KNOWLEDGE OF CLINICAL STUDENTS REGARDING PANDEMIC H1N1 INFLUENZA

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ABSTRACT

Aims: The aim of this study is to seek perception of clinical students concerning Pandemic H1N1 Influenza and its relation with the social and demographic determinants. We chose medical students as subjects of the study because this stratum is looked upon by the general population as a vital media to convey key directives regarding disease prevention, control and management. The important thing about this study is that it is the first of its kind to be conducted in medical institutes of Punjab. It paves a way for further studies aimed at pinpointing attitude and practices regarding Pandemic H1N1 Influenza among medical and paramedical staff. Our study can assist health care authorities unveil the knowledge gaps by developing educational campaigns.

Methods: Data was collected through distribution of self-administered questionnaires to 300 students selected by the lottery method considering stratified random sampling. The study included 3rd, 4th and final year Bachelor of Medicine and Bachelor of Surgery students. Questions were asked about signs and symptoms, source of information, mode and route of transmission, mainly affected organs, sample to be tested, availability of treatment and vaccination, spread of infection and requirement of urgent interventions. The information collected was entered and analyzed through Statistical Package for Social Sciences Software version 23.

Results: With 100% response rate, the major source of information remained as doctors (44.3%) and the common sign reported was runny nose (33.7%). The mean Pandemic H1N1 influenza knowledge point±standard deviation was 6.49±1.94 degrees. Rate of medical students, who knew about causative agent was 96.3%, route of transmission 69.7%, mode of transmission 62.3%, correct complications 77%, treatment available 66.7%, vaccine availability 41%, test availability 64.3%, specimen of choice to diagnose 29.3%, organ chiefly affected 49.3% and situations requiring urgent intervention 70%. Only 25.3% were aware of the fact that water is not responsible for the spread of the virus. Knowledge of each following year was higher. Female gender remained significant predictor in majority of questions.

Conclusion: The study described that the knowledge of medical students regarding Pandemic H1N1 Influenza was moderate. The awareness about disease transmission and management was found to be inadequate. The majority had some misconceptions about the disease. The study provides the pace to disseminate awareness about this infection among students by organizing workshops and seminars.

Keywords: Influenza, knowledge, students

INTRODUCTION

Pandemic H1N1 Influenza, detected initially in Mexico in March 2009 promptly disseminated across the globe encompassing 74 states, when on 11th June, 2009 WHO upraised the pandemic alarm to phase 6 (1, 2). Belonging to orthomyxoviradae family, H1N1Influenza virus constitutes RNA genome (3). The virus comprises of four variant types: one human type, one avian type and two swine types (2). This agent is responsible for 1,462 deaths and 177,475 diagnosed cases in 2009 outbreak remains an inevitable thereafter Pakistan when its first case was reported in Islamabad on 11th August 2009 (4).

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Tertiary care hospitals are assumed to be substantial source of infection due to overcrowding by surge of patients during medical crisis and direct contact of health care personnel with potential victims of contagious diseases. Clinical students are often neglected, but they form a significant group of population since they are at high risk of acquiring the infection and transmitting it to the community due to their regular visits to the allied clinics with their lack of experience. Behavioral accommodations such as hygiene protocols and preventive measures are necessary for medical students which can only be adopted when they are reasonably concerned about any epidemic for which the administration has given a warning sign. Unfortunately, medical students are reported to have low compliance with infection control guidelines (5).

The knowledge of the disease among clinical students is crucial because this echelon is looked upon by general public as a vital media to convey key directives regarding its prevention, control and management. The vague perception of clinical students concerning pandemic H1N1 Influenza can jeopardize disinfection goal of the hospitals and stigmatize the medical education system of Pakistan. Therefore, current survey was designed to investigate level of awareness of clinical students about pandemic H1N1 influenza with the objective to identify knowledge gaps which may prove helpful to policy makers to formulate relevant seminars in the future. Medical knowledge is a dynamic variable which ought to be updated every five years, this educational research might help to accomplish this task.

MATERIAL AND METHODS

This cross-sectional study was conducted amongst the clinical students of Pakistan in April 2016. 3rd, 4th and final year students were included. Bachelor of Medicine and Bachelor of Surgery students (MBBS)-I, MBBS-II and B.Sc. students were excluded. Stratified sampling was done to access equal number of students in each class. Number of male and female was also considered equal. With 95% confidence interval and 5% margin of error, the minimum sample size collected was 278 but for statistical convenience, the sample was increased to 300 participants. The study included following socio-demographic variables: name, age, gender, educational status and father's occupation; also conducted through a predesigned questionnaire. Informed verbal consent was taken. Students were given the right to withdraw from the study. Questions were asked about signs and symptoms, source of information, mode and route of transmission, chiefly affected organs, sample to be tested, availability of treatment and vaccination, spread of infection and requirement of urgent interventions. Out of total fifteen questions, nine were multiple choice questions but the rest were close ended questions. Permission letter was granted by the institutional review board.

After collection, data was entered and analyzed through Statistical Package for Social Sciences Software (SPSS) version 23 and presented with the help of Microsoft Excel 2013 software program. In a data sheet, correct answers were labeled as 1 while that of wrong as 0. Thus, knowledge scores were obtained. Level of knowledge was classified as: poor from 0 to 4, moderate from 5 to 7 and good from 8 to 11. Chi-square test was performed to obtain comparable catagorical data. The statistical significance was set at $p<0.05$.

RESULTS

With 100% response rate, the age of participants was 22.13±1.274 years. Father's occupation of 11.3% students was medical practice. Students from Southern Punjab were 198 and that of 74 from Northern Punjab and 28 from cities outside Punjab.

Generally, the results of study manifested that students studied, possessed moderate knowledge regarding Pandemic H1N1 Influenza with mean knowledge score of 6.49±1.94 ranging between (1.0-10.0) with 7.0 degrees median. No statistical significance was found as per gender and class ($p>0.05$).

All the respondents had heard about Pandemic H1N1 Influenza whereas 17 (5.7%) had witnessed a case. Figures 1 and 2 illuminate the percentage of participants aware of signs and symptoms and their sources of information, respectively.
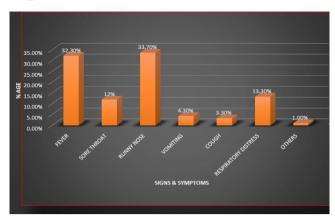
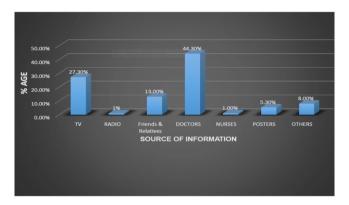Figure 1: The major signs & symptoms of Pandemic H1N1 Influenza.

Figure 2: The source of information

A perusal of Table 1 illustrates the frequency and percentage of participants aware of correct information with respect to gender and year. Regarding the causative agent, males scored significantly higher than females (p=0.032). Considering the causative agent, route of transmission and specimen of choice, each class had significantly higher scores than the year before (p=0.017), (p=0.00), (p=0.00). The scores of 4th year students were significantly higher than senior students, than that of 3rd year students for lung as a major organ to be affected and for the right situation requiring urgent intervention (p= 0.01), (p= 0.0).

Table 1: Displaying correlation of knowledge based on class and gender

AREA OF KNOWLEDGE	OVERALL CORRECT ANSWER NUMBER (PERCENT)	CORRECT ANSWER BASED ON GENDER NUMBER (PERCENT)		P-VALUE	CORRECT ANSWER BASED ON MBBS YEAR FREQUENCY (PERCENT)			P-VALUE
		Male	Female		3rd Year	4th Year	5th Year	
Causative Agent	289 (96.3)	148 (98.7)	141 (94.0)	0.032	92 (92.0)	98 (98.0)	99 (99.0)	0.017
Route of Transmission	209 (69.7)	108 (72.0)	101 (49.0)	0.379	47 (47.0)	77 (77.0)	85 (85.0)	0.000
Mode of Transmission	187 (62.3)	92 (61.3)	95 (63.3)	0.721	54 (54.0)	70 (70.0)	63 (63.0)	0.065
Complications in Patients	233 (77.7)	112 (74.7)	121 (80.7)	0.212	81 (81.0)	72 (72.0)	80 (80.0)	0.246
Treatment Availability	200 (66.7)	91 (60.7)	109 (72.7)	0.027	70 (70.0)	61 (61.0)	69 (69.0)	0.335
Vaccine Availability	123 (41.0)	43 (28.7)	80 (53.3)	<0.001	61 (61.0)	19 (19.0)	43 (43.0)	<0.001
Test Availability	193 (64.3)	94 (62.7)	99 (66.0)	0.547	66 (66.0)	59 (59.0)	68 (68.0)	0.378
Specimen of Choice	88 (29.3)	36 (24.0)	52 (34.7)	0.042	17 (17.0)	26 (26.0)	45 (45.0)	<0.001
Organ Chiefly Affected	148 (49.3)	70 (46.7)	78 (52.0)	0.356	37 (37.0)	56 (56.0)	55 (55.0)	0.010
Situations Requiring Urgent Interventions	210 (70.0)	101 (67.3)	109 (72.7)	0.313	57 (57.0)	83 (83.0)	70 (70.0)	<0.001
Spread by Pool & Drinking Water	76 (25.3)	34 (22.7)	42 (28.0)	0.288	27 (27.0)	24 (24.0)	25 (25.0)	0.884

Seventy participants (23.3%) narrated that route of transmission was faceo-oral. Almost one third of students (27.7%) chose the option of close contact as a mode of transmission. Forty seven partakers (15.7%) suspected frequent & prolonged vomiting to be addressed urgently.

DISCUSSION

The new variant of Pandemic H1N1 Influenza has been a serious threat for world communities likewise in Pakistan. There have been two confirmed cases and deaths due to this disease in Bahawal Victoria Hospital (6). Understanding the perception to this infectious disease is crucial since innumerable cases were reported in Southeast Asia, so Pakistan is under the persistent alarm of this infection. We recruited samples from medical students as this group is at high risk of being infected with this agent, due to frequent contact with patients and possessing lesser knowledge and experience compared to other members of medical staff because they form health oriented constellation representative of both general population and medical personnel.

Study results showed that 100% students had heard about Pandemic H1N1 Influenza which was consistent with the findings of the study conducted by Farahat et al. (2). Present study emphasizes the relative inadequacy of television (27.3%) in publicizing required information unlike the study conducted in India by Datta et al. (7) TV contributed to 67.5%. Only 32.3% of our sample identified fever as the major symptom of Pan-

demic H1N1 Influenza whereas vast majority i.e. 72.5% by Dow University students and 67.7% of Al-Nahrain medical students in Iraq opted for fever (1, 4). Merely 33.7% of students designated runny nose as symptom of it while a major proportion (91%) of Isra University students recognized it as a symptom of this infection (8). Students familiar with the correct causative agent were 96.3%. Contrarily, 4.5% of Menofia Governorate school children labeled the agent as viral (2). Our results demonstrated that 69.7% stated nose as route of transmission of disease, these findings are different from the report of Rukmanee et al. (9) where 73% had absolutely no idea about it. Our students stated coughing and sneezing as a way of transmission (62.3%), a similar result was reported by Dow University (63.6%) (4). This study conveyed that 66.7% had knowledge about the treatment availability, a finding corresponding to the study by Al.Naggar et al. (10). Rate of participants who were convinced about the vaccine availability was 41% whereas 73.2% students of Khowaja et al. (4) did not have any clue. Out of 300 students 64.3% confirmed the availability of a diagnostic test; however, only 29.3% selected throat swab as the right specimen of choice. A similar finding was deduced from rural population of Kerala (52.11%) but 58.65% of paramedical workers of Pondicherry agreed for throat swab (9, 11). Half of the respondents opined that lung was the chiefly affected organ, harmonizing with Data et al (75.53%) (9). About two third members (70%) regarded dyspnea as a situation to intervene urgently and 74.7% of students had a wrong perception that the virus can be spread by pools and drinking water; the exact complementary findings were reported by Aslan et al. (12).

The alarming condition was that medical students in the present study, had no adequate source of information regarding this infection. The mean Pandemic H1N1 Influenza knowledge of senior students was calculated to be more than the subordinate ones because of better orientation of this grade to curriculum and clinical practice. Students had moderate awareness respecting route and mode of transmission, complications, treatment, test and vaccine availability, which they accredited to Clinicopathological Conference conducted last year. Respondents manifested poor information concerning symptoms, specimen for diagnosis, affected organs and spread of infection because in Punjab, the agent had not caused public panic yet. Unfortunately, participants did not know that fever is a major symptom of Pandemic H1N1 Influenza when they already were cognizant that fever was common to all infections. This highlighted their level of concern about Pandemic H1N1 Influenza. Being familiar with the fact that patients suffered from vomiting and diarrhea along with respiratory symptoms, some students had misapprehension that it could be acquired through faceo-oral route. Females scored significantly higher than males regarding choice of specimen, vaccine and treatment availability since they are known to be more health and hygiene conscious than male members of society.

The strength of study lies in the fact that it is first of its kind to be conducted in medical institutes of Punjab. One of the limitations of the study is that it was conducted amongst a particular population in a specified period of time when Pakistan was not being struck by pandemic H1N1 Influenza. Therefore, its results cannot be generalized nor can be representative of other medical institutes. This project is further restricted by its cross-sectional study design which does not assist indetermination of cause and effect. However, it concretes a way for further studies to be conducted.

The results of the study portray that medical students' knowledge is insufficient regarding transmission and management of pandemic H1N1 Influenza, which can be attributed to inadequacy of health authorities and mass media. Majority had the assumption that virus can be spread by the swimming pools. Yet, some had misconception i.e. oral cavity and pharynx are the chiefly affected parts of body. The outcomes of the study demand that it is essential to launch educational campaigns to raise awareness.

To achieve desired results, health education programs, workshops, seminars and conferences should be arranged for the disease control and prevention across the country to build up the confidence of medical students whose active participation may play a significant role in abating this agent which may afflict the nation in no time. Infection control guidelines should be included in syllabus of students.

Ethics Committee Approval: This study was approved by Scientific Researches Ethics Committee of Quaid-e Azam Medical College Bahawalpur.

Informed Consent: Verbal informed consent was obtained from the participants of this study.

Conflict of Interest: The authors declared no conflict of interest.

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REFERENCES

1. Ameer AJA. Influenza-A (H1N1) knowledge and perceptions among al-nahrain medical students. The Iraqi Postgraduate Medical Journal 2012;11(4):452-7.

2. Farhat T, Al-Kot M, Al-Fath OA et al. Promotion of knowledge, attitude and practice towards swine flu A / H1N1; an intervention study on secondary school children of menofia governorate, Egypt. Menofia Medical Journal 2010;23(2):83-94.

3. Ozer A, Kirecci E, Ekerbicer HC et al. Medical faculty and school of health student knowledge of and behavior regarding swine flu and vaccine in Kahramanmaras, Turkey. Southeast Asian J Trop Med Public Health 2011;42(11):161-7.

4. Khowaja ZA, Soomro MI, Pirzada AK et al. Awareness of the pandemic H1N1 influenza global outbreak 2009 among medical students in Karachi, Pakistan. J Infect Dev Ctries 2011;5(3):151-5.

5. Wiwanitkit V. Pre-clinical year medical students: at-risk of contracting swine flu. Hong Kong Med Journal 2010;16(2):158-9.

6. http://www.lhrtimes.com/2016/02/03/two-women-fall-prey-to-swine-flu-in-bahawalpur (20 May 2016).

7. Datta SS, Kuppuraman D, Bortane AV et al. Knowledge, attitude and practices regarding swine flu among para-medical workers in a tertiary care hospital in Pondicherry. Journal of Communicable Diseases 2011;43(1):1-9.

8. Hussain ZA, Hussain SA, Hussain FA. Medical students' knowledge, perceptions, and behavioral intentions towards the H1N1 influenza, swine flu, in Pakistan: a brief report. American Journal of Infection Control 2012;40:11-3.

9. Rukmanee N, Yimsamran S, Rukmanee P et al. Knowledge, attitude and practice (KAP) regarding influenza a (H1N1) among a population living along thai-myanmar border, ratchaburi province, Thailand. Southeast Asian Journal Trop Med Public Health 2014;45(4):825-33.

10. Al-Naggar RA, Karim AJ, Bobryshev YV. Knowledge of Malaysian University students towards swine-origin influenza a (H1N1) virus: a qualitative study. International Archives of Medicine section: infectious diseases 2015;8(12):1-7.

11. Kawanpure H, Ugargol AR, Padmanabha BV. A study to assess knowledge, attitude and practice regarding swine flu. International Journal of Health Sciences and Research 2014;4(8):6-11.

12. Aslan S, Gulsun S, Citak EC et al. An inquiry of knowledge, attitudes and practices against pandemic H1N1 influenza among turkish healthcare workers: experience of a single center in southeast of Turkey. African Journal of Microbiology Research 2010;4(22):2363-70.