

A study on knowledge and preventive practices related to Avian Influenza among Higher Secondary School Students of Rajbiraj Municipality, Nepal

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Abstract: *Background:* Avian influenza is considerable global public health threat today, so prevention and control depends on the knowledge and protective behaviors of the general population as well as high risk groups. *Objectives:* The present study was conducted to determine the knowledge and preventive practices related to avian influenza among higher secondary school students. *Materials and Methods:* A community based cross-sectional study was conducted among 158 higher secondary school students using pre-tested structured questionnaire administered at interview. Frequency and percentage were calculated. Ethical clearance, informed consent and assent were taken from the concerned authority. *Results:* Majority (43.03%) participants were of age 17 years and more than two thirds (70.25%) were male. Main source of information on avian influenza was television (51.27%). More than three quarters (87.34%) study participants were aware that avian influenza can be transmitted from bird to human while (64.55%) knew that transmission could be from eating infected meat. Preventive practices adopted include avoid contact with sick or dead birds (41.13%) and hand washing (40.63%). *Conclusion:* This study emphasizes the need for intensified health education program among higher secondary school students in order to deal with this serious public health havoc.

Keywords: Avian Influenza, Higher Secondary School Students, Knowledge, Preventive Practices.

Introduction

Avian influenza (AI) commonly known as bird flu, one of the most serious public health threats today, is a contagious disease of birds caused by influenza virus type A and leads to fever, cough, body pain and ultimately death to the individual. Influenza A (subtype H5N1) virus is liable for outbreaks in birds and case-fatality rate documented in human is around 58% [1]. The most likely mode of transmission is from infected birds and their products to humans and from the environment to humans but corroboration for human to human transmission is limit defined [2].

In 1997 the first known infection with H5N1 was isolated in Hong Kong [3]. Nepal faced its first outbreak among poultry in January 2009 which continues till date in a localized form, but no human cases have been registered [4-5].

Due to peculiar characteristics of avian influenza virus i.e. re-assortment and mutation, it can lead to pandemic flu which may result in severe

consequences, especially in a developing nation like Nepal. If Nepal were hit by pandemic flu, it may result into high human toll, severe shortage of hospital beds as well as health workers and economic loss [6-8]. Special risk groups such as poultry or pig farmers act as "bridging population" in terms of cross sharing of virus species and disease into their local community. So prevention and control planning have to be taken into account.

Considering the above facts, government of Nepal established avian influenza and influenza pandemic preparedness and response plan (NAIIPRP) in 2006 with particularly emphasis on knowledge, attitude and precautionary behaviors. A mass media campaign informing about risks and motivating for protective behaviors had been started already soon after Highly Pathogenic Avian Influenza (HPAI) hit Asia in 2003 and was strengthen after it had reached Nepal in early 2008 [9-11].

It is well known that influenza is an emerging issue for these days and has already affected the poultry farming of Nepal. However, the possibility of an avian influenza is a serious concern to public health society as it can create a pandemic havoc in humans. Prevention and control of the infection depends on the knowledge and awareness among general population. Hence our study set out to determine the knowledge and preventive practices related to avian influenza among higher secondary school students.

Material and Methods

This cross-sectional study was conducted among two higher secondary school students of Rajbiraj Municipality, Saptari district, Nepal. Duration of this study was 7 months from February 2012 to August 2012. A total of 158 study participants from two higher secondary schools were included in this study as there were only two higher secondary schools in Rajbiraj municipality during 2012. Pre-designed and self administered questionnaire were used to collect information on demographic variables, knowledge and practices towards AI.

All the students of higher secondary schools (11th and 12th class) willing to participate were included and students who did not give written assent and consent were excluded from the study. Written informed consent was obtained from the principals of the respected higher secondary schools after explaining about the whole study. Ethical approval was obtained from the concerned authority. Frequency and percentages were calculated. The data was analyzed by using SPSS software (Version 16.0).

Results

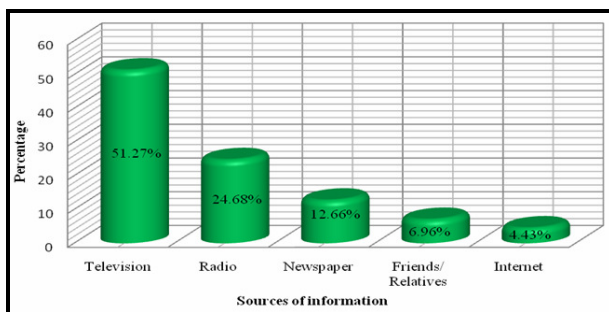
Out of 158 study participants, majority (43.03%) were of age 17 years and more than two thirds were male (70.25%). Majority (50.63%) of the participants were from class 11th, three fourth (86.08%) of the participants were Hindus and nearly two third (62.03%) belonged to the joint family. The main occupation of the household respondent was farm (38.7%) and (46.2%) of them had completed their secondary level of education (Table 1).

Table-1: Socio-demographic characteristics of the study participants

Characteristics		Frequency (N=158)	Percentage (%)
Age in years	16	45	28.49
	17	68	43.03
	18	38	24.05
	19	7	4.43
Gender	Male	111	70.25
	Female	47	29.75
Class	11	80	50.63
	12	78	49.37
Religion	Hindu	136	86.08
	Muslim	14	8.86
	Christian	8	5.06
Family type	Nuclear	60	37.97
	Joint	98	62.03
Occupational status of household respondent	Government job	49	31.01
	Business	29	18.35
	Farmer	61	38.7
	Housewife	19	11.94
Educational status of household respondent	Illiterate	28	17.72
	Primary	31	19.62
	Secondary	73	46.2
	University	26	16.46

Television (51.27%) was the first source that could provide knowledge on AI for the most people, followed by radio (24.68%) and newspaper (12.66%) (Figure-1).

Fig-1: Sources of information about Avian influenza (N=158)



Majority (87.34%) of study participants were aware that AI can be transmitted from bird to human while (64.55%) knew that transmission could be from eating infected meat. More than three quarters (86.7%) participant indicated that AI is a disease of birds and majority (52.53%) stated AI is caused by virus. Participants were asked about symptoms of AI in human to assess their knowledge. The symptoms commonly known by them were diarrhoea (63.29%), fever and headache (18.99%), cough (6.33%) and vomiting (5.7%). Participants did not recognize the major risk groups, since a large percentage (62.03%) agreed that poultry workers were at risk but lower values were reported for butchers (26.58%), hunters (6.33%) and veterinarians (5.06%) (Table 2).

Table-2: Knowledge of the study participants about Avian Influenza

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Characteristics		Frequency (N=158)	Percentage (%)
Mode of transmission (AI can be transmitted through)*	Direct contact with infected birds	27	17.08
	Indirect contact (airborne)	25	15.82
	Eating infected meat	102	64.55
	Birds to birds	9	5.69
	Human to human	6	3.79
	Bird to human	138	87.34
AI is a disease of	Birds	137	86.71
	Man	6	3.8
	Man and animal	15	9.49
AI is caused by	Bacteria	30	18.99
	Virus	83	52.53
	Fungi	18	11.39
	Parasite	27	17.09
Symptoms of AI	Fever and headache	30	18.99
	Breathlessness	4	2.53
	Cough	10	6.33
	Sore throat	5	3.16
	Vomiting	9	5.7
	Diarrhoea	100	63.29
Risk groups for AI	Butchers	42	26.58
	Poultry workers	98	62.03
	Veterinarians	8	5.06
	Hunter	10	6.33

*- Multiple responses were recorded from participants

Majority (41.13%) of the participants were aware that avoiding contact with sick or dead birds can prevent from AI, (40.63%) felt hand washing, (25.31%) identified washing raw meat properly, (18.98%) said that wearing gloves and face mask can prevent themselves from AI and only (6.32%) were aware that staying away from poultry farm can prevent AI (Table 3).

Table-3: Practices of preventive measures about Avian Influenza among the study participants		
Preventive measures*	Frequency (N=158)	Percentage (%)
Washing hands with soap and water after handling sick or dead birds	40	40.63
Avoiding contact with sick or dead birds	65	41.13
Usage of gloves and face mask	30	18.98
Washing raw meat properly	80	25.31
Wash and disinfect utensils	50	31.64
Staying away from poultry farm	10	6.32
*- Multiple responses were recorded from participants		

Discussion

In the present study, majority (43.03%) participants were of the age 17 years followed by 16 years (28.44%). Nearly three quarters (70.25%) of the study participants were male and (50.63%) of them were from class 11th. More than three fourth (86.08%) participants belonged to Hindu religion. The main occupation of the household respondent was farm (38.7%) and (46.2%) of them had completed their secondary level of education. More than half (62.03%) of the study participants belonged to joint family.

A similar study conducted in Saudi Arabia among secondary school students showed that (59.9%) study participants were of age ≤ 17 years. More than half (55.3%) participants were female which is very high compared to our study [12]. Similar findings were reported in a study done in Nepal where (27.6%) of the study participants had secondary level education and only (11.6%) were

involved in agricultural occupation [3]. Unlike the finding among the Cambodian people, (74%) of the participants were Buddhist [13]. This survey demonstrated that the main sources for information of AI were television, radio and newspaper. Almost the same result was found in Saudi Arabia, Cambodia, Nigeria and India studies [12-15].

In this study, majority of participants (87.34%) reported that the transmission of AI could result from bird to human and for other transmission routes reported by participants were eating infected meat (64.55%), direct contact with infected birds (17.08%) and indirect contact (15.82%). Unlike our findings, Mav Khun et al in 2009, reported that eating raw egg (18.3%) could transmit the virus, (58.9%) by direct contact with sick or dead animals and (28%) said indirect contact eg. airborne [13].

More than half (52.53%) of the participants were aware that AI is a viral disease which is similar to the study done by Khan SA et al as (70%) of the participants stated it as a viral disease [16]. The major symptoms in human identified by them were diarrhoea (63.29%), fever and headache (18.99%), cough (6.33%) and vomiting (5.7%) which is contrast to our study conducted by Mav Khun et al as (64.6%) mentioned fever as symptoms and (34.6%) answered cough as the symptom of AI [13]. A large percentage (62.03%) participant agreed that poultry workers were at risk but lower values were reported for butchers (26.58%), hunters (6.33%) and veterinarians (5.06%). This finding was more or less similar with the other studies [17-18]. Regarding hygienic practices, hand washing with soap and water was the most prevalent practice and use of other personal protective actions, however, seemed to be less common practice. This finding is in line with the other studies which similarly found hand washing to be by far the best known practice for prevention of AI [3, 13, 17, 19-20].

Conclusion

The results of this study illustrates that participants had no detailed understanding of AI and had a low compliance with preventive

measures. In the light of an ultimate future AI pandemic, our findings emphasize the need for intensified health education programs among higher secondary school students in order to deal with this serious public health havoc.

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