Pandemic Influenza A (H1N1): knowledge among senior health workers at a secondary health care institution in Southwest, Nigeria

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Abstract

Objective: This study was conducted to assess the level of knowledge of influenza A (H1N1) infection among health care workers in a secondary health care facility in Osogbo, Southwest Nigeria.

Methods: A structured questionnaire assessing participants'knowledge of swine influenza viruses, mode of transmission, clinical criteria, primary prevention, indications for emergency care, care of affected persons and ongoing pandemic of Influenza A H1N1 was hand-delivered to all senior health care workers working in the hospital.

Results: The mean age of the respondents was 40.4±9.6 years. The majority (59.3%) were females. Television (73.6%) radio (61.5%), newspapers (44%), other health workers (31.9%), and internet (15.4%) were the main sources of information about influenza A H1N1. Nearly all (92.3%) felt that their source of information about the disease was inadequate. About half (51.6%) knew the virus can be transmitted from one person to another. Majority identified correctly the symptoms of infected victims such as fever (83.5%), and runny nose (79.1%). Most (87.9%) identified hand washing with soap and water as a mode of preventing transmission. Most (83.5%) felt an infected person should be isolated while very few knew oseltamivir (13.2%) and zanamivir (17.6%) are drugs to treat. Multivariate linear regression analysis identified, male sex (p=0.029), internet as a source of information (p=0.029) and knowledge of prevention of H1N1 (p= 0.005) as factors that were significantly associated with a high knowledge score on the current pandemic.

Conclusion: There is a need to provide comprehensive information to health workers on the current pandemic.

Keywords: knowledge, health workers, pandemic influenza A H1N1, health care institution.

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Introduction

In April, 2009, the World Health Organization (WHO) received reports of a sustained person to person transmission with a new influenza A (H1N1) virus in Mexico and southern California.[1,2] Since then, the virus has spread across all WHO regions resulting in various levels of morbidity and mortality.[2,3,4,5,6]The important tools to fight the pandemic include a clear case definition, an aware health care system, an informed public, and the availability of a vaccine.[6,7,8,9] Clinical case description was an acute febrile respiratory illness (fever >38°C) with a spectrum of disease from influenza like illness to pneumonia. A confirmed case is defined as an individual with laboratory confirmed swine influenza A(H1N1) virus infection by one or more of the following tests; real time (RT) PCR, viral culture or four-fold rise in swine influenza A(H1N1) virus specific neutralizing antibodies.[4,5,]

Nigeria recorded cases of laboratory confirmed swine flu following report of the first case in Mexico[10]. The Federal Ministry of Health (FMOH) of Nigeria has embarked on strengthening the country's surveillance capacity to detect cases by sensitizing surveillance officers from her component States. In addition, public enlightenment activities for case reporting and prevention have commenced. However, these efforts have not been complemented by similar efforts at the lower levels of government. Nigerians travel worldwide and the spread of such cases of influenza to different parts of the country

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is likely to take place over time. Osogbo where this study was conducted, is a tourist center and a State capital in Nigeria. It continued to host people of different nationalities during the Osun Osogbo festival held yearly at the Osun shrine, a United Nation Educational and Scientific Organization (UNESCO) heritage site. The State hospital Osogbo, a tertiary health facility, is located about 5 kms from the site, attends to patients from all over the southwestern part of the country and beyond with an average of 1000 patient consultations per day.

Health care workers constitute an important group to target in implementation of measures to respond to an outbreak. In addition, they are a high risk group in the transmission of the disease by nature of their work. There has not been a formal sensitization activity for health care workers at the Osogbo State Hospital or their baseline knowledge about the pandemic determined. This study, was conducted to assess the level of knowledge of health workers at the hospital on the prevention and control of the ongoing pandemic of influenza A (H1N1).

Methods

This study employed a cross sectional study design. A structured questionnaire assessing participants' knowledge of swine influenza viruses, mode of transmission, clinical criteria, primary prevention, indications for emergency care, care of affected persons as well as their knowledge of the current pandemic of Influenza H1N1 was hand-delivered to all 97 senior health care workers, including doctors, nurses, pharmacist, physiotherapists, laboratory scientists, and senior technicians working in the State Hospital Osogbo, in July 2009. Other information obtained included the socio-demographic characteristics, sources of information on the pandemic, adequacy of the information and the opinion of the respondents on the likelihood of spread of disease in Nigeria. Data obtained was entered and analysed using SPSS version 15 software. Knowledge score was computed for each aspect of knowledge assessed. A score was awarded for each correct answer and zero for wrong answers giving a minimum and maximum aggregate score of 0 and 62 respectively for each respondent. A regression model was developed with knowledge of the current pandemic as a dependent variable to identify associated demographicand other variables. Verbal informed consent was taken before administration of the questionnaire. Furthermore, confidentiality of information obtained was assured. The study was approved by the Osogbo State Hospital institutional review board.

Results

Ninety-one (93.8%) out of the 97 health workers approached, completed and returned the questionnaire. The mean age of the respondents was 40.4 years (range 25-58) and 37 (40.7%) were male. Eighty eight (96.7%) were of Yoruba ethnic extraction. About half 46 (50.5%) of the study participants were nurses and 15 (16.5%) were medical doctors. Other professions included, 12 (13.2%) laboratory scientists, four (4.4%) pharmacists, three (3.3%) pharmacy technicians, five (5.5%) physiotherapists, one (1.1%) prosthetist and three (3.3%) record officers. Seventeen (18.7%) had received secondary and 74 (81.3%) had received tertiary levels of education (Table 1).

Table 1: Socio demographic characteristics of respondents

Sociodemographic characteristics	Frequency n=91	%
Age group (years)		
20-29	16	17.6
30-39	26	28.6
40-49	28	30.8
50 and above	21	23.1
Sex		
Male	37	40.7
Female	54	59.3
Highest level of education		
Secondary	17	18.7
Tertiary	74	81.3
Marital status		
Single	16	17.6
Married	75	82.4
Occupation		
Medicla doctor	15	16.5
Nurse	46	50.5
Lab scientist	12	13.2
Lab techinician	2	2.2
Pharmacist	4	4.4
Records officer	3	3.3
Physiotherapist	5	5.5
Pharmacy technician	3	3.3
Prosthetist	1	1.1

Television (73.6%), radio (61.5%), newspapers (44%), other health workers (31.9%), and the internet (15.4%) were the main sources of information about influenza A (H1N1) reported by participants (Table 2). Nearly all (92.3%) indicated their willingness to obtain more information about swine flu.

Table 2: Health workers sources of information about swine flu

Sources of information*	Frequency	%
Television	67	73.6
Radio	56	61.5
Newspaper	40	44.0
Health worker	29	31.9
Internet	14	15.4
Friends	13	14.3
Poster/leaflet	8	8.8
School	7	7.7
None	4	4.4
Library	3	3.3

*multiple responses are possible

Table 3 shows the mean knowledge scores for each aspect of knowledge assessed. Only 31% knew that swine flu virus is influenza A (HINI). About half (51.6%) knew the virus can be transmitted from one person to another while 31.9% knew that transmission can occur following contact with contaminated objects. Majority identified correctly the symptoms of infected victims such as fever (83.5%), cough (73.6%) and running nose (79.1%). Most participants (87.9%) identified hand washing with soap and water as a mode of preventing transmission but only half (50.5%) of the respondents knew that avoiding touching the face, nose, mouth and eyes with contaminated hands prevented transmission. Indications for emergency care reported included dyspnoea (89%), chest pain (72.5%) and confusion (38.5%).

Table 3: Knowledge of Influenza H1N1 by respondents

Knowledge areas assessed	Mean Scores*
Knowledge of swine flu viruses	0.8±1.1 (5)
Mode of transmission	2.5±1.1 (5)
Common sign/symptoms	5.9±3.1 (10)
Knowledge of primary prevention	4.3±2.3 (8)
Knowledge of secondary prevention	5.8±2.8 (11)
Knowledge of indications of emergency care	4.3±2.4 (8)
Knowledge of care of infected persons	3.0±2.0 (8)
Knowledge about the current pandemic	3.1±1.4 (7)
Overall knowledge score	30.8±11.3 (62)

*± standard deviation per knowledge area assessed (maximum score)

Majority (83.5%) agreed that an infected person should be isolated while very few knew oseltamivir (13.2%) and zanamivir (17.6%) are antiviral drugs recommended for treatment. Forty-five (49.5%) participants were aware that swine flu was first reported in Mexico while 53 (58.2%) knew that the Federal Government has commenced public sensitization about a possible outbreak of swine flu in Nigeria. The overall mean knowledge score was 30.8 ±11.3 from a maximum score of 62. On health workers rating of likelihood of spread of the swine flu outbreak in Nigeria (0 = not likely, 10 = most likely), thirty-two (35.2%) respondents felt swine flu is not likely to spread in Nigeria. Multivariate linear regression analysis identified, male sex (p=0.029), internet as a source of information (p=0.029) and knowledge of prevention of influenza A (H1N1) (p= 0.005) as factors that were significantly associated with an increase in the knowledge score on the current pandemic.

Discussion

Since health workers attend to various patients in their day to day activities there is a need to put preventive strategies in place to identify cases, protect staff and treat identified cases. This study showed that the health care workers interviewed demonstrated fair but incomplete knowledge about influenza A (H1N1). This finding is similar to the finding in Iran, in a similar study, which assessed the knowledge, attitude and practices of health care workers to influenza infection.[11] On a 35 item knowledge scale, the study reported a mean knowledge score of 17.4. In another study by Ofstead et al, the mean of 9.6 correct responses out of 13 was found[12]. Other studies, have reported a high[13, 14] and low[15] knowledge among Health care workers.

In the present study, knowledge of the ongoing pandemic was higher among male health workers, and there was no significant association with any other demographic variables assessed. The study in Iran, however, shows that the mean knowledge score of nurses was significantly lower than that of the other groups of health workers.[11] Other studies have demonstrated higher knowledge among medical physicians and dentists.[13,14]

The internet as a source of information was also found to be associated with an increase in knowledge in this study. Studies among poultry workers in Nigeria and Italy, reported relationships between source of information and knowledge of influenza infection.[16,17] Though the pattern of the sources of information was similar in the two

studies, those who had reportedly heard about avian influenza through the mass media; television and radio, tended to have more complete knowledge of the infection than those who had obtained information from other sources. Most of the current and detailed information on influenza A (H1N1) are available and updated regularly on the internet and may be responsible for the observation in this study. However, only 15.4% reported having their source of information from the internet. These findings, however, suggest a need for scaling up of information about the infection in other information sources, which majority of the population had access to such as the radio, and television. There is also the need to make the internet more accessible.

The finding that about a third of the study participants felt that the disease outbreak is not likely in Nigeria is consistent with denial that usually precedes the onset of outbreaks of emerging diseases[18]. In a study on the knowledge of risks of an influenza pandemic, respondents mean predicted probabilities of an influenza pandemic in the following 1, 5 and 10 years were 31%, 44%, and 54% respectively.[19] This could result in a carefree attitude by health workers who felt that the outbreak is not likely, as at the time this survey was carried out, no case had been confirmed in Nigeria. However, this study showed that most health workers interviewed have a positive attitude towards obtaining more information on the disease as reflected by the proportion of participants who indicated their willingness to acquire more knowledge. This is consistent with the finding among poultry workers where perception of risks by respondents was high and respondents indicated their need for more information regarding avian influenza infection.[16,17,20] This attitude stands to reinforce any focused health education intervention programme. The data on health workers demographics indicated that workers were generally middle aged and females. This is similar to health care workers interviewed in other studies.[11,12,13,14]

Conclusion

This study indicated that most of the participating health workers had an incomplete knowledge of the current pandemic of influenza A (H1N1). There is therefore, a need to provide comprehensive information to health workers on the current pandemic by scaling up information about the disease in information sources that are most accessible. The limitation that the study design imposed on generalization to all health workers is recognized. First, the study took place in one out of several health facilities in Osun State. Secondly, information was obtained from senior health workers who were on duty during the month of the survey. Health workers on official leave, travels or off duty during the period may have been excluded and information on their characteristics with those of the non responders are unknown. These senior health workers might be expected to give advice on this issue to more junior members of staff, patients and other members of the public, whose knowledge of influenza A (H1N1) is likely to be even less. The study has, however, provided an evidence of the educational gap among health workers in the institution on which basis an intervention could be designed.

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