Research Article

ASSESSMENT OF KNOWLEDGE, ATTITUDE AND BELIEFS ABOUT H1N1 INFLUENZA AND ITS VACCINATION AMONG MBBS STUDENTS IN A TERTIARY CARE HOSPITAL: A CROSS SECTIONAL STUDY

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ABSTRACT

Introduction: Influenza is highly contagious, acute febrile respiratory illness caused by influenza A and B viruses. Because of very large number of influenza patients health care personnel are at constant risk of getting exposed to this viral infection and its associated complications. Aim of the study was to assess the knowledge, attitude and beliefs about influenza among the medical students of Indira Gandhi Medical College, Shimla.

Methodology: We conducted a cross sectional study including MBBS students from first to final professional years using self-administered structured questionnaire. The questionnaire contained questions related to motivation, perception and health care practices regarding H1N1 influenza and its vaccination. Data was analyzed using SPSS v.20

Results: Out of 226 responders, 26%(95% CI 20.51-32.34%), and 66% (95% CI 59.35-72.08%) students had poor and good knowledge about H1N1 influenza respectively. 41% of the participants were not aware about the influenza vaccination. Reasons for not getting vaccinated cited were not sure about its use (22%), not sure about its efficacy (24%) and unawareness of its side-effects (12%).

Conclusion: Knowledge on Influenza and its vaccination among medical students is good in IGMC Shimla. Unfamiliarity towards vaccine i.e. availability, misperceptions about effectiveness, fear of adverse effects and indifference to being-at-risk were found in current study. Multifaceted, adaptable measures are needed to be invoked urgently.

INTRODUCTION

Influenza is a highly contagious, acute febrile respiratory illness caused by influenza A and B viruses.[1] These viruses cause annual or near annual epidemics of febrile respiratory disease in regions with moderate climates, and less regular epidemics in the tropics. Influenza viruses infect people of all age groups.[2] Common symptoms of influenza include fever, chills, cough, headache, muscle aches, tiredness, vomiting, and diarrhea.[3]

Because of the very large number of influenza infections and their associated complications, the public health impact of influenza is considerable.[1] Different types of Influenza viruses i.e. Infuenza A (H1N1), A (H3N2), and B, all are currently circulating worldwide. In communities, influenza cases often appear first among the school-age children, who generally have the highest attack rates.

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underlying medical conditions.[1] The types A and B Influenza viruses cause significant disease among humans. Type A causes severe disease. It affects not only humans but also animals including birds (poultry) and result in epidemics and even pandemics, because of frequent antigenic variations (changes).[12] During the time period from 13th November 2017 to 26th November 2017 the WHO GISRS laboratories tested more than 113,412 specimens. 8,982 were positive for influenza viruses, of which 5,617 (62.5%) were typed as influenza A and 3,365 (37.5%) as influenza B.[4]. So far Influenza A (Swine Flu/ H1N1) has caused 18,172 mortalities globally. India ranks as 3rd most affected countries for cases and deaths of Swine Flu globally.[5] The highest number of swine flu deaths took place in 2011 (1,763), followed by 2009 (981) and 2012 (405).[6]. Knowledge, attitude and practice (KAP) of people regarding swine flu are a cornerstone in prevention of virus spread and outbreak.

The aim of the study was to assess the knowledge, attitude and beliefs amongst the medical students of Indira Gandhi Medical College (IGMC) Shimla(HP). This will help in assessing the

KAP-GAP and sensitize them regarding the different aspects of Influenza as they are the future doctors who will be representing the community.

METHODOLOGY

We conducted an observational cross sectional study among the medical students of first to final professional years. The study was carried out from 1st October, 2017 through 15th November, 2017 at Indira Gandhi Medical College, Shimla. Using the overall prevalence of knowledge on influenza among the medical students in India as 50%, our sample size came out to be 216 after considering a confidence level of 95%, and an absolute error (a) of 5% using OpenEpi version 3. Considering an attrition rate of 5%, the final sample size came out to be 226.

We used a multistage sampling technique. In the first stage we stratified the study participants on the basis of the professional years i.e. First, Second, Prefinal and Final year. In the second stage we randomized the study participants using simple random sampling technique proportionate to each year. A structured, self administered, self designed questionnaire was used to assess the knowledge, attitude and beliefs regarding H1N1 Influenza and its vaccination. Students who responded to more than 50% questions were included as a part of our study. Those who were detained, appearing for the examinations or not willing to participate were excluded from the study.

Statistical Analysis: The data was collected, entered and cleaned using Microsoft Excel. Further analysis was done using SPSS version 20.0. The percentages and proportions were calculated for qualitative variables. Mean scores and standard deviation of the participants were compared according to different variables using student t-test and ANOVA. A p-value of less than 0.05 was considered to be statistically significant.

Ethical Justification: The study was carried out after obtaining prior permission from the institutional ethical committee, IGMC Shimla and a written informed consent was taken from the study participants after explaining them about the purpose of our study. After the study was complete, the study participants were informed regarding Influenza, its clinical features and complications, and the availability of the vaccines.

Table 1 Demographic distribution of study participants (n-226)

	Male (n-113)	Female (n-113)
Age Groups		
15-19 years (n-87)	45 (51.7%)	42 (48.3%)
20-24 years (n-139)	68 (48.9%)	71 (51.1%)
Professional year		
1st (n-62)	39 (62.9%)	23 (37.1%)
2nd (n-59)	25 (42.4%)	34 (57.6%)
3rd (n-42)	19 (45.2%)	23 (54.7%)
4th (n-63)	30 (47.6%)	33 (52.4%)
Staying with		
Family (n-29)	15 (51.7%)	14 (48.3%)
Hostel (n-170)	73 (42.9%)	97 (57.1%)
Paying guest (n-27)	25 (92.6%)	2 (7.4%)
Socioeconomic status		
Class I (n-77)	34 (44.2%)	43 (55.8%)
Class II (n-130)	68 (52.3%)	62 (47.7%)
Class III (n-17)	9 (52.9%)	8 (47.1%)
Class IV (n-2)	2 (100%)	0

RESULTS

There were total 300 participants out of which 226 had completed the questionnaire. There were 113 males (50%) A majority of the participants belong to the age group of 20 years and above, most of which were found to be living in the hostels [Table1]. Most of the study participants had obtained the information about H1N1 Influenza from their textbooks followed by internet and other sources such as friends, magazines etc [Figure 1].
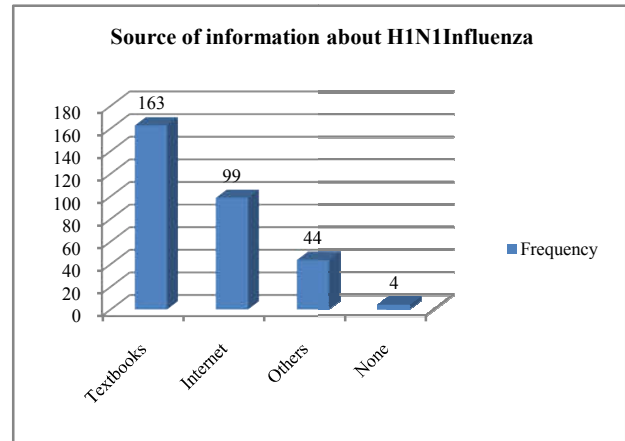
Figure 1 Source of information about H1N1 Influenza.

Table 2 shows the grading of knowledge among the study participants on influenza where most of the students were found to have good knowledge (66%).

Table 2 Grading of Knowledge regarding H1N1 Influenza

Grade	Frequency	%age	95% CI
Poor	59	26.11%	20.51-32.34%
Good	149	65.93%	59.35-72.08%
Excellent	18	7.96%	4.79-12.30%

Table 3 Mean Knowledge Score of study participants in relation to different variables

	Mean Score	Standard deviation	p-value
Age Groups			
15-19 years (n-87)	11.18	3.19	**<0.01**
20-24 years (n-139)	13.31	3.46	
Gender			0.22
Male (n-113)	12.20	3.76	
Female (n-113)	12.78	3.24	
Professional year			
1st (n-62)	10.82	2.45	
2nd (n-59)	11.75	3.53	**<0.01**
3rd (n-42)	12.71	3.86	
4th (n-63)	14.68	3.01	
Staying with			
Family (n-29)	13.00	3.59	
Hostel (n-170)	12.71	3.54	**0.008**
Paying guest (n-27)	10.56	2.60	
Socio-economic status			
Class I (n-77)	12.32	3.63	
Class II (n-130)	12.72	3.51	0.29
Class III (n-17)	11.94	2.94	
Class IV (n-2)	8.50	2.12	

The mean knowledge score was 12.49 (SD 3.1) out of a total score of 25 which was found to be statistically significant with increase in age, progression into the higher professional year and also for those study participants who stayed in the hostel, as depicted in Table 3.

Out of 226 respondents, 131(58%) agreed that Influenza is a public health problem. 172 (71%) out of 226 respondents were not aware of the availability of the facilities for the diagnosis and treatment of Influenza available in their college. We divided the score of the participants as poor (Score<10) and good (score>10). Table 4 shows the grading of scores according to different variables. Twenty nine percent of the respondents had poor knowledge regarding H1N1 Influenza and its vaccines.

Table 4 Knowledge of study participants regarding H Influenza and its vaccine

	Poor	Good	p value
Age Groups			
15-19 years (n-87)	39(45%)	48 (55%)	<0.001
20-24 years (n-139)	27 (19%)	112(81%)	
Gender			
Male (n-113)	39 (35%)	74(65%)	0.07
Female (n-113)	27 (24%)	86 (76%)	
Professional year			
1st (n-62)	28 (45%)	34 (55%)	
2nd (n-59)	23 (39%)	36 (61%)	<0.001
3rd (n-42)	11 (26%)	31 (74%)	
4th (n-63)	4 (6%)	59 (94%)	

In our study we found that 176 (78%) participants believed that Influenza can be fatal and can be prevented. For prevention of influenza, 75% (n=171) responded that washing hands could be beneficial followed by wearing masks (n=142) at the time of outbreak followed by vaccination (n=137). 89% participants mentioned that low awareness levels among the general population was the main reason for not getting vaccinated. Most of the participants responded that educating the health care providers (n=121) and strengthening the vaccination program (n=176) can play an important role to encourage vaccination among the general population (Table 5).

Table 5 Attitude of study participants regarding H1N1 Influenza

QUESTIONS	YES (%)	NO (%)
Influenza can be prevented by		
Washing hands	171 (75.7%)	55 (24.3%)
Wearing surgical mask	142 (62.8%)	84 (37.2%)
Yearly vaccination	137 (60.6%)	89 (39.4%)
Drinking more fluids	41 (18.1%)	185 (81.9%)
Avoiding rain	35(18.5%)	191 (84.5%)
Wearing clothes covering whole body	16 (6.9%)	210 (92.9%)
Who do you think is at greater risk?		
Young children	97 (42.9%)	129 (57.1%)
Elderly	60 (26.5%)	166 (73.5%)
Immuno-compromised	159 (70.4%)	67 (29.6%)
Frequent traveller	79 (35%)	147 (65%)
Individual with chronic illness	71 (31.4%)	155 (68.6%)
Everybody	48 (21.2%)	178 (78.8%)
Factors that may affect the vaccine use among patients		
Awareness level of patients	201 (88.9%)	25 (11.1%)
Income of the patients	51 (22.6%)	175 (77.4%)
Education of the patients	73 (32.3%)	153 (67.7%)
Cheaper vaccine	104 (46%)	122 (54%)
Educating health care providers	121 (53.5%)	105 (46.5%)
Vaccination program	176 (77.9%)	50 (22.1%)

DISCUSSION

The results of present study give us an understanding regarding the knowledge, attitude and beliefs towards Influenza A/ H1N1 infection among the medical students. This information will help us to provide support to the health sector authorities in developing strategies and health education advocacy towards fulfilling the lacunae pertaining to H1N1 infection.

In our study we found that the majority of the participants had good knowledge regarding H1N1 Influenza as compared to the study done by Singh *et al*(2012) among the dental professionals in Udaipur, India.[7] The mean score progressively increased with increase in the age as well as promotion to the higher professional year of MBBS. Possible reason could be the increase in their exposure with the progression of the professional years of their MBBS, ranging from the non-clinical to the clinical aspects of the disease, hence making them proficient to understand the nature of the disease.

The knowledge was, however, not statistically significant based on gender and socio-economic status in contrast to the study conducted by Kaipa *et al*(2011).[8]

More than 70% of the study participants thought that the spread of H1N1 Influenza infection can be prevented by maintaining personal hygiene such as handwashing by proper technique, where as wearing a surgical mask, undergoing vaccination for swine flu and isolation were less preventive methods cited by the study participants. The results are in concordance with a systematic review conducted by Gambhir *et al*(2016).[9]

A major proportion (89%) of the students mentioned the possible reason for the low vaccine coverage as low levels of awareness. Awareness can be increased through IEC/ IPC (Information Education and Communication / Inter Personal Communication) activities, educating the health care providers and strengthening the vaccination program.

A study by Sharma *et al*(2014) among interns shows that symptoms of H1N1 were known to only half of the interns which is very less compared to the results of our study where more than 50% of the study participants knew about the symptoms of the infection.[10]

A study conducted by Dutta *et al*(2011) among paramedical workers in Puducherry shows that 91 % percent of the workers knew about the mode of transmission of H1N1which is more than that what we found in our study.[11]

CONCLUSION

Knowledge about Influenza and its vaccination among medical students is good in IGMC Shimla, yet there were notable deficiencies regarding the transmission, preventive measures and availability of vaccine.Poor knowledge / misperceptions about vaccine effectiveness, fear of adverse effects and indifference to being-at-risk were important findings in the current study.

Multifaceted, adaptable measures need to be invoked urgently to increase the knowledge among the medical students. The present study lays emphasis on the need for appropriate

training regarding infectious diseases during the undergraduate medical curriculum, and continuous medical education programs and workshops thereafter.

Limitations

Our study was limited to the medical students of I.G.M.C Shimla and they may not represent all the medical students of India. Although the study participants were counseled before the beginning of our study, there could be a possibility of some information bias.

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