half of the respondents (139; 51.1%) had experienced seasonal influenza in their lives and 69 (25.6%) participants had been vaccinated to prevent influenza infection during the past 12 months. Majority of the respondents (259; 92.8%) had correctly identified the diagnostic test for swine flu. The most common source of knowledge regarding swine flu was television and news channels (34; 12.2%).

A total of 135 (47.3%) respondents were aware that treatment was available for swine flu, while 123 (43%) participants said that no medicine was available and 28 (9.7%) did not know about availability of any medicine for swine flu. In addition, 255 (89.2%) respondents did not

Table-2: Awareness regarding swine flu including its symptoms, features, transmission and preventive measures.

	Yes	No	Do not know
Availability of treatment/medicine for swine flu	135(47.3)	123(43.0)	28(9.7)
Can swine flu cause death?	206(72.0)	60(21.1)	19(6.8)
Swine flu is communicable	190(66.3)	61(21.5)	35(12.2)
Any vaccine available for swine flu	23(7.9)	8(2.9)	255(89.2)
Do you have any allergy from the following?			
a. Pollen	6(2.2)	23(8.2)	256(89.6)
b. Hay fever	2(0.7)	26(9.0)	258(90.3)
c. Animal hair	3(1.1)	25(8.6)	258(90.3)
d. Food	8(2.9)	21(7.2)	257(90.0)
e. Dust	8(2.9)	1(0.4)	277(96.8)
Which of the following are symptoms/features of swine flu?			
a. Fever	39(13.6)	11(3.9)	236(82.4)
b. Abdominal pain	35(12.2)	28(9.7)	223(78.1)
c. Runny nose	54(19.0)	13(4.7)	218(76.3)
d. Breathlessness	52(18.3)	11(3.9)	63(22.2)
e. Cough and cold	96(33.7)	19(6.8)	170(59.5)
f. Rashes	57(20.1)	56(19.7)	172(60.2)
g. Diarrhoea	57(20.1)	55(19.4)	173(60.6)
h. Chills	65(22.6)	52(18.3)	169(59.1)
i. Sore throat	79(27.6)	39(13.6)	168(58.8)
j. Body aches	109(38.0)	54(19.0)	123(43.0)
k. Fatigue	95(33.3)	69(24.0)	122(42.7)
l. Chest pain	84(29.4)	70(24.4)	132(46.2)
m. Convulsions	36(12.5)	102(35.5)	149(52.0)
n. Pneumonia	54(19.0)	90(31.5)	142(49.5)
o. Loss of appetite	9(3.2)	6(2.2)	271(94.6)
Swine Flu can transmit through:			
a. Coughing/sneezing	31(10.8)	2(0.7)	253(88.5)
b. Eating pork	11(3.9)	6(2.2)	269(93.9)
c. House flies	6(2.2)	9(3.2)	271(94.6)
d. Shaking hands	21(7.2)	6(2.2)	259(90.7)
e. Blood transfer	13(4.7)	7(2.5)	265(92.8)
f. Mosquito bite	2(0.7)	15(5.4)	269(93.9)
g. Food and water	10(3.6)	10(3.6)	265(92.8)
h. Air	19(6.8)	7(2.5)	259(90.7)
How can one prevent swine flu infection?			
a. Hand washing	25(8.6)	1(0.4)	260(91.0)
b. Wash hand before touching the eyes or nose	21(7.2)	4(1.4)	261(91.4)
c. Cover nose while sneezing	26(9.0)	3(1.1)	257(90.0)
d. Wash hands after using toilet	19(6.8)	2(0.7)	265(92.5)
e. Wash hands with the soap	17(6.1)	0(0.0)	269(93.9)
f. Throw away the used tissue into the bin	21(7.2)	0(0.0)	265(92.8)
g. Turn face from another	7(2.5)	10(3.6)	269(93.9)
h. Avoid unnecessary visit to crowded places	14(5.0)	6(2.2)	265(92.8)
i. Keep infected person in a separate room	10(3.6)	11(3.9)	265(92.5)
j. Use of mask/handkerchief	19(6.8)	5(1.8)	261(91.4)
k. Avoid eating flesh/meat products	13(4.7)	7(2.5)	265(92.8)
l. Drink plenty of water	16(5.7)	5(1.8)	265(92.5)

know about the availability of any vaccine for swine flu. Majority of the respondents considered the disease as communicable (190; 66.3%) and knew that it could be fatal (206; 72.0%). Majority of the respondents did not have any knowledge regarding the symptoms or features of swine flu (Table-2). Worryingly majority of the participants (≥253; ≥88.3%) either did not have knowledge or incorrectly reported the preventive

measures or transmitting aspects of the disease.

Discussion

Researches on knowledge, attitude and practices have enormous impact in regulation procedures of communicable diseases as they highlight the state of the mind and practices of the community and encourage open co-operation which is vital for execution of wellbeing programmes.[9] This is especially important in controlling pandemic diseases like dengue fever, bird flu, Congo virus and influenza A virus subtype H1N1. People from almost all areas of Pakistan move to Lahore to seek better education or employment opportunities. We can predict that the situation regarding the awareness of swine flu may be lower compared to the less educated community of the country. Poverty, malnourishment, low immunity and the lack of awareness about a disease are the major factors for poor public health in a region.[10] In addition, lack of knowledge about a viral disease such as swine flu among the educated community of a major city certainly highlights an alarming situation and the authorities must take preventive measures to reduce the spread of the disease and improve the public health outcomes.

Although people from many regions, cultures and socio-economic status can be found in Lahore but the results of the present study cannot be generalised for the tertiary population of the entire country until a large sample is taken from all the areas of Pakistan. Furthermore, as only the tertiary population of the city was investigated in the current study, we recommend that a similar investigation should also be extended for low-educated or illiterate community of the city.

Conclusion

Majority of the respondents were unaware regarding the various symptoms, transmuting factors, preventive measures of swine flu. Swine flu is a serious concern and officials should take necessary steps to avoid the morbidity and mortality due to the disease.

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