

SHORT ARTICLE

Knowledge, Attitude and Practices regarding Swine Flu among adult populationHarjot Kaur¹, Tanvir Kaur Sidhu², Parampal Singh Coonar³¹PG Student, ²Professor, ³Professor & Head, Department of Community Medicine, Adesh Medical University, Bathinda, Punjab, India

Abstract	Introduction	Methodology	Results	Conclusion	References	Citation	Tables / Figures
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Kaur H, Sidhu TK, Coonar PS. Knowledge, Attitude and Practices regarding Swine Flu among adult population. Indian J Comm Health. 2015; 27, 3: 402-410.

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Introduction: Prevention is the most appropriate measure to control H1N1 flu pandemic and awareness of H1N1 flu is ranked very high in preventive measures. Keeping this in view, study was designed to assess the awareness level and to compare it among urban and rural participants. **Aims and objectives:** To assess the knowledge, attitude and practices regarding swine flu among adult population, to assess whether there is any difference among rural and urban population and to assess the response generated by the media coverage and the Government efforts. **Methods:** This cross-sectional study was done from April to July 2015 on 300 houses from the urban area and 150 houses from rural area, chosen from study population by random sampling. Mean and standard deviation for continuous variables and percentages for categorical were calculated. **Results:** 94% of urban and 91.3% of the rural participants had previously heard about swine flu, main source being TV. 46% of urban and 74% of rural participants had myth about spread of swine flu by eating pork. 41.3% of urban and 8.7% of rural population thought that government measures are sufficient for controlling swine flu. **Conclusion:** Knowledge regarding swine flu pandemic is good among study participants but role of health care providers is minimal and requires more dedicated effort. Lack of awareness among study population regarding some key focus areas like health promoting habits, vaccination and myths regarding the spread is of serious concern and needs to be addressed by the media, health workers and the Government efforts

Key Words (use ;)

H1 N1, Swine Flu

Introduction (Brief and relevant)

Following its emergence in March 2009, pandemic A (H1N1) 2009 virus spread rapidly throughout the world, leading to the declaration of influenza pandemic by World Health Organization on 11th June 2009 (1). On 26th September 2011, WHO adopted a new nomenclature as Influenza A (H1N1) pdm09 (2). The world is now in post-pandemic period, (3).

Swine flu is an acute respiratory disease, caused by a strain of the influenza type A virus known as H1N1, officially referred to as novel A/H1N1. (4) The first

pandemic of influenza occurred in 1918 ("Spanish influenza"). It was attributed to human H1N1 virus and estimated to have affected approximately 500 million persons worldwide (almost 1/5th of the world population), killing 40-50 million worldwide and 10 to 20 million in India with mortality rate of 10% (5, 6). The current circulating novel virus, a remnant of the 1918 virus, first detected in 2009, is the 4th descendant of the 1918 virus that caused the pandemic of 2009-2010, originating in Mexico, followed by on-going spread to all over the world in a short period (4, 7). World Health Organization

(WHO) declared the H1N1 outbreak a public health emergency in April 2009 and on 11 June 2009, the WHO raised its pandemic alert to the highest level, phase 6, meaning that, the A/H1N1 flu had spread in more than two continents as shown in the [Figure 1](#). (9) By June 2010, it had caused over 18,172 deaths in more than 214 countries, overseas territories or communities. (9) The age of patients with confirmed infection ranged from 3 months to 81 years. (10) The information analyzed by CDC supports the conclusion that novel H1N1 flu has caused greater disease burden on people younger than 25 years of age than older people. (11) The number of cases in various countries in last five years has well supported the reason for it being considered as a major threat among emerging disease in the global scenario.

Regarding the spread, India is no exception. It is ranked as 3rd most affected country for cases and deaths of swine flu globally. (12) The highest number of cases was reported in 2009 (27,236), followed by 2010 (20,604) and 2012 (5,054). The highest number of swine flu deaths took place in 2011(1,763), followed by 2009 (981) and 2012 (405). (13) During 2013, India reported 5,253 cases and 699 deaths, a case fatality rate of 13.3%. (14) In 2014, a total of 218 people died from H1N1 flu, with 937 cases during the year. (15) During the past six years, the world has been strengthening its preparedness while trying to understand the virus and its mode of spread. (16)

In 2015, data collected by the Union Health Ministry till April 4, 2015 said that 2,123 persons had perished due to the contagious disease while 34,636 people had been affected by it across various states with most deaths reported from Rajasthan and Gujarat. (17) In a northern state of India, Punjab, total no. of confirmed cases was 252 and 40 deaths during 2009-10, 46 cases and 23 deaths in 2011, 16 cases and 3 deaths in 2012, 182 cases and 42 deaths in 2013, 23 cases and 3 deaths in 2014 and 80 cases and 26 deaths till 19 feb 2015. (18)

The pandemic was declared as ended in August 2010, and is now predicted to continue circulation as a seasonal virus for years to come. (7)

Prevention is the most appropriate measure to control H1N1 flu pandemic and awareness of H1N1 flu is ranked very high in preventive measures. Moreover, awareness among the adults of society will act as a better indicator of the level and the quality of the response generated by the awareness drives of the Government.

The Government of India claims that it has been successful in providing information to people on swine flu. According to Information & Broadcasting minister, television channels have played a major role in educating people by inviting doctors and experts in their studios every day to provide information about the deadly virus (19). Trust in Government/media information has been more strongly associated with greater self-efficacy and personal hygiene; whereas trust in informal information has been strongly associated with perceived health threat and avoidance behaviour (20).

A study done in UK observed that during the swine flu outbreak, uptake rates for protective behaviours and likely acceptance rates for vaccination were low. One reason for this may in part be explained by the low level of public worry about the possibility of catching swine flu. When levels of worry are generally low, acting to increase the volume of mass media and advertising coverage is likely to increase the perceived efficacy of recommended behaviours, which, in turn, is likely to increase their uptake, (21). The best we citizens can do is to keep ourselves informed about the happenings and the steps we can take to prevent the spread of swine flu (22).

The distribution of proper information to the public on the status of the H1N1 virus pandemic is important to create awareness of the potential risks and the optimum code of behaviour during the pandemic. Keeping all this in view the study was designed to assess the awareness level regarding Swine flu and to compare it among urban and rural adults

Aims & Objectives

1. To assess the knowledge, attitude, and practices regarding Swine flu among adult population.
2. To assess whether there is any difference of knowledge, attitude and practices among rural and urban population
3. To assess the response generated by the media coverage and the Government responses

Material and Methods

The present cross-sectional study was carried out from April 2015 till July 2015.

The urban study area, Bhucho Mandi, is a Municipal Council city in district of Bathinda, Punjab. The Bhucho Mandi city is divided into 13 wards, having population of 14,961. (22) Survey was done in the area covered by urban health centre Bhucho Mandi

i.e. wards number 1,2,3,4,5,10,12 and 13. Rural study population consists of residents of the area covered by Rural Health and Training Centre, Bhalaiana which has population of 7014.

Sample size: To calculate the sample size, the following formula has been used:

$$n = \frac{Z^2 P(1-P)}{d^2}$$

Where n = sample size,

Z = Z statistic for a level of confidence,

P = expected prevalence or proportion (In proportion of one; if 50%, P = 0.5), and

d = precision (in proportion of one; if 5%, d = 0.05).

Z statistic (Z): For the level of confidence of 95%, which is conventional, Z value is 1.96.

Putting the prevalence of 50% with allowable error of 5%, the calculated sample size comes out to be 400. For this study, according to proportionate population, 300 houses have been taken from urban area and 150 from rural area, which have been chosen from the study population by random sampling.

Inclusion criteria: One adult informant (chosen randomly) in each selected rural and urban house.

Exclusion criteria: Locked and proforma with incomplete information.

All the selected participants were interviewed through pre-tested and pre-designed questionnaire. This pre designed instrument consists of socio-demographic characteristics (age, sex, education and occupation), knowledge and awareness about the disease (nature, mode of spread/transmission, clinical features and preventive measures). The self-rated instrument was drafted in a close ended manner into local vernacular language (Punjabi) and translated into English language. Respondent had an option to select the preferred language. There were no refusals, as complete anonymity was ensured. The information thus collected was computerized in specific programme developed on Microsoft excel 2007 software. Mean and standard deviation for continuous variable and percentages for categorical variables were calculated.

Results

Study population constituted 300 households from urban and 150 houses from rural area. Demographic details of the participants are given in [Figure 2](#) 6% of urban subjects and 8.7% subjects out of rural area had no previous knowledge of Swine flu ([Figure 3](#)).

In urban and rural areas, various sources of information were found as depicted in [Figure 4](#)

In the present study, out of urban study subjects, 46% had myth regarding spread of swine flu by eating pork, while in rural area, 74.7% had this myth. 77.7% of urban and 74% of rural participants believed that it can be prevented and common mode of prevention i.e. hand washing was known to 84.7% from urban and 81.3% of the respondents from rural area. ([Table 1](#))

In urban area, only 37.7% knew about the vaccine for swine flu and only 32.7% thought it can protect them from swine flu, while this percentage was 27.3% and 70.7% for rural area respectively. 41.3% in urban and 36% in rural area believed that it is curable.

26% of urban and 67.3% of rural people said that their life had been affected by swine flu.

Only 41% of urban and 31.3% of rural people were interested in having vaccination for swine flu, and 39.3% of urban participants and 36% of rural participants had fear of adverse reactions of the vaccine. ([Table 2](#))

In urban area, 85.6% people covered their face with tissue/ handkerchief while coughing or sneezing and 2% people used to spit in public areas. Similarly in rural area, 85.3% covered their face while coughing / sneezing and 2.7% used to spit in public places. 89% of urban and 68% of rural people washed their hands after going toilet but only 57% of urban and 34.6% of rural people used soap for hand washing. Regarding face mask, 65.7% of urban and 38% of rural people had never used it, while 32.6% of urban and 58.6% of rural people used it when having cough, cold and runny nose. 70.6% of urban respondents and 82% of rural people avoided unnecessary visit to crowded places as a precautionary measure. 92% of urban and 84.6% of rural study subjects preferred wearing a face mask at crowded areas. 92.3% of urban and 91.3% of rural people washed hands frequently specially after shaking hands with others. 46.3% of urban and 6.6% of rural participants preferred going to a doctor on experiencing the symptoms similar to the flu. 20.6% of urban people and 29.3% of rural people were using cardamom and kapoor as a preventive measure against swine flu.

Discussion

Few epidemiological studies on H1N1flu are available in India because of its recent origin. This is the first study of its kind comparing urban and rural

population regarding the awareness levels in this northern state of India as per best of our knowledge. The results of the present study depict a range of knowledge, attitudes and self-reported behavioural patterns concerning H1N1 influenza pandemic among a sample of urban population as well as rural population.

Comparing with other studies, in our study, 94% of participants among urban population and 91.3% of the rural participants had previously heard about swine flu, which was comparable to other studies (88% in Patiala(23), 94% in Vadodara(24), 97% in Bareilly (25) and & 100% in Egypt(26)), which may be due to awareness and interest regarding health issues in our study population area due to advertisement and other efforts by the Government . Present study constituted more of male participants, which were similar to a study done in Patiala (23) and Karnataka (27) while female participants were more in a study done by Latiff et al. in Kuala Lumpur, Malaysia (28) and Lin et al. (29) of China. Tele media was the most common source of information in our study which was similar to other studies as well. (23, 26, 27, 30) Health care providers as a source of information were very minimal.

In the present study, out of urban study subjects, 46% had myth regarding spread of swine flu by eating pork, while in rural area, 74% had this myth, similar to the observation made by Singh et al. (23) which was 40.6%. In this study, 92% of urban and 84.7% of rural people preferred using face mask in crowded areas, while it was low in studies done by Singh et al. 56% (23) and Farahat et al. 14.3%. (26) This may be because of good tele-media facilities available in the area.

Frequent hand washing specially after shaking hands with others was practiced by 92.3% of urban participants and 91.3% of rural, which is identical to study in Karnataka (92.4%) (27), but less in other studies (26), (30), (31). In our study, 70.6% of urban and 82% of the rural participants avoided crowded places, while it was 52.6% in a study done by Kamate et al (31), 32.1% in a study carried out in Karnataka (27) and 40.0% in Haryana (32).

In our study, hand washing as a personal hygiene, which is a very effective way to prevent swine flu transmission, was known to 84.7% from urban and 81.3% of the respondents from rural area similar to the study by Rubin et al (21) which reported 87.8% of the interviewers believing in the role of hand

washing in reducing swine flu transmission. The study done by Farahat et al, (26) demonstrated that, 31.9% of participants believe that, staying at home when infected until cured is better, while in our study only few around 1% among urban and 3.3% among rural people stayed at home.

Comparing rural and urban data, the knowledge about the disease was good among both the areas. Major difference was found in the myth regarding spread of the disease by eating pork. In urban population, 46% had the myth regarding spread of swine flu by eating pork, while in rural area, 74% had this myth. Satisfaction with the Government efforts was very less among rural population. 41.3% of urban and only 8.7% of rural population thought that Government measures were sufficient for controlling swine flu, which was found to be statistically significant. Hand washing was also less among rural population. 68% of rural people washed their hands after going toilet while this percentage was 89% in urban but only 34.6% of rural people used soap for hand washing while in urban area, this percentage was 57%. Health seeking behaviour was less in rural population. 6.6% of rural participants preferred going to a doctor on experiencing the symptoms similar to the flu while it was 46.3% in urban area.

Though overall differences were observed among rural and urban knowledge, attitude and practices but most of these differences were not found to be statistically significant. This suggests that these days due to better modes of communication and health care, the knowledge and behaviour of rural and urban population is quite comparable.

The triad of knowledge, attitudes, and practices in combination governs all aspects of life in human societies, and all three pillars together make up the dynamic system of life itself. Therefore, they are all linked together in a way so that any increase in knowledge would lead to changes in attitude toward the prevention of influenza A H1N1 as well as changes in the kinds of practices that are followed regarding the prevention of H1N1 influenza. (26)

As prevention is the most appropriate measure to control H1N1 flu pandemic and awareness of H1N1 flu is ranked very high in preventive measures, the distribution of proper information to the public on the status of the H1N1 virus pandemic is important to achieve awareness of the potential risks and the optimum code of behaviour during the pandemic.

Conclusion

This study investigated the levels of knowledge, attitude and practices regarding H1N1 influenza pandemic and may help to provide scientific support to assist health sector authorities in developing strategies and health education campaigns to prevent transmission of H1N1 influenza and related pandemics.

Overall, knowledge regarding swine flu pandemic was good among study participants. Most of the urban participants had health seeking behaviour which was less in rural population. But health care providers as a source of information were very minimal. They should take this opportunity and maximize their efforts in providing health education as they are nearer to the community. A regular training program, health education sessions, seminars, workshops and symposia need to be designed and implemented with the aim of capacity building of the peripheral health workers, also involving public health professionals, so as to make them competent and to update their knowledge, thus enabling them to create awareness in all areas of urban as well as rural masses

Recommendation

We recommend, in the light of study findings, that however, people are aware of swine flu and risks associated with it but still they have some myths regarding this disease, which are more in rural area. Government should focus in providing scientific and effective information through the prime media in the rural areas too. Lack of awareness among rural population regarding key focus areas like hand washing with soap, swine flu not being spread by eating pork and lack of motivation for vaccination among both rural and urban population also needs to be addressed by the media, health workers and the Government efforts

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Tables

TABLE 1 KNOWLEDGE REGARDING TRANSMISSION, SYMPTOMS, PREVENTION AND TREATMENT

Questions	Urban n=300		Rural n=150		p value (for differences b/w urban and rural population)
	Yes	No	Yes	No	
Can people contract H1N1 influenza from pigs and other animals?	126 (42%)	174 (58%)	47 (31.3%)	103 (68.7%)	0.25
Can people contract H1N1 influenza from another person?	255 (76%)	45 (15%)	106 (70.7%)	44 (29.3%)	0.095
Can people contract H1N1 influenza by eating pork ?	138 (46%)	162 (54%)	112 (74.7%)	38 (25.3%)	0.614
Can people contract H1N1 influenza from inhaling particles that contain the H1N1 influenza virus ?	228 (76%)	72 (24%)	75 (50%)	75 (50%)	0.726
Are pig farm (hog lot) farmers more likely than other people to have the H1N1 influenza virus ?	136 (45.3%)	164 (54.7%)	112 (74.7%)	38 (25.3%)	0.091
Are symptoms of H1N1 influenza similar to other influenzas?	200 (66.6%)	100 (33.3%)	68 (45.3%)	82 (54.7%)	0.407
Symptoms:	206 (68.7%)	94 (31.3%)	125 (83.3%)	25 (16.7%)	0.453

Are muscle aches a common symptom of H1N1 influenza?					
Is severe cough a common symptom of H1N1 influenza?	204 (68%)	96 (32%)	114 (76%)	36 (24%)	0.015
Preventive measures: Is H1N1 influenza preventable?	233 (77.7%)	67 (22.3%)	111 (74%)	39 (26%)	0.144
Is a vaccine currently available for H1N1 influenza?	113 (37.7%)	187 (62.3%)	41 (27.3%)	109 (72.7%)	0.395
Can regular seasonal flu shots protect you from H1N1 influenza?	98 (32.7%)	202 (67.3%)	106 (70.7%)	44 (29.3%)	0.952
Can proper hand washing protect you from H1N1 influenza?	254 (84.7%)	46 (15.3%)	122 (81.3%)	28 (18.7%)	0.753
Can sneezing properly in a paper towel or tissue paper protect you or others from H1N1 influenza?	230 (76.7%)	70 (23.3%)	128 (85.3%)	22 (14.7%)	0.009
Treatment: Is swine flu curable?	124 (41.3%)	176 (58.7%)	54 (36%)	96 (64%)	0.371
Are antibiotics commonly used to treat H1N1 influenza?	224 (74.7%)	76 (25.3%)	58 (38.7%)	92 (61.3%)	0.315

TABLE 2 ATTITUDE REGARDING SWINE FLU

Questions	Urban n=300		Rural n=150		p Value
	Yes	No	Yes	No	
1. Is the disease dangerous?	283 (94.3%)	17 (5.7%)	127 (84.7%)	23 (15.3%)	0.094
2. Can it cause death in humans?	272 (90.7%)	28 (9.3%)	124 (82.7%)	26 (17.3%)	0.062
3. Do you worry about suffering from H1N1?	177 (59%)	123 (41%)	114 (76%)	36 (24%)	0.306
4. Has your daily life been disturbed by H1N1	78 (26%)	222 (74%)	101 (67.4%)	49 (32.7%)	0.086
5. Interest in knowing the methods of prevention	260 (86.7%)	40 (13.3%)	121 (80.7%)	29 (19.3%)	0.189
6. Are the protective measures sufficient for prevention?	183 (61%)	117 (39%)	75 (50%)	75 (50%)	0.003
7. Would u take the vaccine?	123 (41%)	177 (59%)	44 (29.3%)	106 (70.7%)	0.692
8. Be afraid of H1N1 vaccine's adverse reaction?	118 (39.3%)	182 (60.7%)	54 (36%)	96 (64%)	0.068
9. Interesting in following the disease news.	211 (70.3%)	89 (29.7%)	123 (82%)	27 (18%)	0.035
10. Available information.	Sufficient = 152 (50.7%)	Insufficient=148 (49.3%)	Sufficient= 47 (31.3%)	Insufficient= 103 (68.7%)	0.586
11. Measures taken by government.	Sufficient= 124 (42%)	Insufficient=176 (58%)	Sufficient= 13 (8.7%)	Insufficient= 137 (91.3%)	0.039

Figures

FIGURE 1 PANDEMIC (H1N1) 2009 AFFECTED COUNTRIES AND DEATHS

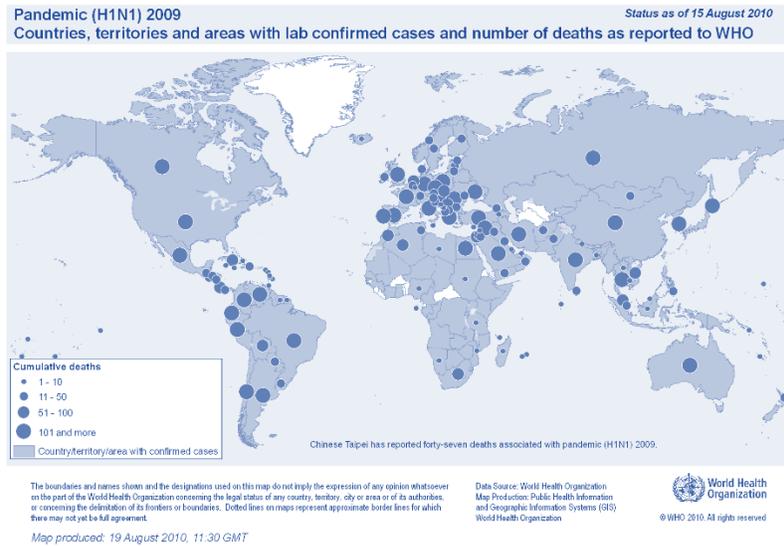


FIGURE 2 DEMOGRAPHIC DATA OF THE PARTICIPANTS

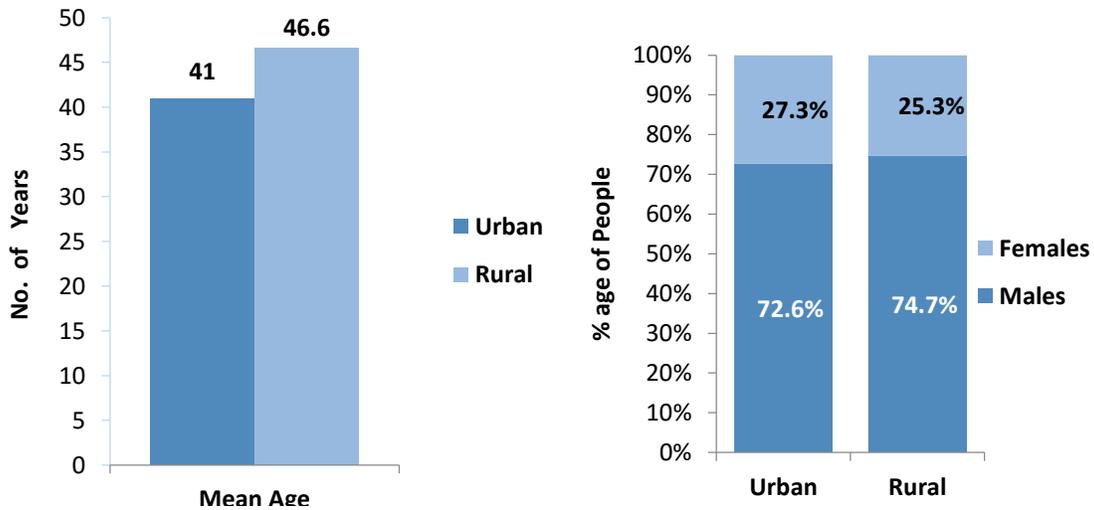


FIGURE 3 EDUCATION OF THE PARTICIPANTS

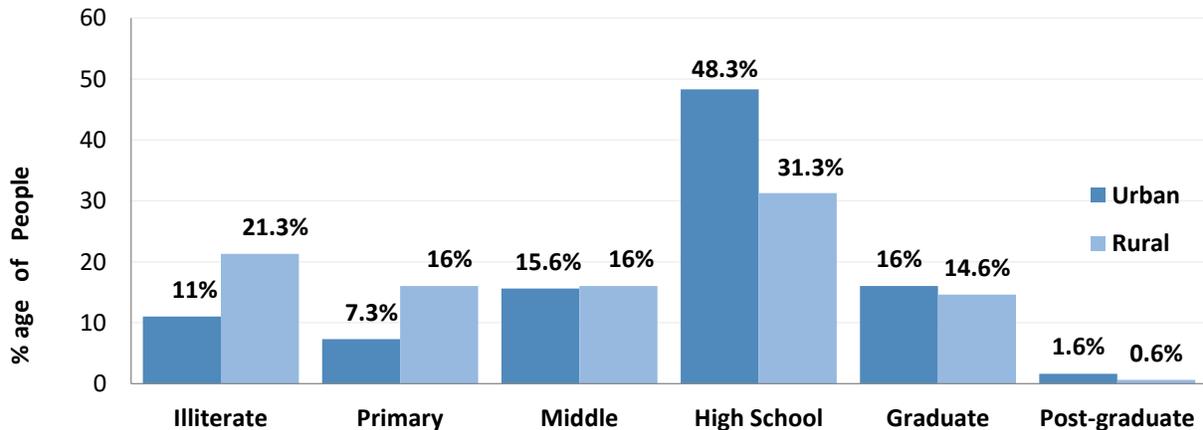


FIGURE 4 CURRENT KNOWLEDGE OF H1N1

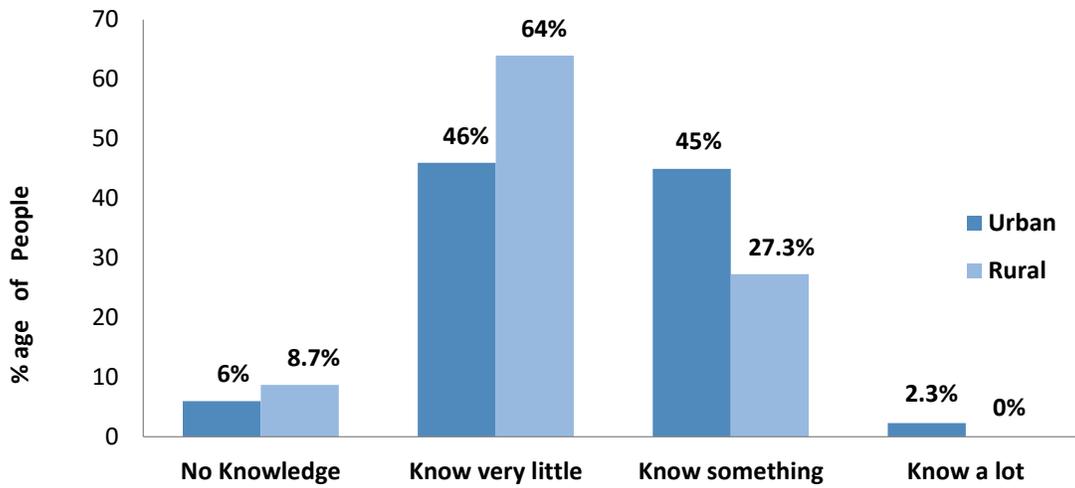


FIGURE 5 OCCUPATION OF THE PARTICIPANTS

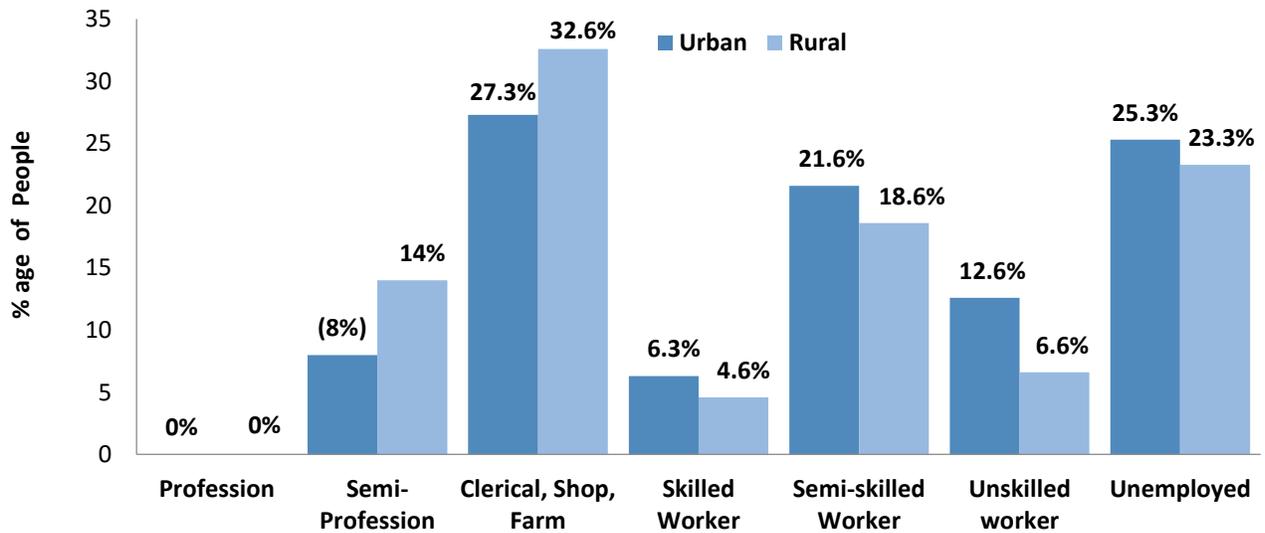


FIGURE 6 SOURCES OF INFORMATION ABOUT SWINE FLU

