

Awareness on Avian Influenza among the Workers of Selected Poultry Farms in Dhaka City

Sheikh Shahidul Islam¹, Md. Saiful Islam², SM Humayun Kabir³, Masuda Begum⁴, Mesbah *Uddin Ahmed⁵, Muhammad Moinuddin⁶

¹GSO-1, HQ ARTDOC, Mymensingh Cantonment, Bangladesh

²Department of Laboratory Medicine, BSMMU, Bangladesh

³Assistant Director Medical Services, Shaheed Salahuddin Cantonment, Bangladesh

⁴Department of Anatomy & Physiology, Marks Medical College, Bangladesh

⁵Department of Microbiology, Bangladesh University of Health Sciences, Bangladesh

⁶Armed Forces Medical Institute, Dhaka Cantonment, Bangladesh

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***Corresponding author:** Mesbah Uddin Ahmed, Department of Microbiology, Bangladesh University of Health Sciences, Bangladesh

Abstract

Bangladesh is a poor, densely populated country of South East Asia and vast proportion of the people here live under poverty level where poultry is emerging as a huge industry. There are about 220 million chickens and 37 million ducks in Bangladesh, millions of households rely on poultry production for income generation and nutrition. So any mishaps in the poultry industry, such as outbreak of bird flu, would have enormous economic as well as health consequences in Bangladesh. This was a cross-sectional study carried out among the poultry workers of selected poultry farms in Dhaka city. The study was conducted for a period of six months starting from January 2008 to June 2008. A total of 150 poultry workers aged 9 years and above irrespective of sexes were interviewed using semi-structured questionnaire by face to face interview. The main objective of the study was to assess the level of awareness on avian influenza among the poultry workers of selected poultry farms in Dhaka city. Data analysis revealed that 98% of the respondents ever heard avian influenza and their main source of information was television (98%). About ninety percent respondents mentioned that it is caused by virus (89.3%). Among the respondents about three fourth (68%) mentioned that it is transmitted by direct contact and 92% had the knowledge on sign and symptoms in poultry. Eighty percent of the respondents had the knowledge on transmission from poultry to human, 63% had the knowledge on transmission from human to human whereas 46.7% had the knowledge on sign & symptoms of avian influenza in human. More than eighty percent (88.7%) of the respondents believed that it can be prevented by vaccine, 56.7% believed that using personal protective equipment's can prevent it. Though the study sample was small which might not be representative of population however, data would be useful in development of planning and program strategies.

Keywords: Awareness; Avian Influenza; Poultry Workers

Introduction

The ongoing outbreaks of Highly Pathogenic Avian Influenza (HPAI/H5N1) in a number of South-East Asian countries since late 2003 have been particularly devastating to the poultry industry, in the region and have raised serious global public health concerns. Available evidence points to an' increased risk of transmission to humans when outbreaks of HPAI/H5N1 Avian influenza, are widespread in poultry. The potential of HPAI/H5N1 vims to evolve resulting into a human influenza pandemic is of grave concern to both the national and, global community [1]. The World Health Organization (WHO) and influenza experts expressed their concern that the resurgence and spread of HPAI/

H5N1 in wide geographical areas has the potential to ignite the next human pandemic. WHO estimates that if a human influenza pandemic occur, as many as two to seven million people could die. As of April, 2008. WHO has recorded 382 human cases of laboratory confirmed HPAI/H5N1 Avian Influenza. Two Forty One (241) of them had already died indicating a high case fatality rate of approximately 63.08%. Bangladesh has. 125,000 small and large poultry farms producing 250 million broilers and 6 billion eggs annually, with an annual turnover of \$750 million [2]. About four million Bangladeshis are directly or indirectly associated with poultry farming. As four million Bangladeshis

are directly or indirectly associated with poultry farming, we should put our best effort to protect the industry from bird flu. Our country is in a susceptible situation as it lies on the major route of migratory birds. According to United Nations, Avian Influenza and Pandemic Influenza Preparedness and Response Plan have been prepared. In Bangladesh, 244 species of migratory birds visit Bangladesh in the winter season every year (October-March) which approximately 21 species may carry the H5NI or HPAI (Highly Pathogenic Avian influenza) vims. The dense population and close living quarters increase potentials for vims transmissions. The awareness on avian influenza among the workers of poultry farms will help us to face the future threat and will reduce the loss of life of both birds and human [3]. This study will reveal the state of knowledge and awareness about avian influenza during the avian influenza epizootic among the most vulnerable population involved in poultry industry. The data may be useful for designing future strategy for risk communication and behavior modification.

Materials and Methods

Poultry workers in poultry farms irrespective of sexes in a selected area of Dhaka City were study population. The study was conducted at a selected area of Dhaka city corporation i.e. Uttar Khan Area. The study area was selected purposively for the research. It was a descriptive cross sectional study. The study was conducted in a period of 6 months started from January to June 2008. Purposive sampling was used. A sample size consisting of 150 respondents were interviewed and was decided upon convenience. Two respondents were included from each poultry farm of the area. For data collection, semi structured questionnaire were developed after preliminary observation & review of literature. The questionnaire were pretested, modified and finalized. There were also an observational checklist to assess the practices for prevention of avian influenza. Data were collected by the researcher himself by using the semi structured questionnaire and observational checklist sheet. The researcher went from one poultry farm to another. Filled up the questionnaire and observational checklist through face to face interview. Before filling the questionnaire, the identification of the researcher and the purpose was explained clearly to the respondents. The interview were conducted in a comfortable atmosphere, so that they answered to the questions confidently and without any hesitation. After collection of data they were checked, verified and edited for consistency. Then the results were tabulated. The percentage and the other statistical calculations and analysis were done by SPSS to fulfill the objectives of the study. Results have been presented in the (Tables 1-5). In this study knowledge refers the understanding about avian influenza infection among the poultry worker. The level of knowledge on avian influenza was assured by arbitrarily given score '1' for yes and '0' for no according to Cornel Medical Index (CMI). The respondent's knowledge on avian influenza was categorized as: Good knowledge (score >33) (>80%), Fair knowledge (32-21) (50% to <80%) & Poor knowledge (<21)

(<50%). The total score was 42. The ability to recognize and accurately interpret or justify the message available to any individual was considered as awareness. The level of awareness on avian influenza was assured by arbitrarily given score '1' for 'aware' and '0' for not aware' according to Cornel Medical Index. The following aspects of avian influenza were considered for assessing the level of awareness.

- Whether the respondents knew about avian influenza
- If yes - score-1, If no- score-0
- Total score - 1

Result (Table 1)

Table 1: Distribution of respondents by its sources of knowledge.

Variables	Frequency	Percent
Ever heard bird flue	147	98.0
Never heard bird flue	3	2.0
*Sources of information		
Radio	60	40.8
TV	144	98.0
Relatives	56	38.1
Colleagues	82	55.8
Health worker	23	15.6
Newspaper	11	7.5

*Multiple responses.

Out of 150 respondents, 147(98%) of them ever heard Avian Influenza & 3(2%) did not. The main sources of information was Television (98%), followed by Colleague (55.8%), Radio (40.8%), Relatives (38.1%), Health worker (15.6%) and 11(7.5%) respondents got the message from News Paper (Table 2).

Table 2: Distribution of respondents by whether avian influenza is communicable and preventable disease.

Variables	Frequency	Percent
Communicable	134	89.3
Not communicable	12	8.0
Don't know (whether communicable or not communicable)	4	2.7
Preventable	136	90.7
Not Preventable	9	6.0
Don't know (whether preventable or not preventable)	5	3.3

Multiple responses.

Out of 150 respondents, 89.3% of the poultry workers reportedly mentioned that it is a communicable disease. Among

them 90.7 % believed that it is a preventable disease and 6.0% opined as non- preventable disease. However 5.0% did not know whether it is preventable disease or not (Figure 1).

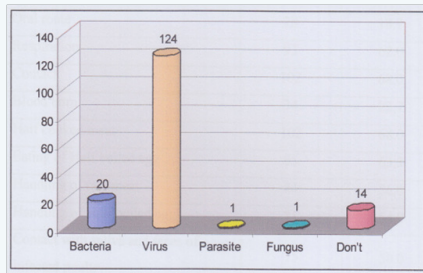


Figure 1: Distribution of respondents by knowledge on causative agent of avian influenza

Out of 150 respondents, 82.7% reportedly mentioned that it is caused by vims which is correct answer. Among them 19.3% gave wrong answer whereas 9.3% did not know about the cause of avian influenza (Table 3).

Table 3: Distribution of respondents by knowledge on mode of transmission of avian influenza from poultry to human.

Communicative agent	Frequency	Percent
Oral route	28	18.7
Respiration	93	62.0
Contact	102	68.0
food born	34	22.7
Half cooked meat	102	68.0
Eating of Half boiled egg	95	63.3
Handling of raw meat	84	56.0
Handling of Half boiled egg	81	54.0
Contact with saliva and feces of infected poultry	75	50.0
Contact with infected poultry	67	44.7
Contact with infected rodents	59	39.3
Contact with wild animal	87	58.0
Don't know	33	22.0

Among the respondents, 68% reportedly mentioned that it is transmitted by direct contact and eating of half cooked meat & 63.3% believed that it can be transmitted by eating of half boiled egg where as 58% believed that it can be transmitted

by contact with wild animal, handling of row meat (56.0%) and half boiled egg (63.3%), also contact with saliva and recess of infected poultry (Table 4).

Table 4: Distribution of respondents by knowledge on transmission of avian influenza from poultry to human.

Poultry to human	Frequency	Percent
Can be transmitted	120	80.0
Cannot be transmitted	9327	18.0
Do not know	1023	2.0
Total	50	00.0

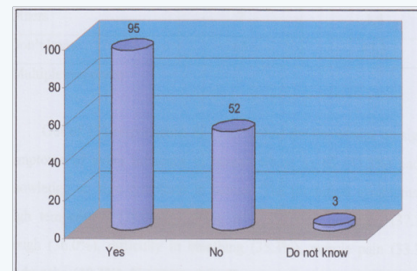


Figure 2: Distribution of respondents by knowledge on transmission of avian influenza from human to human.

Out of 150 respondents, 80.0% had knowledge on mode of transmission of avian influenza from poultry to human and 18.0% respondents answered wrongly whereas 2.0% of the respondents had no knowledge about the mode of transmission. (Figure 2) Out of 150 respondents 63.3% had the knowledge on transmission of avian influenza from human to human, 34.7% gave wrong answer where as 2% of the respondents did not have any knowledge on transmission (Table 5).

Table 5: Distribution of respondents by knowledge on sign and symptoms of avian influenza in human.

Variables	Frequency	Percent
Knowledge on Sign & Symptoms in human		
Yes	85	46.7
No	65	43.3
Sign and Symptoms of avian Influenza in human (n=85)		
High temperature	75	50.0
I Muscle pain	50	33.3
Headache	56	37.0
Body ache	29	19.3
Sore throat/running nose	57	38.0
Cough	54	36.0
Difficulty in breathing	53	35.3
Others	2	1.4
Don't know	65	43.3

Multiple responses.

Out of 150 respondents, 85 (46.7%) had the knowledge on sign & symptoms of avian influenza in human where as 65 (43.3%) had no knowledge on sign symptoms in human. The prominent symptoms are high temperature (50.0%), running nose (38.0%), headache (37.3%), cough (36.0%), difficulty in breathing (35.3%), muscle pain (33.3%), body ache (19.3%). However, only 2% respondents answered as others whereas 65 (43.3%) did not know the sign and symptoms of avian influenza in human (Figure 3).

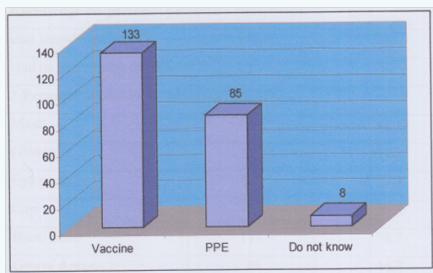


Figure 3: Distribution of respondents by knowledge on prevention of avian influenza in human.

Considering the prevention of avian influenza in human, 88.7% reportedly mentioned that it should be prevented by vaccine and 56.7% believed that it should be prevented through use of personal protective equipment's. However, 5.3% did not know about the ways of prevention of avian influenza in human.

Discussion

The 'respondents in this study were the poultry workers engaged in working as an employee of the poultry farm as well as owner of the farm and the workers were engaged in all types of works required to grow and develop chickens and also those engaged in selling and slaughtering. The respondents were the high risk group who may be infected by avian influenza due to risky environment and risk behavior of the respondents. A panic due to recent outbreak of avian influenza was prevailed among workers. In this study, awareness on avian influenza was assessed by asking the respondents whether a respondent had ever heard about avian influenza. It was evident that 98% of the respondents mentioned that they heard about avian influenza. This result is close to the findings of the study by Nipa FS. This might be due to dissemination of information since recent outbreak of avian influenza in Bangladesh [4]. The source of information found in this study was Television (98%) followed by colleagues (58%) which is partially similar (In case of television) with the findings of the study conducted by Gusepee GD where 85.8% respondents received the message through television followed by health professionals (26.5%) [5].

This result indicated that during the last outbreak of avian

influenza, electronic media like television played a very active role in dissemination of information about avian influenza in Bangladesh. In the present study, 82.7% of the respondents reportedly mentioned that avian influenza is caused by virus which is the correct answer. Nipa FS conducted a similar study at NIPSOM and found that 48.6% knew correctly the causative agent of avian influenza [4]. The increased knowledge on causative agent 'may be due to recent awareness programs taken by the government, NGO's and volunteers of different level to raise the awareness among the people and implementation of the programs by various ways in the country. In the present study, it was evident that 89.3% of the respondents were found to be aware about the communicability of the disease and 90.7% believed that it could be prevented by adopting personal protective measures. This result is little dissimilar with the findings of Nipa FS where 95.2% knew about the communicability and 70.5% believed that it was preventable. This difference may be due to the difference of educational, social and economic status of the respondents between the two defined study areas as an obvious reason.

In the present study, respondents reportedly mentioned that avian influenza can be transmitted by direct contact with infected bird (68%) eating of half boiled egg (63.3%) eating of half cooked meat (68%), respiration (62%), handling of half boiled egg (54%), contact with infected poultry (44.7%) whereas the result of the study conducted by Nipa FS showed that transmission from bird to human caused by direct contact (48.6%), ingestion of uncooked meat & eggs (13.3%), and by inhalation (1%).

The dissimilarity of the result may be due to increased awareness in last one year of time due to massive awareness program. In the present study, it was revealed that 92% of the respondents were aware about the sign and symptoms of avian influenza in birds. The respondents reportedly mentioned that marked depression (92%), edema comb (71.3010), watery diarrhea (59.3%), cessation of egg production (56.7%), reluctant to food (52.7%), egg without shell (51.3%), conjunctiva hemorrhage (19.3%) and 8% did not know about the sign and symptoms of avian influenza. In a similar study conducted by UNICEF in 2007, showed that marked depression (52.6%), watery diarrhoea (13.9%), cessation of egg production (4.5%), reluctant to food (17.8%) & about half 86 of them did not know about the sign symptoms of avian influenza in poultry [6]. In the study conducted Nipa FS showed that marked depression (32.4%), edema comb (5.7%), watery diarrhoea (27.6%) & did not know (52.4%). The increased knowledge may be due to increased awareness of the poultry worker due to different campaign by government, NGO & the voluntary organizations during the recent outbreak of avian influenza. It can be mentioned here that many of the farm visited were bird not affected which might be the factor behind increased awareness. In the present study, it is

evident that 46.7 % of the respondents were aware of the sign and symptoms of avian influenza in humans whereas 43.3% did not know about the sign & symptoms avian influenza in human the respondent reportedly mentioned that high fever (50%), running nose (38%), headache (37.3%), cough (36%), difficulty in breathing (35.3%), body ache (19.3%) as sign symptoms of avian influenza in human.

In a similar study conducted by Nipa FS showed that 48% of the respondents were aware of knowledge on sign & symptoms of avian influenza in human and reportedly mentioned that high fever (39%), running nose (9.5%), headache (8.6%), cough (8.6%), bodyache/muscle pain (5.7%) as the sign & symptoms of avian influenza in human where as 54.3% did not know about it. The enhancement of knowledge on sign & symptoms of avian influenza in human may be due to the positive role played by the government, NGO's and volunteers to raise awareness among the poultry. Workers in addition to the various types of campaign by the electronic and print media.

In the present study 88.7% of respondents reportedly mentioned that it can be prevented by use of personal protective equipment, 56.7% mentioned that vaccine can prevent it whereas 5.3% did not know about the way of prevention of avian influenza in human. In a similar study conducted by MarinosG et al revealed that 46% of respondents knew about the prevention by vaccine, 95.7% believed it can be prevented by not touching the infected poultry [7], whereas in study showed that use of personal protective equipment 48.6%, vaccine 46% & 4.8% did not know about the prevention. The knowledge on prevention has increased & may be due to increased interest of the respondents to tackle the impending threat of outbreak in the study area during the study period [4].

Conclusion

The study revealed that majority of the respondents ever heard avian influenza. More than 80% mentioned that it is caused by virus. The main source of information was television. More than half of the respondents (68%) reportedly mentioned that it is transmitted by direct contact. About 63.3% had the knowledge on transmission of avian influenza from human to human. About 46.7% had the knowledge on sign & symptoms of avian influenza.

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