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Frontline Health Workers Knowledge and Preparedness on Novel Influenza H1N1 from Western India

Chandresh M Pandya[1], Paragkumar D Chavda[2], Dipak M Solanki[3], Kedar G Mehta[2]

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Author's Affiliation:
[1]Associate Professor; [2]Assistant Professor; [3]Professor, Dept of Community Medicine, GMERS Medical College, Gotri, Vadodara

Correspondence
Paragkumar D Chavda
paragchavda@gmail.com

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ABSTRACT

Background: Novel H1N1 has shown a continued presence with recent surges. Information about the knowledge and preparedness of frontline health workers on novel H1N1 is scarcely available.

Methodology: The current study was undertaken to assess the knowledge and preparedness of the ASHA and Anganwadi workers from one of the community development blocks of a district in central Gujarat. A cross sectional community based survey was carried out among total 155 frontline workers (93 ASHA and 62 Anganwadi workers) from the block using a self-administered semi-structured questionnaire in vernacular language.

Results: Majority of the study participants were in the young age of 26–40 years and were educated up to higher secondary or graduate level. These frontline workers had good knowledge about Novel influenza H1H1 including its symptomatology, mode of transmission and its prevention. Most knew that the disease is curable and preventable. Although they were aware about majority of the interventions, there were gaps in knowledge about importance of hand washing. The primary health center, television and newspapers were the sources of information.

Conclusion: The frontline workers possess good knowledge about novel influenza indicating their preparedness to tackle any future surges in the disease transmission.

Key words: Novel influenza H1H1, Frontline health workers, ASHA, Anganwadi worker, India

INTRODUCTION

While influenza has been around the world for quite some time now, it was the genetically modified new virus appearing first in Mexico in the year 2009 that caught the attention of the world. It was found to have genetic re-assortments with gene segments from swine, avian and human flu virus.[1]The scientists labeled it as novel influenza A (H1N1). It reached pandemic proportions in June 2009 with WHO raising the level of Influenza pandemic alert from phase 5 to 6.[2]

It was treated as public health emergency and cases continue to be reported even now. The H1N1 continues to be the major strain among all the specimens found positive for influenza testing worldwide even during the year 2016.[3] After the resurgence in the years 2012 – 13, India saw a recent resurgence in late 2014 and early 2015.[4]The year 2015 saw increase in H1N1 cases in India from January to April with peak in February and a total of 35767 cases and 2218 deaths.[5] Gujarat happens to be one of the most affected states. In light of these findings an optimum public awareness and education measures are recommended in India even during the inter resurgence period. [4]

In India, there has been large scale mass media coverage for this disease. However, this may have only urban reach. The rural areas in our country may not have similar penetration of mass media coverage. Whether such information has reached the large majority of the rural population is an area that is unanswered. In the public health system in

rural areas the frontline workers are the ones who help the heath system to spread awareness about health issues in general public. Anganwadi worker and Accredited Social Health Activist (ASHA) are the two categories of frontline health workers who not only stay in the villages but are also in direct contact with them by house to house visits. Thus they can be an important source of information about the prevention of disease for the general population. The literature search for such information did not fetch any studies on awareness among frontline health workers on novel influenza H1N1. Therefore, we undertook this study to understand the knowledge and preparedness of these frontline workers on novel influenza H1N1.

METHODS

The design for the current study was a descriptive cross-sectional community based study. This study was carried out among thetotal 155 frontline health workersfrom Vadodara rural Block of Vadodara District in Gujarat state which is situated in western part of India. The Anganwadi workers and ASHA are the frontline workers who are working / residing in the closest vicinity of the local community in rural areas. Hence, it was decided to recruit all the ASHA and Anganwadi workers from the 7 PHCs covered under Vadodara Community Development Block.

The data collection for the study was done in the month of February 2015. Since this was a peak H1N1 transmission season with increased number of cases and deaths reported in Gujarat state and Vadodara.We conducted this study among the frontline health workers from the Vadodara Block in Vadodara District.

The data collection was done in batches at the Rural Health Training Center of the Dept of Community Medicine. The ASHA were covered in three batches and Anganwadi workers were covered in two batches. Based on the findings of the study the workers were given training on novel H1N1 and its prevention.

Permission from the institutional ethics committee was taken for the study. Written informed consent was taken from the participants before data collection. The participants were assured about anonymity and confidentiality of the information provided at the time of data acquisition. There was no intervention involved. The study posed less than minimal risk to the participants.

The study used a self-administered questionnaire. The study questionnaire was developed based on the guidelines and factsheets on influenza H1N1.[6-8]The questionnaire was validated for content by two independent public health experts. The final version was translated to vernacular language by language experts. The translated version was back translated to English to check consistency. The translated version was pilot tested on 5 ASHA workers at the rural health training center of the department and suitable modifications were made before the final version was prepared for the study. The final questionnaire was in two parts: Part 1: demographic details of the study participants. Part 2: this included largely open ended questions obtaining information on the knowledge and preparedness of the study participants on H1N1.

Statistical analysis: The data thus collected were entered and analyzed in EpiInfo version 7.1.5.2 (Centers for Disease Control and Prevention, Atlanta, Georgia, USA). This being a descriptive study no statistical significance tests were applied.

RESULTS

A total of 93 ASHA workers could be included in the study in three batches. A total of 62 Anganwadi workers were included in the study in two batches. Table 1 presents background characteristics of the study participants.

The young age group of 26 to 40 years covered majority of the participants of this study. Majority of the participants were educated up to higher secondary or above. Two ASHA and one Anganwadi worker were educated up to postgraduate level.

Knowledge and preparedness for novel influenza

Majority of the participant could recollect the important symptoms of cough and cold, fever and sore throat. Around one third participants recollected the symptoms of difficulty in breathing, diarrhea – vomiting or malaise.

Table 1: Background characteristics of study participants

Characteristics	ASHA (n=93)	AWW (n=62)	Total (n=155)
Age in completed years			
21- 25	1 (1.1)	4 (6.5)	5 (3.2)
26 – 30	30 (32.3)	9 (14.5)	39 (25.2)
31- 35	26 (28)	16 (25.8)	42 (27.1)
36 – 40	22 (23.7)	14 (22.6)	36 (23.2)
41 – 45	9 (9.7)	7 (11.3)	16 (10.3)
46 – 50	5 (5.4)	8 (12.9)	13 (8.4)
≥51	0 (0)	4 (6.4)	4 (2.5)
Education			
Up to secondary	3 (3.2)	18 (29)	21 (13.5)
Higher secondary	65 (69.9)	24 (38.7)	89 (57.4)
Graduate	23 (24.7)	19 (30.6)	42 (27.1)
Post graduate	2 (2.2)	1 (1.6)	3 (1.9)

Figure in parenthesis indicate percentage

Table 2: Source of information for novel influenza *

Source of information	ASHA (n=93)	AWW (n=62)	Total (n=155)
Primary Health Center	81 (87.1)	40 (64.5)	121 (78.1)
Television	16 (17.2)	10 (16.1)	26 (16.8)
News paper	14 (15.1)	12 (19.4)	26 (16.8)
From people	1 (1.1)	7 (11.3)	8 (5.2)
Posters	2 (2.2)	0 (0)	2 (1.3)
Training	8 (8.6)	0 (0)	8 (5.2)

* Multiple responses possible; Figure in parenthesis indicate percentage

Table 3: Knowledge about various Symptoms of novel influenza H1N1 *

Symptoms	ASHA (n=93)	AWW (n=62)	Total (n=155)
Cough & cold	90 (96.8)	59 (95.2)	149 (96.1)
Fever	79 (84.9)	56 (90.3)	135 (87.1)
Pain in throat / sore throat	85 (91.4)	51 (82.3)	136 (87.7)
Difficulty in breathing	29 (31.2)	9 (14.5)	38 (24.5)
Diarrhea – vomiting	30 (32.3)	20 (32.3)	50 (32.3)
Weakness	18 (19.4)	11 (17.7)	29 (18.7)
Running nose	5 (5.4)	0 (0)	5 (3.2)
Chest pain	9 (9.7)	0 (0)	9 (5.8)
Headache	4 (4.3)	5 (8.1)	9 (5.8)
Watering from eyes	1 (1.1)	0 (0)	1 (0.6)

* Multiple responses possible; Figure in parenthesis indicate percentage

Table 4: Knowledge about various Mode of spread of novel influenza H1N1 *

Mode of spread	ASHA (n=93)	AWW (n=62)	Total (n=155)
Through air	18 (19.4)	6 (9.7)	24 (15.5)
Through breath	26 (28)	19 (30.6)	45 (29)
Through virus	39 (41.9)	19 (30.6)	58 (37.4)
Sneezing	23 (24.7)	18 (29)	41 (26.5)
Personal contact	13 (14)	10 (16.1)	23 (14.8)
At crowded places	10 (10.8)	10 (16.1)	20 (12.9)

* Multiple responses possible; Figure in parenthesis indicate percentage

Table 5: Knowledge about various Methods of prevention of the disease *

Methods of prevention	ASHA (n=93)	AWW (n=62)	Total (n=155)
Avoid visiting crowded places/avoid personal contact	32 (34.4)	8 (12.9)	40 (25.8)
Cover face with hand kerchief or mask	49 (52.7)	29 (46.8)	78 (50.3)
Through medicines	45 (48.4)	38 (61.3)	83 (53.5)
Keep hygiene	4 (4.3)	1 (1.6)	5 (3.2)
Handwashing	16 (17.2)	8 (12.9)	24 (15.5)
Don't know	9 (9.7)	0 (0)	9 (5.8)

* Multiple responses possible; Figure in parenthesis indicate percentage

The source of information on novel H1N1 was the Primary Health Center for majority of the participants from both the groups. The television and newspapers were also other important sources as is evident from Table no. 2.

Regarding the mode of spread of the disease almost one third participants could mention that it was through a virus. Some participants also indicated the respiratory route of transmission by mentioning the spread by air, breath and sneezing. While few mentioned the personal contact and going to crowded places to the cause of spread of the disease.

When they were asked whether novel influenza is curable all the Anganwadi workers and 98% of the ASHA replied in affirmative. When asked whether this disease is preventable all the ASHA and Anganwadi workers replied in affirmative.

From the participants' perspective, using medicines and covering face with mask / handkerchief were the most common methods to prevent H1N1 infection as almost half of the participants mentioned these two interventions. A quarter of the participants also mentioned avoidance of public places and close personal contact. While less than one fifth mentioned handwashing as an important method of prevention of disease. Few mentioned general hygiene while few honestly mentioned that they did not know about the method of prevention. None of the participants mentioned about the vaccine for prevention of H1N1 infection.

DISCUSSION

This study attempted to measure the frontline health care workers knowledge and preparedness on novel influenza H1N1. The sampled workers were the grassroots level workers with limited educational attainment. They did not even have any formal paramedical degree. Yet their knowledge regarding the disease was found to be good.

Though there are other studies on assessing the doctors as well as the patients' knowledge on novel influenza from outside India, we did not come across studies from India assessing the knowledge and preparedness of such frontline workers on novel influenza to compare our findings.[9-10]A study done to find out the awareness among nurses suggested that they had good knowledge about the symptoms, treatment and prevention of H1N1 infection. However, the source of such knowledge for them was media as the study was done from urban set up in contrast to our study where the source of information for most of them was through the primary health center. [11]

This study was done in the peak transmission during the year 2015 when a surge in H1N1 cases was noted. An earlier study done on health care work-

ers knowledge from Turkey during the year 2009 when the pandemic started suggests low level of knowledge among even the paramedical workers.[12] While this study done in 2015 suggested that by the year 2015 majority of the workers in the study area were well acquainted with the disease symptomatology and its spread.

A study from Pune in the year 2013 done among the general population of rural and urban areas suggested that the rural population needed more awareness about the disease, its treatment and prevention.[13]A study from Surat, Gujarat suggest that early health seeking can possibly result in less fatality in this disease.[14] Thus the knowledge on H1N1 among the peripheral health workers can possibly reduce this delay in health seeking.

With regard to prevention while the measures such as face cover and medicines were mentioned by many; other important interventions like handwashing was not mentioned by many. Stress needs to be given on this in subsequent trainings organized by the health system. In contrast to findings from other countries the awareness about the availability of vaccine as a preventive measure was not very high in this study. This is reflects the policy of government of India which focused more on the measures for prevention of transmission in its training programs for health workforce as well as in its public awareness campaigns.

The source of information for majority of the participants was cited as the primary health center which suggests that the training and sensitization done by the primary health center was useful to these workers. The role of the medical officers at the primary health centers should be appreciated for training their staff members on novel H1N1. Since such training seems to be effective they can be utilized for communicating any future updates or information about the health programs or public health emergencies to the grass root staff.

This study measured the knowledge about novel influenza among the grass root health workers. How far this knowledge among them was communicated to the actual population served by them was not measured in this study. Which can be considered a limitation of this study.

CONCLUSION

The frontline health workers had good knowledge about the symptomatology, mode of spread and measures of prevention for novel H1N1 influenza. The source of information for majority of the participants was the primary health center. Thus this study underscores the role of the primary health care system in preparing their grassroots level workers in emerging infectious diseases. The few lacunae in knowledge brought about by this study were covered in the subsequent training of these health workers.

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