



Knowledge about H1N1 influenza A among public health personnel of rural Nagpur: A cross sectional study

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ABSTRACT India is amongst one of the most affected countries for cases and deaths of Influenza A (H1N1) globally. Health care workers will be expected to play a leadership role in disseminating targeted implementation preventive strategies and education programs aimed at reducing influenza A related morbidity and mortality. Present cross-sectional study was carried out to assess knowledge regarding influenza A and its association with factors related to the service amongst health personnel of rural Nagpur, including health assistants and ANM who have completed at least 6 months of service. We found significant relation of training status with the basic knowledge about H1N1 influenza like causative organism, symptoms, mode of transmission, incubation period and contact treatment among health workers. However, there was no such significance between length of service and outbreak work experience with the basic knowledge of H1N1 influenza A and its treatment. Therefore formal training of health workers irrespective of their duration of service & work experience appears to be the single most significant way to improve the awareness & knowledge about H1N1 amongst health workers.

KEYWORDS : Influenza A (H1N1), Health workers

Introduction: In 2009, the World Health Organization reported 1,77,457 laboratory confirmed cases of influenza A/H1N1 and 1,462 deaths. India was ranked third among the most affected countries for cases and deaths of Influenza A (H1N1) globally with highest number of cases reported in 2009 (27,236), followed by 2010 (20,604) and 2012 (5,054 cases). While the highest number of deaths took place in 2010 (1,763), followed by 2009 (981) and 2012 (405)(WHO, Mar, 2014).

Health care workers will be expected to play a leadership role in disseminating targeted implementation preventive strategies and education programs aimed at reducing influenza A/H1N1 related morbidity and mortality. Evidence is available that the achievement of these goals varies with whether health care workers are knowledgeable, have positive attitudes, and acquire adequate information (Bali, et al., 2013). Also, they are a high risk group in the transmission of the disease.

Objective: Present study was carried out to assess knowledge regarding H1N1 influenza A and its association with factors related to the service amongst health personnel of rural Nagpur.

Methodology: A cross-sectional study was conducted from January 2016 to February 2017 amongst healthcare workers at primary health centres in rural Nagpur, including health assistants and ANM who completed at least 6 months in service. The estimated sample size was 121. Written, informed consent of subjects was obtained. Data on socio-demographic details and various knowledge components of H1N1 influenza A was collected using predesigned, pre-tested questionnaire. Descriptive statistics (percentage, mean, standard deviation, range) were used to

summarize baseline characteristics of the study subjects. Relation between two categorical variables was analyzed by using Chi-square and Fisher exact test. P value <0.05 was considered statistically significant.

Result: Majority (84.35%) of study subjects were in the age group of 25 - 55 years with mean age 46.31 (±8.71) years & 66.67 % were female. Mean length of service was 19.35 ± 8.79 years (range 01 – 36 years). About 65 (44.22%) health workers had got formal training regarding H1N1 influenza A and 18 (12.24 %) had work experience during past outbreaks of H1N1 influenza A.

Majority of health workers had correct knowledge regarding causative organism (90.48%), symptoms (85.03%), mode of transmission (95.24%) and incubation period (62.59%) of H1N1 influenza. Period of communicability was known to only 54 (36.73%) of health workers, while only 47 (31.97%) knew correctly about categorisation of patients on the basis of symptoms.

Correct knowledge regarding different masks available and its disposal after use was 24 (16.33%) and 82 (55.78%) respectively, while knowledge of drug of choice and contact treatment was 136 (92.52%) and 92 (62.59%) respectively. Only 12 (8.16%) of health workers had knowledge about availability of different H1N1 influenza A vaccines, 06 (4.08%) knew about correct doses and only 02 (1.36%) knew contraindications of the vaccine. Awareness regarding frequent hand washing was 57.82% and cough hygiene or etiquettes 63.27% as a method of prevention, while around 74 (50.34%) stated avoiding public gatherings as a method of prevention. About 40 (27.21%) had mentioned public awareness as a method of prevention.

Table 1. Basic knowledge of Health workers (n=147) about H1N1 influenza A and its treatment by their service factors

	Correct Knowledge	Training status			Length of service			Outbreak Work experience		
		YES n=65 (%)	No n=82 (%)	p value	<5 yrs. n=08 (%)	≥5 yrs. n=139 (%)	p value	YES n=18 (%)	NO n=129 (%)	p value
Basic knowledge	Causative organism	64 (98.46%)	69 (84.15%)	0.0023	08 (100%)	125 (89.93%)	0.4397	18 (100%)	115 (89.15%)	0.1464
	Symptoms	60 (92.31%)	65 (79.27%)	0.0224	08 (100%)	117 (84.17%)	0.2640	17 (94.44%)	108 (83.72%)	0.2063
	Mode of transmission	59 (90.77%)	81 (98.78%)	0.0293	07 (87.50%)	133 (95.68%)	0.3298	16 (88.89%)	124 (96.12%)	0.2051

Knowledge of treatment	Incubation Period	50 (76.92%)	42 (51.22%)	0.0011	04 (50.00%)	88 (63.31%)	0.3436	14 (77.78%)	78 (60.47%)	0.1210
	Period of communicability	27 (41.54%)	27 (32.93%)	0.1831	03 (37.50%)	51 (36.69%)	0.6174	08 (44.44%)	46 (35.66%)	0.3170
	Categories of Patients	25 (38.46%)	22 (26.83%)	0.0929	04 (50.00%)	43 (30.94%)	0.2261	02 (11.11%)	45 (34.88%)	0.0331
	Drug of choice	59 (90.77%)	77 (93.90%)	0.3416	08 (100%)	128 (92.09%)	0.5282	17 (94.44%)	119 (92.25%)	0.5992
	Contact treatment	50 (76.92%)	42 (51.22%)	0.0011	05 (62.50%)	87 (62.59%)	0.6332	14 (77.78%)	78 (60.47%)	0.1210
	Adverse effects	32 (49.23%)	35 (42.68%)	0.2660	02 (25.00%)	65 (46.76%)	0.2034	09 (50.00%)	58 (44.96%)	0.4386

with the basic knowledge about H1N1 influenza like causative organism, symptoms, mode of transmission, incubation period and contact treatment among health workers. No such significance

between length of service and outbreak work experience with the basic knowledge of H1N1 influenza A and its treatment was noted.

Table 2. Knowledge of Health workers (n=147) about H1N1 influenza A prevention by their service factors

	Correct Knowledge	Training status			Length of service			Outbreak Work experience		
		YES n=65 (%)	No n=82 (%)	p value	<5 yrs. n=08 (%)	≥5 yrs. n=139 (%)	p value	YES n=18 (%)	NO n=129 (%)	p value
Knowledge of methods of prevention	Availability of different vaccines	12 (18.46%)	00	0.00003	00	12 (8.63%)	0.4972	03 (16.67%)	09 (6.98%)	0.1668
	Vaccine Dose	06 (9.23%)	00	0.0065	00	06 (4.32%)	0.7105	00	06 (4.65%)	0.4501
	Vaccine Contraindication	02 (3.08%)	00	0.1938	00	02 (1.44%)	0.8937	02 (11.1%)	00	0.01425
	Different Masks available	16 (24.62%)	08 (9.76%)	0.0141	01 (12.50%)	23 (16.55%)	0.6138	03 (16.67%)	21 (16.28%)	0.5949
	Disposal of used mask	34 (52.31%)	48 (58.54%)	0.2781	05 (62.50%)	77 (55.40%)	0.4944	11 (61.11%)	71 (55.04%)	0.4111
	Frequent Hand washing	37 (56.92%)	48 (58.54%)	0.4881	04 (50.00%)	81 (58.27%)	0.4564	13 (72.22%)	72 (55.81%)	0.1429
	Cough hygiene	43 (66.15%)	50 (60.98%)	0.3181	03 (37.50%)	90 (64.75%)	0.1208	08 (44.44%)	85 (65.89%)	0.0677
	Avoid public gatherings	39 (60.00%)	35 (42.68%)	0.0272	03 (37.50%)	71 (51.08%)	0.3518	14 (77.78%)	60 (46.51%)	0.0116
	Public awareness	21 (32.31%)	19 (23.17%)	0.1498	01 (12.50%)	39 (28.06%)	0.3072	02 (11.11%)	38 (29.46%)	0.0816

As far as knowledge regarding H1N1 influenza A prevention is concerned (table 2), there was significant relation of training status with the knowledge about availability of different H1N1 influenza A vaccines, its dose, availability of different masks and avoiding public gatherings. There was also significant relation of outbreak work experience and knowledge about vaccine contraindications and avoiding public gathering as a method of prevention.

Discussion: Our study found that majority of health workers had correct knowledge regarding causative organism (90.48%), symptoms (85.03%), mode of transmission (95.24%) and incubation period (62.59%) of H1N1 influenza.

Correct knowledge regarding period of communicability was present only in 54 (36.73%). Also only 47 (31.97%) knew correctly about categorisation of patients on the basis of symptoms of H1N1 influenza. Similar findings were found by other studies of the authors like Bali NK et al , Rajoura OP & others , Datta & others , Nafra AK & others , Yap J & others , Coulibaly D & others , Khazaeipour & others , Mishra P et al , & Albano L et al .

There was significant relation of training status and basic knowledge of H1N1 disease, knowledge about: contact treatment, availability & dose of H1N1 vaccine, types of masks available & avoiding public gathering as a method of prevention among Health Workers.

These findings are in accordance with studies of Hemavathy, V & others & N Kumar & others .

Conclusion: We found that duration of service & work experience both had no or little significant association with basic knowledge of the H1N1 disease, its treatment & prevention.

Therefore formal training of health workers irrespective of their duration of service & work experience appears to be the single most significant way to improve the awareness & knowledge about H1N1 amongst health workers.

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