

Influenza-A (H1N1) knowledge and Perceptions Among Al-Nahrain Medical Students

Atheer J. Abdul Ameer

ABSTRACT:

BACKGROUND:

Understanding the awareness and perception to infectious disease threats particularly among medical students is important to assist improving educational programs.

OBJECTIVE:

This study aimed to assess students' knowledge of the pandemic H1N1 influenza.

PATIENTS AND METHODS:

A cross-sectional study was conducted among medical students of Al-Nahrain Medical College in Baghdad during February 2010. The data were collected through a self-administered anonymous questionnaire and results were analyzed using SPSS version 16.

RESULTS:

A total of 217 medical students participated in this study with a mean age of 21.1 (\pm 1.7). Overall, the mean score of students' knowledge was 69.95 (\pm 17.7) degrees. The main source of knowledge of these students (37.8%) was from the mass media. Significantly females, fourth grade, passed the last semester exams, and having educational activity dealt with swine flu scored higher.

CONCLUSION:

The awareness regarding pandemic H1N1 infection was adequate among the students regarding causative agent, disease transmission, symptoms, control and preventive measures, vaccination, and treatment. This result can be attributed to the immediate training given to these students as well as to the mass media campaign which is important in pandemic situations to avoid its spread and complications

KEY WORDS: Pandemic H1N1, swine flu, influenza awareness, student knowledge.

INTRODUCTION:

(H1N1) virus is an influenza virus that had never been identified as a cause of infections in people before the current H1N1 pandemic. After early outbreaks in North America in April 2009 the new strain of influenza virus -A/H1N1 spread rapidly around the world. By the time WHO declared a pandemic in June 2009, a total of 74 countries and territories had reported laboratory confirmed infections^(1,2) To date, most countries in the world have confirmed infections from the new virus. Since August 2010 WHO announced that the H1N1 influenza virus has moved into the post-pandemic period. However, localized outbreaks of various magnitudes are likely to continue⁽³⁾ In February 2010, Iraq have reported 2880 confirmed cases of Influenza A H1N1 including 42 deaths⁽⁴⁾, but since the beginning of 2009 Iraqi Ministry of Health updated the pandemic Influenza preparedness strategies and the operational plans of action were developed. Of these actions health

education activities including posters, leaflets and subtitles in many Iraqi TV channels have been conducted. Also all WHO guidelines related to case management, laboratory diagnosis, and infection control have been distributed to all concerned.⁽⁵⁾

As medical students have more contact with diseased people, it is deemed necessary for a student to be well-aware of the outbreak of infectious disease, its transmission routes, methods of prevention and its vaccination.

For this, the present study was conducted to assess the degree of awareness and knowledge of medical students regarding swine flu as an attempt to pinpoint knowledge gaps which may be utilized in developing educational programs to increase their awareness.

Methodology:

A cross-sectional survey was conducted among a sample of students of the Collage of Medicine of Al-Nahrain University during February 2010. Al-Nahrain College of Medicine was established in

Department of Community and Family Medicine,
College of Medicine, Al-Nahrain University,
Baghdad, Iraq.

1987 as the third college of medicine in the capital Baghdad.

At the time of study, there were 478 students registered at Al-Nahrain College of Medicine from the first grade to sixth. 50% of all the students were recruited for this study using systemic random sampling by choosing every other student from the list of students' names starting by odd number after tossing a coin. Verbal informed consent was taken before administration of the questionnaire and the nature of the study and the right to withdraw was fully explained to the participants. Strict confidentiality was ensured.

Data were collected by a self-administered written survey. The questionnaire was developed by the author based on relevant literature and included ten multiple choice questions regarding causative agent, risk groups, mode of transmission, symptoms, ways to confirm diagnosis, control measures against infection, prevention of transmission, dosing of the vaccine and timing of antiviral administration.

Each question was followed by three choices and all participants were asked to choose only one respond for each statement. A scoring system was applied to assess the level of knowledge of each subject. Each item was scored with 1 for correct and 0 for incorrect answer respectively, and the third option was "don't know" if the student had no information about the subject to avoid guessing the answer. The total score was 10 degrees which was then multiplied by 10 to obtain 100 percent scores. Levels of knowledge were categorized as "poor: 0-40%", "fair: 41-60%", "good: 61-80%", and "very good: 81-100%".

The age, sex and the grade of the students, their achievement during the last semester, having a special educational activity regarding H1N1, and the source of their knowledge were obtained also.

Data entry and analysis were performed using SPSS for windows version 16.0 (SPSS Inc., Chicago, IL, USA, 2007). Data were presented as frequencies, relative percentages, means, standard deviation (SD), and range. Analysis of variance (ANOVA) and Student's t- test was used to compare the differences in means whenever applicable. Statistical significance of results was judged at the 5% level.

RESULTS:

A self-administered anonymous survey was distributed to 239 students, 217 have completed the questionnaire with a respond rate of 90.8%. Among the participants, females were more than males (male: female ratio was 1:1.4), the mean \pm SD of their ages was 21.08 ± 1.7 years. More than half (55.7%) of the students were from the first three

grades (basic science), and about three quarters of them (73.7%) succeeded to pass the last semester examinations.

In general, results of the study showed that the students interviewed had good knowledge and perception regarding swine flu with mean \pm SD scores of 69.95 ± 17.7 degrees ranged between 20.0 and 100.0 with 70.0 degrees median and only one third of the students scored poor to fair degrees (8.8% and 26.3%) respectively.

Precisely students had very good knowledge and perception regarding the causative agent, mode of transmission, the presence of swine flu outbreak in Iraq, and the control measures of the infection, while they had good knowledge regarding the main symptom of the disease, the risk groups, best way to prevent the transmission of the virus, dosing of vaccine, and the best time for prescribing antivirus drug. Only for the best way to confirm the diagnosis, the students had fair knowledge (Table 1) The main source of knowledge of these students (37.8%) was from the mass media (radio, television, and newspapers) and more than a quarter (26.7%) of them reported that having lectures and educational activities in the college about the subject was their main source of knowledge.

Significantly females, students from the fourth grade, those who passed the last semester examinations, those having educational activity dealt with swine flu, and those obtained their information from official lectures in the college scored higher (Table 2).

DISCUSSION:

Understanding the perception to infectious disease threats would assist health agencies to pinpoint knowledge gaps which may be utilized in developing educational programs to increase the awareness of medical students. This study was performed during the pandemic peak season of novel influenza A (H1N1) among a sample of students from one of the most respectable schools of medicine in Iraq. This sample was selected because medical students are relatively risk group population as they are exposed to have more contact with diseased people, leading to increased susceptibility for contracting an infectious disease from one point of view, and they are well health oriented cohort through whom one can detect the weak as well as the strong points of the health education messages conducted both for the general population and for the medical staff regarding this subject from another point of view.

Several studies tried to identify the awareness, knowledge, attitudes and practices (KAP) of the general population or college students regarding

swine flu^(6,15) but less studies regarding KAP of H1N1 among medical students.^(16,18)

This study showed that the medical students interviewed demonstrated good knowledge about influenza A (H1N1) infection, a finding inconsistent with that reported from medical students' survey in Pakistan,⁽¹⁷⁾ and health care workers surveys in Nigeria whom reported incomplete knowledge of the studied sample⁽⁶⁾

Vast majority of the participants of the present study identified the disease correctly as a viral disease, a similar finding reported from Pakistan⁽¹⁷⁾ but not from the Nigerian survey⁽⁶⁾ Also the majority knew that H1N1 outbreak is likely present in Iraq, and air born droplets is the mode of transmission of the infection with only 7.8% of the students had misconception of being transmitted by food and water intake. These findings agreed with those found from Pakistan⁽¹⁷⁾ and Turkey⁽¹⁶⁾ but not with Chinese telephone survey⁽⁷⁾

More than three quarters of participants (77.4%) reported that keeping good hygiene (washing hands with water and soap and covering the nose and mouth during sneezing and coughing) is the best method of control transmission of infection compared to 17.1% reported taking prophylactic drug for control, while 95.5% of participants from Turkey⁽¹⁶⁾ knew washing hands, 87.9% from Nigeria⁽⁶⁾ reported washing hands, and 65.6% from Pakistan⁽¹⁷⁾ rated covering the nose and mouth as the best method of control infection spread.

Fever identified correctly as the main symptom of infected victim by two thirds (67.7%) of the students, a symptom reported by 72.5% of Pakistani students⁽¹⁷⁾ 83% of Nigerian health workers⁽⁶⁾ and 96.1% of Turkish students⁽¹⁶⁾ However, only half of the students knew that performing laboratory tests is the way to confirm the diagnosis of H1N1 influenza, and 42.9% convinced that signs and symptoms alone can confirm the diagnosis. Also about two thirds of them (64.5%) rated vaccination with a pandemic vaccine as more effective than wearing a face mask for the prevention of getting the infection, a finding reported also from a survey from Sydney⁽¹³⁾ while Kamate et al. from India and Khowaja et al. from Pakistan reported that the respondents in their studies considered covering the nose and mouth with face masks as the most effective preventive measure^(14,17)

The last two questions need good clinical information to be answered correctly that's why relatively higher percent of students mostly from the first three grades did not answer them (38.7% for doses of vaccine intake and 23.5% for the timing of administration of Oseltamivir –Tamiflu-).

However, 65.4% and 71.7% of the students whom answered the questions knew correctly that H1N1 vaccine is given in a single dose and Oseltamivir should be given within 48 hours of the appearance of symptoms respectively. This disagreed with the Pakistani study as 51.3% of the participants reported that there is no treatment available and 37.9% participants said that infected persons with pdmH1N1 cannot be treated.⁽¹⁷⁾

Female participants scored significantly higher than males in the present study and this may be explained either by females took more precautionary behaviours for infectious diseases and for this they may gain more knowledge, or female participants of this study were more intelligent than males as they significantly passed the exams of the last semester more than males (65% versus 35% and P=0.001)

A significant better knowledge was also found among fourth year students and this can be explained as students of Al-Nahrain college of Medicine gain their medical education through a 6-years curriculum distributed into two semesters each year, with basic sciences courses are given in the first 5 semesters and the remaining with clinical courses and specifically a course in respiratory diseases is given for fourth year students that may contribute for their better knowledge concerning swine flu and this is supported by the presence of a very high significant relation between students' reporting of having educational activity and their grade (P =0.000001).

Although more than a third of the participants reported that their main source of knowledge regarding swine flu was from mass media, a finding consistent with the study conducted by Kamate et al.⁽¹⁴⁾ by James Rubin et al.⁽¹⁵⁾, and Khowaja et al.⁽¹⁷⁾ but information obtained from official lectures tend to be more accurate and complete as students scored higher than other sources. However, these findings indicated that the health education campaign about this pandemic was relatively good for both health workers and general population.

Study Limitations:

Our survey is limited by measuring a specific population view (from one college) at a specific point in time instead of studying different parts of the society in different periods and therefore their awareness reflects the information available at the time of the problem, also the study is further limited by the cross-sectional study design, which prevents the identification of any causal relationships, even though associations between the

variables and reverse cause-effect relationships may exist. Despite these limitations, to the best of our knowledge, this is the first study from Iraq that

focuses on understanding the awareness of a cohort of people considered highly educated toward a pandemic threat.

Table 1: Knowledge of participants regarding H1N1 influenza information

Items asked about	No. answered	% answered (no.217)	% answered correctly	Mean ± SD (degrees)
Causative agent	214	98.6	99.1	0.99±0.10
Presence of H1N1 outbreak in Iraq	210	96.8	97.1	0.97±0.17
Mode of transmission	211	97.2	91.9	0.92±0.27
Control transmission of infection	205	94.5	81.9	0.82±0.39
Main Symptom	199	91.7	73.9	0.74±0.44
Risk group	199	91.7	68.3	0.69±0.46
Way for confirmation of diagnosis	203	93.5	54.2	0.54±0.49
Prevention measure	209	96.3	66.9	0.67±0.47
Dose of vaccine	133	61.3	65.4	0.65±0.48
Timing of giving antiviral drug	166	76.5	71.7	0.72±0.45

Table 2: Differences in knowledge scores according to participants characteristics

Variable	No	%	Mean ± Std Dev	Significance
Sex				
• Male	90	41.5	65.33 ± 19.6	t = 3.321 P = 0.001
• Female	127	58.5	73.23 ± 15.4	
Grade				F = 7.744 P = 0.0001
• First	25	11.5	59.20 ± 18.5	
• Second	51	23.5	62.35 ± 17.3	
• Third	45	20.7	70.89 ± 17.8	
• Fourth	32	14.7	79.38 ± 11.3	
• Fifth	34	15.7	73.24 ± 16.6	
• Sixth	30	13.8	76.67 ± 15.2	
Last semester achievement				t = 2.27 P = 0.024
• Passed	160	73.7	71.56 ± 16.1	
• Failed	57	26.3	65.43 ± 21.1	
Having educational activity				t = 3.69 P = 0.0001
• Yes	98	45.2	74.69 ± 16.6	
• No	119	54.8	66.05 ± 17.6	
Source of Information				F = 6.436 P = 0.0001
• Posters, leaflets, and brochures	18	8.3	56.67 ± 17.8	
• Heard about it from others	23	10.6	69.13 ± 19.3	
• Internet	36	16.6	74.17 ± 16.8	
• Lectures and educational activities	58	26.7	76.55 ± 15.7	
• Mass Media	82	37.8	66.59 ± 16.6	

CONCLUSION:

The awareness regarding pandemic H1N1 infection was adequate among the students participated in this study and this can be attributed to the immediate training given to these students as well as to the mass media campaign which is important in pandemic situations to avoid its spread and complications.

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