International Journal of Community Medicine and Public Health
Ade AD et al. Int J Community Med Public Health. 2018 Dec;5(12):5171-5177
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20184726

Original Research Article

Awareness of H1N1 influenza (swine flu) among rural population of Chittoor district, Andhra Pradesh

Anju Damu Ade*, Bhavani Yamasani, Nagaraj Kondagunta

Department of Community Medicine, SVIMS, Sri Padmavathi Medical College, Chittor, Andhra Pradesh, India

Received: 24 October 2018
Revised: 05 November 2018
Accepted: 13 November 2018

***Correspondence:**
Dr. Anju Damu Ade,
E-mail: anju.ade@gmail.com

ABSTRACT

Background: Influenza is an acute respiratory tract infection caused by influenza virus, of which there are 3 types- A, B and C. All known pandemics were caused by influenza A strains. The objectives of the study were to study the awareness of H1N1 influenza (swine flu) among rural population and to examine the association between socio demographic variables and awareness of H1N1 influenza (swine flu).
Methods: A cross-sectional study was carried out in the three villages of Chittoor district (Amudala Kona, Rupalanaik Thanda, Kothakadapalli) where health camps were conducted. A total of 167 rural adults were interviewed who attended the camps.
Results: Majority of the study participants were illiterates (50.3%).Only 59 (35%) participants previously heard about the disease H1N1 influenza (swine flu). Majority of them 26 (44.1%) didn't knew the cause of swine flu. Media was the most common source of information (76.3%). Only 49.2% of participants were aware about transmission of disease. Majority of them were not aware i.e. 36 (61%)regarding treatment and investigation availability for H1N1 influenza (swine flu), but only 15.3% people were aware about the vaccine availability for the disease.
Conclusions: Overall awareness regarding H1N1 flu was low among rural adults. Low awareness denotes poor mass media coverage in rural community. As most of the participants are illiterates, use of TV and mass media as an effective media to dissipate information must be utilized to maximum. Awareness generated by health staff is not significant. Health workers at primary level should be equipped with knowledge and skills in order to create awareness and organize Health education sessions in all areas which can be made more effective by involving Public Health Professionals to develop communication messages.

Keywords: Awareness, HINI influenza, Swine flu, Rural population

INTRODUCTION

Influenza is an acute respiratory tract infection caused by influenza virus, of which there are 3 types- A, B and C. All known pandemics were caused by influenza A strains. The disease is characterized by sudden onset of chills, malaise, fever, muscular pains and cough.[1] It occurs in all countries and affects millions of people every year. Its behaviour is unpredictable. It may occur in several forms. It may smoulder in a community without clinical recognition, being manifest only by serological surveys. It may occur in pandemics every 10-40 years due to major antigenic changes, as occurred in 1918 (Spanish influenza), 1957 (Asian influenza), and 1968 (Hong Kong influenza.[2] Worldwide, the annual epidemics are estimated to result in about 3-5 millions cases of several illness and above 250000 to 500000 deaths.[3]

In epidemiological terms, the hallmark of an influenza is the excess mortality that it causes combined with an enormous burden of ill-health that saps the energy of

individuals, families and communities throughout the whole world.[4] The unique features of influenza epidemics are the suddenness with which they arise, and the speed and ease with which they spread. The short incubation period, large number of subclinical cases, high proportion of susceptible population, short duration of immunity, and absence of cross-immunity, all contributes to its rapid spread.[3]

More recently, influenza A (H1N1) virus of swine origin emerged in Mexico during the spring of 2009 an d was given name – pandemic influenza A (H1N1) 2009 virus.[1] The pandemic influenza A ((H1N1) 2009 virus differs in its pathogenicity from seasonal influenza in two key aspects. First as the majority of human population has little or no pre-existing immunity to the virus, the impact of the infection has been in a wider age range, in particular among children and young adults, Secondly, the virus can infect the lower respiratory tract and can cause rapidly progressive pneumonia, especially in children and young to middle aged adults. Following its emergencies in March 2009, pandemic A (H1N1) 2009 virus spread rapidly throughout the world, leading to the declaration of an influenza pandemic by WHO on 2009.[5] The world is now in post-pandemic period. In India it causes local outbreaks. During 2014, India reported 937 cases and 218 deaths, a case fatality rate of 23.2 percent.[6]

Based on knowledge about post-pandemics, the (H1N1) 2009 virus is expected to continue to circulate as a seasonal virus for some years to come. While level of concern is now greatly diminished, vigilance on the part of national health authorities remains important, when the behaviour of H1N1 virus as a seasonal virus cannot be reliably predicted.[7] On 26th September 2011 WHO has adapted a new nomenclature as influenza A (H1N1) pdm09.[8]

Public and political awareness of the ever-present potential of a worldwide pandemic needs to be strengthened. Despite this century's pandemics, influenza remains a poorly understood and appreciated infection.[4] Knowledge regarding swine flu is crucial to control and prevent the outbreak of this disease and also to protect from illness. Studies in rural areas in India regarding swine flu are very sparse. So the present research was undertaken to assess the existing knowledge among rural community regarding swine flu. This will be helpful to plan awareness raising program among rural community i.e. in developing information, education and communication.

Objectives

- To study the awareness of H1N1 Influenza (Swine flu) among rural population.
- To find out the association between socio demographic variables and awareness of H1N1 Influenza (swine flu).

METHODS

Study design: Cross sectional study.

Study period: September to November 2017.

Study area

Study was carried out in three villages of Chittoor district, Andhra Pradesh. These three villages were Amudala Kona, Rupalanaik Thanda, Kothakadapalli where diagnoctic/social service camps were conducted in the months of September, October, and November 2017.

Study subjects

Study was conducted among rural adults both males and females above 18 years of age, who are permanent resident of these villages and who attended these camps and who were willing to participate and gave informed consent were included in the study.

Study instrument

To collect data, structured and pretested questionnaire was used. The proforma included questionnaires to collect sociodemographic information and to assess their level of awareness.

Data collection technique

Eligible adults who attended the diagnostic/social service camps were interviewed. The study subjects were explained the purpose of the study and informed consent was taken from them. The study subjects were interviewed about their socio demographic profile and their level of awareness of H1N1 flu.

Statistical analysis

Data were entered in the Microsoft Excel sheet and analysed using SPSS software version 23.00. Data presented as proportions while Chi-square test was used to find out the association. $P<0.05$ were considered significant.

RESULTS

As shown in Table 1, total study population constituted 167 rural adults, out of which 74 (74.44%) were males and 93 (93.56%) were females in the age group of 30 to 75. In this study, a slightly higher proportion belonged to female sex (55.7%). Major fraction of the population in this study was in the age group of 31 to 45 years old.

A majority (97.6%) of the respondents were Hindus. A nuclear family system was seen to be the most common (61.1%) among the population interviewed, followed by the joint family. Literacy was found to be low in the study population. Majority of them (53.9%) of them were

illiterate and were daily labourers 70 (41.9%). Most of the study participants belong to lower middleclass and lower class as per modified BG Prasad classification (71.8%).

Table 1: Socio-demographic characteristics of study population (n=167).

	Frequency	Percent (%)
Age (in years)		
Up to 30	37	22.2
31-45	57	34.1
46-60	50	29.9
61 and above	23	13.8
Gender		
Male		74.44
Female		93.56
Literacy		
Illiterate	90	53.9
Primary	23	13.8
Secondary	46	27.5
others	8	4.8
Occupation		
Daily labourer	70	41.9
Agriculture	49	29.3
Housewife	29	17.4
Others	16	9.6
Business	3	1.8
Socioeconomic		
Upper class	3	1.8
Upper middle class	16	9.6
Middle class	28	16.8
Lower middle class	62	37.1
Lower class	58	34.7
Religion		
Hindu	163	97.6
Muslim	4	2.4
Type of family		
Nuclear	102	61.1
Joint	61	36.5

Table 2: Source of information of study participants.

Source of information	n=59	Percentage (%)
Media	45	76.3
Health persons	15	25.4
Friends	4	6.8

*= Multiple responses.

As depicted in Table 2, media was the most common source of information, 45 (76.3%) in this study followed by health persons like doctors, health care workers, friends (6.8%).

As shown in Figure 1, in this study, out of 167, only 59 (35%) participants previously heard about the disease H1N1 flu.

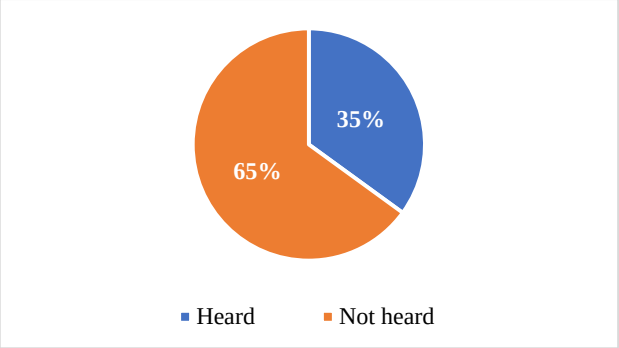

Figure 1: Distribution of study participants who heard of swine flu.

Table 3: Awareness of study participants (n=59).

	Frequency	Percentage (%)
Cause		
Virus	17	28.8
Bacteria	5	8.5
Others	11	18.6
Don't know	26	44.1
Communicability		
Communicable	44	74.6
Non communicable	03	5.1
Don't know	12	20.3
Mode of transmission		
Through droplets of coughing and sneezing	33	55.9
Don't know	26	44.1
High risk people		
Working in crowds	17	28.8
Poultry	3	5.1
Health personnel	3	5.1
Don't know	36	61
Whether H1N1 flu causes death		
Yes	15	25.4
No	6	10.2
Don't know	38	64.4

As shown in Table 3, majority of them 26 (44.1%) didn't knew the cause of H1N1 flu. Those who knew about H1N1 flu, among them relatively less proportion i.e.17 (28.8%) knew the cause correctly i.e. H1N1 virus. Others, i.e. 11 (18.6%) said cause is mosquito, flies and by touch etc. Almost half of the subjects identified that infection spreads through droplets of coughing and sneezing of infected person (55.9%) and 44.1% responded that they were not aware of mode of transmission of the disease. Regarding knowledge about communicability 44 (74.6%) said disease is communicable. Others 12 (20.3%) participants were not aware of communicability of the disease.

In this study, when asked about the people who are at high risk of getting infected, majority of them were not

aware i.e. 36 (61%). Only 23 (38.98%) people were aware that working in crowds, poultry and health personnel have more chances of getting this infection and when questioned, whether H1N1 flu causes death, only few of the study subjects i.e. 15 (25.4%) were aware that H1N1 flu can cause death while majority were not aware, 38 (64.4%). Only 6 (10.2%) participants said H1N1 flu does not cause death.

Table 4: Distribution of study subjects by responses regarding symptoms.

Symptoms	n=59	Percentage (%)
Fever and cough	36	61
Sneezing and Running nose	17	28.8
Headache	12	20.3
Sore throat	1	1.7
Muscle and joint pains	11	18.6
Don't know	20	33.9

As shown in Table 4, Among those who were aware of the disease, 66% participants were aware of few symptoms like fever and cough, sneezing and running nose, headache, sore throat, muscle and joint pains. 33.9% were not aware of any symptoms.

Table 5: Distribution of study subjects based on their knowledge of prevention.

To prevent swine flu, what you do?	n=59	Percentage (%)
Cover mouth and nose while coughing and sneezing	23	39
Frequent hand washing with soap and water	11	18.6
Avoid crowded places and contact with sick people	12	20.3
Don't know	27	45.8

As shown in Table 5, among those who were aware of H1N1 flu, half of them i.e. 27 (45.8%) had no knowledge of preventive measures while 46 (77.9%) participants had knowledge of preventive measures like covering the mouth and nose while coughing and sneezing, frequent hand washing with soap and water and to avoid crowded places and contact with sick people.

As shown in Table 6, only 27.1% and 28.8% of the study subjects were aware that there is treatment and investigation to diagnose H1N1 flu respectively. The awareness regarding availability of vaccine was poor with only 15.3% of study subjects having knowledge about vaccine.

Table 6: Distribution of study subjects based on awareness regarding treatment, investigation, vaccine.

S. No	Question		n=59	Percentage (%)
1	Treatment available	Yes	16	27.1
		No	14	23.7
		Don't know	29	49.2
2	Investigation available	Yes	17	28.8
		No	0	0
		Don't know	42	71.2
3	Vaccine available	Yes	9	15.3
		No	1	1.7
		Don't know	49	83.1

Table 7: Association between age & awareness of participants who heard of H1N1 flu.

Age	Not heard	Heard	Total
Up to 30	15	22	37
31-45	36	21	57
46-60	37	13	50
61 & above	20	3	23
Total	108	59	167

Chi square=16.391; p=0.001 (p<0.05=sig).

Table 7, awareness regarding swine flu decreased as the age of the individuals increased. The association between age and awareness of H1N1 flu was found to be statistically significant.

Table 8: Association between education and awareness of participants who heard of H1N1 flu.

Education	Not heard	Heard	Total
Illiterate	80	10	90
Primary	15	8	23
Secondary	13	33	46
Graduate and above	0	8	8
Total	108	59	167

Chi square=64.441; p=0.000 (p<0.05=highly significant).

As shown in Table 8, awareness regarding H1N1 flu (heard of H1N1 flu) decreased as level of education of the study participants decreased.

Association between level of education and awareness of Participants who heard of H1N1 flu was found to be statistically significant.

As shown in Table 9, majority of the study participants who never heard of H1N1 flu belonged to lower middle and lower socioeconomic status. Awareness regarding H1N1 flu (heard of H1N1 flu) decreased as socioeconomic status of the study participants decreased.

Table 9: Association between socio economic status and awareness of participants who heard of H1N1 flu.

Socio economic class	Not heard	Heard	Total
Upper	0	3	3
Upper middle	4	12	16
Middle	19	9	28
Lower middle	47	15	62
Lower	38	20	58
Total	108	59	167

Chi square=20.02; p=0.000 (p<0.05=highly significant).

Association between socio economic status and awareness of Participants who heard of H1N1 flu was found to be statistically significant.

DISCUSSION

In this study, out of 167, only 59 (35%) participants previously heard about the disease H1N1 flu which was lower than other studies. In a study conducted by Kumar et al, among rural population of Belgaum district, Karnataka in India reported 79.6% of the participants had previously heard about swine flu.[9] Similarly study by Kumari in rural area of Jammu also found that more than 90% had heard of swine flu, knew prevalent season and had knowledge of disease symptoms.[10] Also other studies like Bharadva et al in Bhuj, Shilpa et al.[11,12] Singh et al, Anusha et al reported that more number of participants previously heard of swine flu.[13,14] In this study, lower level of awareness among the rural people may be due to their illiteracy (53.9%).

Regarding awareness about communicability of H1N1 swine flu, 44 (74.6%) respondents said disease is communicable. Others 12 (20.3%) participants were not aware of communicability of the disease. In a study conducted by Dayanand et al in Nepal found that, 58.5% people were aware about the swine flu as a communicable disease while Rathi et al reported that 96% of the Vadodara population in their study were aware that influenza is an infectious disease.[15,16]

When asked about causes of swine flu disease, majority of them 26 (44.1%) didn't know the cause of H1N1 flu. Those who knew about H1N1 flu, among them relatively less proportion i.e. 19 (32.2%) knew the cause correctly i.e. H1N1 virus. Others, i.e. 11 (18.6%) said cause is mosquito, flies and by touch etc. Other studies reported higher level of awareness regarding the etiological agent of swine flu disease. Kumari et al reported that causative agent being a virus was not very well known to both males (27.1%) and females (32.3%).[10] Rathi et al in their study, revealed that, a substantial number of participants have adequate knowledge regarding causative organism (87%) while Singh et al reported 64.3% of the participants them knew about the H1N1 virus in the study.[13,16] Bharadva et al and Kamate et al reported 51.2%, 40.4% of awareness of the cause of disease respectively.[11,17]

Almost half of the subjects identified that infection spreads through droplets of coughing and sneezing of infected person (49.2%). And 26 (44.1%) responded that they were not aware of mode of transmission of the H1N1 flu. Kumar et al in their study among rural population found that a majority i.e. 67.3% did not know the mode of spread of the H1N1 flu, while only 26.6% said that it was through the inhalation route.[9] In contrast to this study other studies reported higher level of awareness regarding transmission of the H1N1 flu. Rathi et al, Shilpa et al, Bharadva at al reported 45%, 56.0%, 60% of awareness among study participants respectively.[11,12,16] But Dayanand et al in their study in Nepal revealed that more than 80% of respondents stated swine flu can spread through air and working with infected pigs.[15] But Kumari et al found that 77.4% of the participants knew about transmission of H1N1 flu.[10]

Among only those who were aware of the disease, only 66% participants were aware of few symptoms like fever and cough, sneezing and running nose, headache, sore throat, muscle and joint pains. 33.9% were not aware of any symptoms. Similarly Kumar et al in their study among rural population reported that fever was known to 80.9% while 50.8% and 51.8% of the respondents knew cough and cold respectively.[9] Shilpa et al reported that a common symptom of Swine flu such as fever was known to 82.6% while 72.3% and 55.4% of the respondents knew cough and cold as a symptom respectively.[12] Also Dayanand et al found regarding symptoms, around half of the respondents knew fever, cough, sneezing and running nose are major sign and symptoms of swine flu.[15] Good knowledge was found in both sexes regarding sign and symptoms of the disease (92%) in a study conducted by Kumari et al in a rural population of Jammu region.[10]

In this study, regarding treatment and investigation availability for swine flu, only 28.8% people had knowledge. But only 15.3% people were aware about the vaccine availability for the disease. In a study conducted by Kumar et al, 32.7% were aware of free treatment and testing facilities by the government.[9] Kumari et al reported that awareness of availability of its treatment was 88.8%.[10] Shilpa et al reported in their study that half of the participants 50.5% knew there was treatment available and testing facilities by Government for swine flu, while only 10.3% of them had heard about the drug Tamiflu.[12] Only few, i.e., 15.8% of them were aware of swine flu vaccine and 16.3% among them were willing to take it. Dayanand et al found in their study, that 93% respondents were unaware about medicine to treat swine flu and 60.6% of them did not know about diagnostic test of swine flu.[15] Bharadva et al reported that 46.9% knew that Influenza A (H1N1) can be diagnosed by Lab test.[11] More than half (59%) knew that treatment is available for disease. Also Naik et al revealed in their study that 53% were aware of test to detect H1N1 flu.[18]

When study participants were asked regarding vaccine of H1N1 flu, survey revealed that only 15.3% people were

aware about the vaccine availability for the disease. Similarly Kumari et al, Bharadva et al, Anusha et al revealed in their study that knowledge about preventing vaccine was low.[10,11,14]

In this study, preventive measures like covering the mouth and nose while coughing and sneezing, frequent hand washing with soap and water and to avoidance of crowded places and contact with sick people was known to 32 (54.23%) while 27 (45.8%) had no knowledge of preventive measures. Similarly In a study by Shilpa et al reported that use of mask/handkerchief as a preventive measure against swine flu was known to 81.5%, others said it could be prevented by maintaining personal hygiene 37.0%, avoiding crowded places 32.1% etc.[12] Kumar et al in their study revealed that the use of the facemask as a preventive measure was known to 45.7% of the study population while others said that it could be prevented by maintaining personal hygiene (30.2%), avoiding crowded places (15.1%), not going to school (9%), by taking Ayurvedic (2%) and homeopathic treatments (1.5%), killing pigs (4.5%), and staying at home (12.1%), while a few (2%) were not aware about how to prevent swine flu.[9] Rathi et al in their study among literate urban adult population of Vadodara, respondents said disease is preventable and they were aware about preventive measures like frequently washing hands, avoid going out and in crowded places.[16]

In this study, when asked about the people who are at high risk of getting infected, majority of them were not aware i.e. 36 (61%). Only 23 (38.98%) people were aware that working in crowds, poultry and health personnel have more chances of getting this infection.

When asked whether swine flu causes death, only few of the study subjects among those heard were aware that swine flu can cause death, 15 (25.4%) and majority were not aware, 38 (64.4%). Only 6 (10.2%) participants said swine flu does not cause death.

Tele media was the most common source of information to the study population, 45 (76.3%) in this study. Similarly Kumar et al, Singh et al, Bharadva et al, Anusha et al reported that tele media was the most common source of information of H1N1 flu.[9,11,13,14]

CONCLUSION

Overall awareness regarding H1N1 flu was low among rural adults. Low awareness denotes poor mass media coverage in rural community. As most of the participants are illiterates, use of TV and mass media as an effective media to dissipate information must be utilized to maximum. Awareness generated by health staff is not significant. Health workers at primary level should be equipped with knowledge and skills in order to create awareness and organize Health education sessions in all areas which can be made more effective by involving public health professionals to develop communication messages.

ACKNOWLEDGEMENTS

We would like to thank Honourable Director cum Vice Chancellor of SVIMS, Sri Padmavathi Medical College (W), Tirupati, Dr T. S. Ravikumar for his encouragement. We are thankful to PHN, Mr S.Shareef for his help during the study. We thank participants of the study for their cooperation.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Park K. Textbook of preventive and social medicine. 24th edition. Jabalpur: Banarasidas Bhanot Publishers; 2017: 163.
2. WHO (2012), Weekly Epidemiological Record, No.47, 2012.
3. WHO 2014, Fact Sheet, 2014.
4. Kitler ME, Gavinio P, Lavanchy D. Influenza and the work of the World Health Organization. Vaccine. 2002;20:5-14.
5. WHO. Weekly epidemiological record, No.41, 2009.
6. Govt. of India (2015), National health profile 2015, central bureau of health intelligence, ministry of health and family welfare, New Delhi.
7. WHO (2010), WHO Recommendations for the post-pandemic, Pandemic (H1N1) 2009 briefing note 23.
8. WHO (2011), Weekly Epidemiological Record, No. 43, 2011.
9. Kumar PBA, Karnum S, Kumar SY, Ugargol AR, Naik VA, Mallapur MD. Pandemic influenza A H1N1 awareness in a rural community of North Karnataka, India. Trop J Med Res. 2015;18:74-9.
10. Kumari R, Gupta RK, Langer B, Verma A. Assessment of Knowledge and Practices towards Swine flu: A cross-sectional study among rural housewives. Indian J Comm Health. 2016;28(1):35–41.
11. Bharadva N, Mehta S, Yerpude P, Jogdand K, Trivedi K. Knowledge, Attitude and Practice Regarding Swine Flu (H1N1) among People Accompanying Patients of a Tertiary Health Care Centre, Bhuj. Natl J Community Med. 2018;9(1):1-4.
12. Shilpa K, Praveen Kumar BA, Kumar SY, Ugargol AR, Naik VA, Mallapur MD. A study on awareness regarding swine flu (influenza A H1N1) pandemic in an urban community of Karnataka. Med J DY Patil Univ. 2014;7:732-7.
13. Singh S, Kaur P, Singh G. Study to Assess the Awareness, Perception and Myths regarding Swine Flu among Educated Common Public in Patiala District. Int J Res Dev Health. 2013;1(2):54-60.

14. Anusha M, Kusneniwar GN, Sastry Ch. Awareness and Practices Regarding Swine Flu among Individuals Attending Urban Health Centre in Medchal-Malkajgiri District, Telangana State. J Med Sci Clin. 2018;6(4):323-8.
15. Dayanand G, Rana MM. Knowledge, awareness, practice and preventive measures regarding swine flu among community people: a cross sectional study from Pokhara, Nepal. Med Sci. 2015;3(2):225-32.
16. Rathi S, Gandhi H, Francis M. Knowledge and Awareness about H1N1 Flu in Urban Adult Population of Vadodara, India study, Electronic Physician. 2011;3:392-5.
17. Kamate SK, Agrawal A, Chaudhary H, Singh K, Mishra P, Asawa K. Public knowledge, attitude and behavioural changes in an Indian population during the Influenza A (H1N1) outbreak. J Infect Dev Ctries. 2010;4:7–14.
18. Naik JD, Jain S, Babar SD, Mathurkar MP, Kamble SV, Patil V. A study on Awareness Regarding Swine Flu (Influenza A H1N1) Pandemic in an Urban Community of Maharashtra. Sch J App Med Sci. 2015;3(8):2991-4.

Cite this article as: Ade AD, Yamasani B, Kondagunta N. Awareness of H1N1 influenza (swine flu) among rural population of Chittoor district, Andhra Pradesh. Int J Community Med Public Health 2018;5:5171-7.