



An educational interventional study to sensitise and educate medical students of Gandhi Medical College Bhopal regarding H1N1 (Swine flu) disease and its prevention

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Abstract

Background: H1N1 is pandemic today and our country and state are also being affected by this disease. This disease spreads through respiratory tract (coughing and sneezing). Medical students remain at a higher risk of acquiring the disease. So this study was conducted to educate and sensitize the medical students regarding the spread of the disease and its prevention that will help indirectly to reduce panic, morbidity and mortality regarding this disease.

Objectives: (1) to assess knowledge of study subjects regarding H1N1 spread and prevention. (2) To educate the study subjects on H1N1 disease and its prevention. (3) To assess the knowledge of study subjects after educational intervention.

Material and Methods: This was a cross sectional study, carried out during October-December 2017 among, 227 medical under graduate students of Gandhi Medical College Bhopal. MS Excel and Epi info version 6 was used for statistical analysis. Study population was interviewed through pre-tested and pre-designed questionnaire and intervention in the form of Audio visual presentations was given.

Results: Out of 227 students who took part in the study, 91.9% were aware of the causative agent of swine flu and it rise up to 99.1% post intervention. 67% of the participants were aware of the transmission of the disease and 43% were aware of the symptoms.

Conclusion: The present study shows the need for medical students to have accurate and adequate information about communicable diseases like swine flu. The study revealed that the knowledge on this is average and suboptimal in few aspects like symptomatology.

Keywords: H1N1, medical students, communicable diseases, swine flu

Introduction

Swine influenza is a highly contagious respiratory disease, which has become a major public health problem in the world. Swine flu is caused by a strain of the influenza type virus known as H1N1, officially referred as novel A/H1N1. Swine influenza was first proposed to be a disease related to human influenza during the 1918 flu pandemic, which was known as Spanish flu (infected about 500 million people and caused approximately 50 million deaths). Since then there have been many outbreaks, and the most recent one in April 2009 was with a new strain of virus. On 11 June 2009, the World Health Organization (WHO) raised its pandemic alert to the highest level (India) [1]. It results in nasal secretions, cough, body ache, chills, diarrhea, vomiting and listless behavior. Swine flu virus targets the respiratory cell and damages lining of the respiratory tract, leading to swelling and inflammation. The virus has the higher reproduction and fatality ratio than other seasonal influenza. H1N1 virus possesses the property to change by antigenic shift and antigenic drifts. The modes of transmission of virus are coughing, sneezing and having contact with infected surfaces and objects. The signs and symptoms are similar to those of seasonal influenza while severity in swine flu is more than seasonal influenza. Elderly

people, infants and immune compromised patients, pregnant women and health care personnel, who have direct contact with patients or infectious materials, have higher risk for complications of influenza. Various safety measures like, focusing on personal hygiene, maintaining distance with swine flu patients, covering mouth while sneezing and coughing, wearing mask while heading toward public, maintaining isolated ward for the infected person could be applied for reducing the risk of transmission of disease. Identification of disease is based on clinical symptoms and confirmation is done by various laboratory tests using PCR based kits. Although, vaccines and antiviral drugs are available for different strain of swine flu, they are under research phase for new strain having high safety profile. H1N1 is pandemic today and our country and state are also being affected by this disease. Medical students remain at a higher risk of acquiring the disease. Students on campus are at increased risk for infectious diseases including influenza because of the relatively crowded study and living environment. College students have high mobility between campus and community, and thus their behavior on influenza prevention and control matters to their own health as well as the wellbeing of the community. Medical students are future

health workers, whose behavior will affect the health of their patients. So this study is being conducted to educate and sensitize the medical students regarding the spread of the disease and its prevention, which will help indirectly to reduce panic, morbidity and mortality regarding this disease and to build a better health cadre for the future (China) [2].

Objectives

- To assess Knowledge of medical students regarding H1N1 disease and its prevention.
- To educate the study subjects on H1N1 disease and its prevention.
- To assess the knowledge of study subjects after educational intervention.

Methodology

This study was a cross sectional observational study, carried out during the period of September-December 2017 at Gandhi Medical College and Hamidia Hospital Bhopal Madhya Pradesh, India. The study was conducted after approval from the Institutional Ethics Committee. A predesigned and pre tested, multiple choice questionnaire was used to conduct this study. A total 227 (2nd Professional, Pre-Final & Final year students of Gandhi Medical College and Hamidia Hospital, Bhopal) participants were included in this study. Written

informed consent of the participants was taken and those students who were voluntarily willing to participate had been included in the study. Partially filled forms were excluded. All the selected participants were asked to solve the pre-designed and pre tested questionnaire based on knowledge, attitude and practice regarding swine flu vaccine which took approximately 20 minutes to solve all these questions. Audio and Visual Presentations and Lectures were organised to increase the awareness of students regarding symptomatology, treatment and prevention of H1N1. A post interventional assessment was conducted 2 months after the intervention to assess the variation in knowledge, attitude and practices among the students. Data was collected using MS Excel and analysed using Epi info version 7.

Results

Out of 227 medical students participated in the study, 115 (50.66%) belonged to Third Professional MBBS and the rest 112 (49.34%) belonged to second professional MBBS. There were 131(57.70%) males and 96(42.30%) females participated in this study. 37 % of medical students were aware about the occurrence of pandemic, while 19.38% of the students were aware of the disease load of swine flu in India. 91.19 % knows about the causative agents of swine flu.

Table 1: Knowledge regarding Causative agent, transmission and Clinical symptomatology of H1N1 Influenza

S. No.	Questions	Responses		% increase after intervention
		Pre-intervention n=227 (%)	Post-Intervention n=227 (%)	
1	What is the causative agent for Swine flu?	207 (91.19)	225(99.1)	7.91
2	Will eating pork cause Swine flu?	84 (37)	210 (92.5)	55.5
3	Swine flu is transmitted by?	153 (67.4)	215 (94.7)	27.3
4	Symptoms of Swine flu are	98 (43.17)	204 (89.86)	46.69
5	Red flag sign is seen in	86 (37.89)	181 (79.73)	41.84
6	What is the incubation period of organism causing Swine flu?	120(52.86)	211(92.95)	40.09
7	What specimen should you collect in case of Swine flu?	173(76.21)	220(96.91)	20.7
8	In which year swine flu was 1st declared as a pandemic?	84(37)	217(95.5)	58.5
9	In which state Maximum cases of Swine flu are detected in the year 2017?	44(19.38)	207(91.18)	71.8

Above table shows the distribution of medical students according to their knowledge regarding causative agent, transmission, clinical symptomatology of H1N1 influenza, before and after educational intervention. The causative agent was rightly mentioned by 91.19% of the medical students and

this number rise to 99.1 % after educational intervention. Marked improvement in knowledge was seen in facts related to modes of transmission and symptomatology. The knowledge regarding symptoms of H1N1 showed a marked improvement from 43.17% to 89.86% following intervention.

Table 2: Knowledge regarding vaccination against swine flu

S No	Questions	Responses		% increase after intervention
		Pre-intervention n=227 (%)	Post-Intervention n=227 (%)	
1	Is there any vaccine available for swine flu?	98(43.17)	227 (100%)	56.83.51
2	What is the cause of ineffectiveness of swine flu vaccine?	57 (25.11)	225 (99.11)	74
3	A single vaccine protects against Swine flu for what period of time?	91 (40.09)	222 (97.79)	57.7
4	Which drug is used for treatment of Swine flu?	158 (69.60)	224 (98.67)	29.07

Above table shows the distribution of medical students according to their knowledge regarding swine flu vaccination, before and after educational intervention. 98(43.17%) of the students were aware of the availability of vaccines against H1N1 and the number increased to 100% post intervention.

Majority of the students were not aware of the cause of ineffectiveness of vaccine and the duration of protection by the vaccine, during the pre-interventional survey, which later improved to be around 99%.

Table 3: Knowledge and awareness regarding preventive measures against H1N1 influenza

S No	Questions	Responses		% increase after intervention
		Pre-intervention n=227 (%)	Post-Intervention n=227 (%)	
1	Which type of mask is considered the best for protection against Swine flu?	127(55.95)	214 (94.27)	38.32
2	Simple steps taken by a person to prevent swine flu during its outbreak?	147(64.76)	207(90.98)	26.22
3	What precautions would you like to take to protect yourself from swine flu as a medical personnel	100 (44.28)	187 (82.34)	38.06
4	To whom would you like to suggest to get vaccinated against swine flu	84(37.06)	166 (73.30)	36.23
5	Would you like to get vaccinated against swine flu in the near future?	106(46.7)	198(87.22)	40.52
6	To whom would you like to suggest to get vaccinated against swine flu	84 (37.06)	166(73.30)	36.23
7	As a responsible medical student, what preventive measures would you like to suggest to patients and their relatives during an outbreak of swine flu	92 (40.6)	169(74.25)	33.64

This table shows the distribution of medical students on their knowledge regarding preventive measures available against H1N1 influenza. Significant improvement in knowledge regarding type of mask to be used and simple preventive measures to be taken was seen post intervention.

Discussion

The new variant of Pandemic H1N1 Influenza has been a serious threat for world communities likewise in India and even in our state Madhya Pradesh. Understanding the perception to this infectious disease is crucial since innumerable cases were reported in Southeast Asia. We conducted the study among 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. In our study awareness of medical students about occurrence of swine flu pandemic was 37% which was less as compared to the study done on interns 98.3% by Sharma *et al.* [3] In this study 43.7 % medical students were knowing about availability of swine flu vaccine which was very less when compared to the study conducted on dentist in Andhra Pradesh (82.3%) [4]. The knowledge of causative agent of swine flu was found to be 91.19% in our study pre intervention, which was almost same as that of a study conducted by Fariha Hassan *et al* in medical and dental students of Karachi [5], where they found the awareness to be around 87.5%. In the present study 37% of the students, had myth that eating uncooked or semi cooked pork can transmit this disease whereas at Patiala [6] 40.6% and 60.1% of the interns at Index Medical College Indore had the same feeling. The causative agent of the swine flu was rightly known by 91.1% of the students and modes of transmission by 67.4% of the students, while in a study conducted by Atheer *et al* in medical students of Iraq, the knowledge regarding causative and transmission was found to be 99.1% and 97.2% respectively [7]. The correct knowledge regarding symptomatology of H1N1 was seen 43.1% of the subjects in our students, which was almost similar to the findings in the study conducted at Valsad Gujarat by Hinal Govindbhai Baria [8] among college students, ie 57.03%. The knowledge of the drug to be used was found to be 69.6% in our study, which was better than the findings,

48.5%, of the study at Valsad among college students. In our study, 55.95 % mention use of face mask as a way of prevention from swine flu whereas hand washing which is a very effective way to prevent swine flu transmission was known only to 44.28 %. These findings are comparable to the findings of other study conducted by Singh B *et al.* [9] The alarming condition was that medical students in the present study, had no adequate source of information regarding this infection, which later showed a positive improvement after our intervention. Students had moderate awareness respecting route and mode of transmission, treatment, test and vaccine availability. Respondents manifested poor information concerning symptoms and spread of infection. The strength of study lies in the fact that it is first of its kind to be conducted among UG students of medical colleges in MP. One of the limitations of the study is that it was conducted amongst a particular population in a specified period of time when MP was not being struck by pandemic H1N1 Influenza. Therefore, its results cannot be generalized nor can be representative of other medical colleges. This study 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.

Conclusion

The results of the study portray that medical students' knowledge is not sufficient regarding transmission and management of pandemic H1N1 Influenza, which can be attributed to inadequacy of health authorities and mass media. 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 state and country to build up the confidence of medical students whose active participation may play a significant role in containing this agent. Infection control guidelines should be included in more depth in syllabus of students.

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