

CAN GOOD KAP AMONGST SCHOOL TEACHERS PREVENT H1N1 INFLUENZA? A BEGINNING.Avtar Singh Bansal¹, R.K. Gupta², Rajshree R Gupta³**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: BACKGROUND: Pune served as hub of H1N1 and recorded maximum deaths in India during 2009 pandemic. Teachers form important part of society which can greatly influence population. **AIM:** To study knowledge, attitude and practices on H1N1 amongst school teachers in Pune. Study endeavors to bring forth positive practices, which besides benefitting teachers would also translate into disseminating knowledge to students and families, resulting in maximum benefit to society. **SETTINGS AND DESIGN:** Cross sectional, KAP study amongst school teachers taken was undertaken **METHODS:** A questionnaire based, cross sectional KAP study was undertaken on 96 teachers from a public school in Pune during June-September 2010. Epi Info version – 2006 was used for data analysis. **RESULTS:** While most were well aware of H1N1 basics, 40% didn't know danger signs/ complications. Knowledge on prevention demanded attention. 45% believed that H1N1 isn't a big problem. About 1/3rd couldn't appreciate importance of isolation or use of mask. Only 64.6% would stay home on having flu. One fifth believed in wearing mask at workplace and about half in keeping distance of 1m from patients. About 60% didn't believe in avoiding crowded places. 15% won't wash hands. About 17% wouldn't stay home or visit doctor if suffering from cold. Half would not take medicines. **CONCLUSION:** Fact that 'good' knowledge dwindled to 'fair' attitudes, which in turn didn't translate into desirable robust practices, is alarming. Efforts must be directed towards enhancing knowledge, improving attitudes and imparting behavior changes for desirable practices, which will bring change in society. It's recommended that IEC emphasizing prevention must be undertaken immediately.

KEYWORDS: H1N1 Influenza, KAP, Teachers, Pune.

INTRODUCTION: On 11 June 2009 WHO declared H1N1 as pandemic phase 6. The first case in India was reported on 15th May 2009 at Hyderabad. Pune is a large industrial city with vulnerable population it holds a special place in spread of H1N1 being the worst hit serving as hub of H1N1, registering the first death in India on 6th July 2009 and also the highest number of deaths in the country.

Schools have the potential to become explosive centrifugal outbreak centers due to their large young population, close social contact and permeable boundaries. Additionally, student behavior is often divergent from non-student adult populations. Hence, understanding the outbreak and its management in such institutions is essential to minimize impact of pandemic influenza in both the institution and its surroundings. Moreover, it is well-known that students blindly follow teacher's advice. With this background the role of teachers is of paramount importance in disseminating knowledge on prevention of H1N1 influenza among students. Here comes the importance of not only correct knowledge about H1N1 amongst teachers, but also having a sound attitude and exemplary practices that could be emulated by students.

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This study was conducted to examine the knowledge, attitudes and practices of teachers towards H1N1 influenza in a Public School that went through the turmoil in 2009, to identify gaps in these areas and to recommend suitable measures for effective prevention in future.

MATERIALS AND METHODS: The study was undertaken from June to September 2010 at an elite higher secondary Public School in Pune city with a teacher population of 120. A semi-structured knowledge, attitude and practice (KAP) questionnaire on H1N1 influenza was designed and pretested.

Considering standard statistical protocols, a sample size of 96 was estimated. A stratified random sample was taken from amongst school teachers which belonged to either of these three categories: Primary, Trained Graduate or Post Graduate Teachers. A pilot study was undertaken to validate study protocol. Aim and modality of study was explained to all the teachers and were explained to mark questionnaires as per instructions. Suitable statistical analysis was done using Epi info 2006 software.

RESULTS: KNOWLEDGE ABOUT H1N1 INFLUENZA. While most teachers were well aware of basic aspects of H1N1. 40% were unaware of the danger signs and complications. Most subjects knew about N95 mask about half didn't know, how to use it correctly. Only less than two third appreciated importance of preventive measures and more than 3/4th appreciated the importance of isolating cases. (Table 1).

Knowledge	Correct Knowledge		Incorrect Knowledge		Didn't Know	
	N	%	N	%	n	%
Basic Facts						
What is swine flu	85	88.5	11	11.5	0	0
Causative agent	92	95.8	4	4.2	0	0
Infection Source	84	87.5	12	12.5	0	0
Transmission route	90	93.7	6	6.3	0	0
Availability of vaccine	90	93.7	4	4.2	2	2.1
Clinical Features						
System affected	95	98.9	1	1.0	0	0
Most susceptible people	78	81.3	18	18.7	0	0
Signs /symptoms	87	90.6	9	9.4	0	0
Danger signs	59	61.5	37	38.5	0	0
Complications	55	57.3	41	42.7	0	0
Prevention						
Name popular mask	84	87.5	12	12.5	0	0
Correct use of mask	42	43.7	31	32.3	23	23.9
Importance of prevention	59	61.5	37	38.5	0	0
Importance of isolation	73	76.1	23	23.9	0	0
Necessity of vaccine in H1N1 positive	34	35.4	49	51.1	13	13.5

Table 1: Knowledge on H1N1 Influenza

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ATTITUDES ON H1N1: While most felt that H1N1 is a huge problem and a threat to world, one third felt that problem has been exaggerated. Most believed that wearing a mask plays a role in prevention H1N1 can definitely be prevented and close contact with H1N1 patient must be avoided. Most believed that they will stay home on having flu like symptoms and washing hands with sanitizer was better (Tables 2 and 3).

Attitude	n	%
H1N1 a huge problem: yes	53	55.2
H1N1 an exaggerated problem	29	30.2
Can't comment	14	14.6
H1N1 threat to themselves	15	15.6
H1N1 threat to country	21	21.9
H1N1 threat to world	60	62.5
Washing hands with sanitizer better than soap water	63	65.6
Washing hands with sanitizer NOT better than soap water	17	17.7
Can't comment	16	16.7
H1N1 can kill	85	88.5
H1N1 can't kill	7	7.3
Can't comment	4	4.2

Table 2: General Attitudes

Attitude	n	%
H1N1 can definitely be prevented	70	72.9
H1N1 may be prevented	17	17.7
H1N1 can't be prevented	0	0
Can't comment	09	9.4
Close contact with H1N1 must be avoided	76	79.2
Avoiding close contact with H1N1 patient not very important	1	1.0
Avoiding close contact with H1N1 patient sometimes, is good enough	19	19.8
Mask doesn't play role in controlling infection	5	5.2
Mask may play some role	23	23.9
Mask plays a role	68	70.8
Will NOT stay home on having flu	8	8.3
Will stay home only if flu increases	26	27.1
Will stay home on having flu	62	64.6

Table 3: Attitude on Prevention of H1N1

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PRACTICES ON H1N1: Most subjects believed in keeping a handkerchief, covering their mouth/nose while coughing/sneezing or when someone coughs. About two third believed in avoiding public places during epidemics. Use of mask didn't find much preference while on work, most would use it when visiting a patient. About half the teachers believed in keeping a safe distance from flu patients. Most subjects believed in washing hands immediately on coming back home and consciously avoid touching door handles. Majority didn't believe in kissing or shaking hands with close friends. Some teachers would never stay home or visit a doctor even if they suffer from cold. Half the respondents would always take prescribed medicines. Most would educate others on prevention and treatment issues. (Tables 4, 5 and 6)

Practices	Always		Sometimes		Never	
	n	%	n	%	n	%
Basic Hygiene						
Keeping handkerchief	87	90.6	9	9.4	0	0
Covering mouth while coughing	87	90.6	9	9.4	0	0
Covering mouth/nose while sneezing	88	91.7	1	1.0	7	7.3
Wiping household surfaces	84	87.5	11	11.5	1	1.0
Avoiding visiting public places	60	62.5	28	29.2	8	8.3
Using a Mask						
Wearing mask at work	19	19.8	64	66.7	13	13.5
Wearing mask in crowded place	45	46.9	40	41.7	11	12.4
Wearing mask when visiting patient	77	80.2	17	17.7	2	2.0
Changing mask daily	67	69.8	12	12.5	17	17.7
Covering face when someone coughs	78	81.3	17	17.7	1	1.0

Table 4: Practices on Basic Hygiene and Using a Mask

Practices	Always		Sometimes		Never	
	n	%	n	%	n	%
Keeping distance >1m from patients	53	55.2	33	34.4	10	10.4
Avoiding crowded places	38	39.6	40	41.7	18	18.7
Wash hands immediately on coming home	81	84.4	14	14.6	1	1.0
Consciously avoiding touching door handles	35	36.4	40	41.7	21	21.9
Avoid touching nose with unwashed hands	60	62.5	34	35.4	2	2.1
Shaking hands	12	12.5	73	76.0	11	11.5
Hugging	6	6.2	59	61.5	31	31.3
Kissing	9	9.4	14	14.6	73	76.0

Table 5: Practices on Specific Preventive Measures

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Practices	Always		Sometimes		Never	
	n	%	n	%	n	%
Contracting Flu						
Staying home if having cold	17	17.7	62	64.6	17	17.7
Visiting doctor at first symptoms	39	40.6	41	42.7	16	16.7
Taking prescribed medicines	49	51.0	45	46.9	2	2.1
Educating Others						
Educate others to visit doctor	60	62.5	32	33.3	4	4.2
Educate to wash hands frequently	82	85.4	13	13.6	1	1.0
Educate to cover faces while coughing	84	87.5	11	11.5	1	1.0

Table 6: Practices on Contracting Flu and Educating Others

DISCUSSION: Teachers form an important part of our society which can influence population at large scale. In spite of a pandemic been declared in 2009 and given the importance of schools and teachers in propagating or restricting the epidemic, there are hardly any studies on KAP of teachers in available literature. This study endeavors to fill this gap. It gauges and paves a path to positively change Knowledge, Attitude and Practices (KAP) of school teachers. The venture culminated with an Information, Education and Communication drive in the school, especially concentrating on deficient areas, as detected by this study. Teachers' sound KAP will not only benefit them but also translate into disseminating the same to students and their families resulting in maximum benefit to society. ¹

KNOWLEDGE OF SCHOOL TEACHERS: Most subjects had correct knowledge about basic aspects of H1N1 (causative agent, route of transmission and availability of vaccine). However, some were ignorant about the source of infection. Similar findings are reported in a survey conducted amongst 1, 169 Hong Kong school teachers before school closures due to the H1N1 outbreak in 2009.² In another cross-sectional community based e-mail survey of residents of Sydney during WHO Phase 5 of pandemic in May 2009, it was found that most respondents (96%) were aware of pandemic, but 44% felt they did not have enough information about the situation. ³

In a cross-sectional study on 1, 548 adult subjects in Riyadh and Jeddah most participants (95.4%) were aware of H1N1 being a viral illness but about half the subjects stated that sexual contact was also a mode of transmission and a vaccine was available for disease, though it was not available then. The study indicated that 44% of all participants had 'low' knowledge about the disease only 5.2% showed a 'high' level of knowledge. ⁴ Another cross-sectional questionnaire based survey conducted in Udaipur (Rajasthan) among 791 individuals (57% males and 43% females) in August 2009 reports that 83.1% respondents had heard about Influenza A (H1N1) but about half felt that they did not have enough information about the pandemic.⁵ The difference in knowledge levels between our study and these studies can be attributed to the fact that these were community based cross sectional surveys and included subjects of varied age groups and educational levels as against our study that included educated teachers.

The present study brings forth the important fact that knowledge of subjects on various aspects of prevention of H1N1 was inadequate. Only less than 2/3rd of all subjects appreciated the importance of preventive measures, many didn't know to use the mask correctly or appreciated

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importance of isolating cases. However, in the Australian study only 3.2% were reluctant to be isolated if infected with “swine flu” while 95.3% were willing for isolation. Further, only 5.9% respondents were reluctant to receive a “swine flu” vaccine while 91% were willing. This shows a sound level of knowledge and better attitude towards prevention in Australia. This could be owing to the fact that Australia is a developed country with a better awareness base. ¹

ATTITUDES OF SCHOOL TEACHERS: More than half the respondents felt that H1N1 is a huge problem. A similar survey amongst teachers and students at University of New South Wales, Sydney, Australia reported that about 2/3rd believed it to be serious. ¹ Even though results of our study are quite comparable but higher proportions of Australian teachers believed that it was a serious problem. It could probably be due to the fact that Australian study was conducted in 2009 during the peak of pandemic when the anxiety levels were at the highest.

Interestingly, in the present study only 15.6% respondents perceived H1N1 to be a threat to themselves. The Sydney community study reported a much higher proportion (62%) ranking their risk of catching influenza during a pandemic as moderate or high.³ In the present study about one third subjects felt that H1N1 is being an exaggerated problem rather than a real one. In the Sydney study too, 41.6% respondents agreed that risk of a pandemic had been exaggerated.³ The Udaipur survey found that only 34.5% respondents felt H1N1 to be a serious threat to their health.⁵ This again talks of a state of better knowledge and correct attitude of the Australians.

The respondents were quite positive in their attitude on H1N1 being preventable as most believed that H1N1 can definitely be prevented. While more than two-thirds believed that wearing mask plays a role in preventing infection, about one-fourth felt that it may play a role. The University of New South Wales, Sydney teachers’ survey reports that as many as 21.1% respondents purchased face masks or hand hygiene products during the epidemic. ¹

The fact that more than two-thirds of subjects believed that they will stay home on having flu is heartening, but more than one fourth believed that they will go to work and stay home only if their symptoms increase. More alarmingly some teachers were defiant and would go to work even if they had symptoms consistent with flu. This is the group, that is required to be targeted during the IEC drive.

PRACTICES OF SCHOOL TEACHERS: It was found that the practices followed by school teachers on basic hygiene were mostly sound and consistent with the principles of prevention. Most believed in keeping a handkerchief, covering their mouth/nose while coughing/ sneezing and wiping household surfaces, as part of preventive strategies. However few felt that they will never cover their mouth / nose while sneezing. The Australian study reports only 8.6% teachers would avoid busy public places during the epidemic. ¹ In this regard, practices of our teachers are better than their Australian counterparts.

Reluctance was observed amongst teachers to use mask. About two thirds, only sometimes did so. In the Australian study among teachers of New South Wales University, it is reported that the use of masks in public was met with less resistance; only 11.4% were found to be reluctant to use it and 41.4% were ‘very willing’ to use it while 45.3% were ‘willing’ to use it.

Few teachers would never take leave even if they suffered from cold and would never visit a doctor at the first symptoms. The figures from the Australian study are more encouraging as <5% respondents did not stay away from work (to stay home) when they contacted flu. About half were

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'very willing' to stay away from work while about one third were 'willing' to stay away. Practices of school teachers on educating others about H1N1 were encouraging. Most would always educate others to visit a doctor if they get flu. Contrary to these findings, the Australian study reports that only 6.4% teachers would approach the individual if someone is coughing /sneezing nearby and educate to comply with specific health measures, e.g. leaving the area, observing respiratory etiquette.¹

The practices of school teachers on executing specific preventive measures against H1N1 were a mixed bag. The mixed practices indicate that while the knowledge and attitude of the teachers might be acceptable, there is a large gap when it actually comes to practicing them. We need to fill this gap by inculcating the right attitudes and translating them into correct practices if we have to prevent H1N1.

CONCLUSION: The study has important implications for prevention and implementation of infection control measures for H1N1 influenza not only among teachers but also for students being taught by them. The findings indicate that besides enhancing knowledge on preventive aspects of H1N1 there is a requirement of furthering health protective behaviors in teachers and students. As knowledge is associated with practice of health-protective behaviors outbreak control measures should emphasize improving the attitude and practices through active behavior change programmes on H1N1.

In spite of having acceptable knowledge and attitude, positive behavioral response to H1N1 was poor. This gap between good knowledge and attitudes not being translated to robust practices needs to be bridged, and let's begin with teachers, as they are the harbingers of change in a society.

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