

Access to health information may improve behavior in preventing Avian influenza among women

Ajeng T. Endarti,^{1,2} Shamsul A. Shah²

¹Faculty of Health Sciences, Universitas Pembangunan Nasional "Veteran" Jakarta

²Department of Community Health, Faculty of Medicine, Universiti Kebangsaan Malaysia

Abstrak

Latar belakang: Peningkatan perilaku terhadap Flu burung dapat menurunkan risiko infeksi Flu burung. Tujuan penelitian ini ialah untuk mengetahui faktor-faktor dominan yang mempengaruhi perilaku pencegahan penyebaran penyakit Flu burung pada masyarakat.

Metode: Desain studi potong lintang dilakukan dalam bulan Juli 2008 untuk mengetahui perilaku yang diukur dengan menghitung skor pengetahuan, sikap dan tindakan. Penelitian ini dilakukan di suatu kecamatan di Depok, Jawa Barat, yang merupakan wilayah berisiko terjadinya penyebaran kasus Flu burung. Dalam menentukan unit sampel, untuk memilih kepala rumah tangga digunakan metode multi stage sampling.

Hasil: Dari 387 responden 29,5% responden berperilaku baik terhadap penyakit Flu burung. Perilaku subjek yang baik dipengaruhi oleh jenis kelamin dan akses terhadap informasi kesehatan. Perempuan dibandingkan lelaki 67% lebih tinggi berperilaku baik terhadap penyakit Flu burung [risiko relatif (RRa) = 1,67; 95% interval kepercayaan (CI) = 0,92-3,04; P = 0,092]. Sedangkan, subjek yang mempunyai akses terhadap informasi kesehatan 3,4 lipatan berperilaku baik terhadap penyakit flu burung (RRa = 3,40; 95% CI = 0,84-13,76; P = 0,087).

Kesimpulan: Akses terhadap informasi mengenai flu burung terutama efektif di antara perempuan untuk meningkatkan perilaku penyakit flu burung. (*Med J Indones 2011; 20:56-61*)

Abstract

Background: Improving human behavior toward Avian influenza may lessen the chance to be infected by Avian influenza. This study aimed to identify several factors influencing behavior in the community.

Method: A cross-sectional study was conducted in July 2008. Behavior regarding Avian influenza was measured by scoring the variables of knowledge, attitude, and practice. Subjects were obtained from the sub district of Limo, in Depok, West Java, which was considered a high risk area for Avian influenza. The heads of household as the sample unit were chosen by multi-stage sampling.

Results: Among 387 subjects, 29.5% of them had good behavior toward Avian influenza. The final model revealed that gender and access to health information were two dominant factors for good behavior in preventing Avian influenza. Compared with men, women had 67% higher risk to have good behavior [adjusted relative risk (RRa) = 1.67; 95% confidence interval (CI) = 0.92-3.04; P = 0.092]. Compared to those with no access to health information, subjects with access to health information had 3.4 fold increase to good behavior (RRa = 3.40; 95% CI = 0.84-13.76; P = 0.087).

Conclusion: Access to health information concerning Avian influenza was more effective among women in promoting good behavior toward preventing Avian influenza. (*Med J Indones 2011; 20:56-61*)

Key words: avian influenza, behavior, gender, health promotion

WHO have stated the risk of Avian influenza to humans was almost confined to those who had close contact with infected domestic poultry. The first Avian influenza outbreak in Hong Kong in 1997 caused 18 cases with 6 deaths.¹ The study revealed that live poultry markets were the primary source of infection.² The pandemic then was started in Vietnam in 2003 and spread to other Asian and African countries.¹ In Indonesia, the number of confirmed cases of human Avian influenza in 2006

was 28 cases with 71.4% deaths, and most of them had high interaction with chicken and ducks.³ Authorities Network showed a large number of confirmed human cases acquired the infection during the slaughtering and subsequent handling of diseased or dead birds prior to cooking.⁴

To prevent Avian influenza in high risk population, farms or people with domestic poultry, behavioral changes should be attempted. It can be through public

education and reinforced through behavioral counseling. Based on research in Thailand,² attitudes, which will influence behavioral changes,⁵ such as how to protect oneself from poultry with Avian influenza. The behavior changed significantly after the respondents heard about Avian influenza. These changes in human behavior, included those related to food handling, can reduce the opportunity to be infected by Avian influenza. Therefore behavioral changes can become the most important way to reduce the risk of further human infection.⁴

The importance of identifying preventive behavior in Avian influenza have encouraged researchers to conduct studies of knowledge attitude and practice in Avian influenza on many different subjects. For instance studying behavior among school children,¹ poultry workers,⁶ health workers,⁷ and people living in high risk Avian influenza areas.^{8,9}

The mode of transmission of Avian influenza is known and many evidence showed that Avian influenza occurrences in humans were due to unhealthy behavior when in contact with poultry and also by unhygienic behavior.^{2,10,11} Besides the behavioral factors, other non-pharmaceutical interventions that can be utilized to prevent Avian influenza were good surveillance and case reporting and increasing rapid viral diagnosis.¹²

The aim of this study was to identify several dominant risk factors influencing the behavior of the community in preventing Avian influenza.

METHODS

This cross-sectional study was conducted in a sub district of District Depok, West Java, Indonesia in July 2008 which was considered to be a high risk area for Avian influenza. In this area many homes keep poultry in the backyard, and the poultry were not certified free of Avian influenza virus.¹³ In addition, the location of sub district Limo borders with DKI Jakarta Province (the second largest Avian influenza cases in Indonesia)³ and the rate of migration of people between these areas was high.

Multi-stage sampling was used in determining the sample. This method was suitable because there was a hierarchy within study area, such as village and neighborhood, to reach the sample unit (head of household).

The instrument for this study was modified from Avian Flu Baseline Survey Backyard Poultry Farmers of

Vietnam (USAID 2006)¹⁴ and A Guide for Monitoring and Evaluating Avian influenza Programs in Southeast Asia (USAID 2007) questionnaires.¹⁵ To assure the reliability of the questionnaires, we conducted questionnaire tryouts to 20 persons.

Behavior was defined as the respondent's activities in preventing the spread of Avian influenza. At the end of the study, behavior was categorized into good behavior and poor behavior based on Knowledge, Attitude and Practice (KAP).

Knowledge was the respondents' knowledge about Avian influenza (definition, symptoms, route of transmission and preventive activities). Knowledge was categorized into poor and good. If the respondents could answer at least 6 questions correctly (from 10 questions), the respondent knowledge was good (score 1).

Attitude was response of the respondents about Avian influenza. Attitude was categorized into poor and good. If the respondents could answer at least 7 questions correctly (from 11 questions), the respondent attitude was good (score 2).

Practice was the respondent's action in preventing the spread of Avian influenza within their surroundings. Practice was categorized into poor and good. If the respondents could answer at least 9 questions correctly (from 14 questions), the respondent practice was good (score 3).

This categorization was used to decide whether the respondent's behavior was good or poor. From these three variables (Knowledge, Attitudes and Practices) if the sum of those variables were 6 the behavior was good. But if the sum were less than 6 the behavior was poor.

Variable such as access to health care was categorized into good if respondents answered all three questions (regarding accessibility, affordability, and satisfaction to health services). Family/neighbor support was categorized as good if they answered at least 2 out 3 questions. Age was grouped as young (18-29 years), young adults (30-50 years), and old (50 years or older)

Cox Regression was used to analyze data. This study obtained ethical clearance from the ethical committee of the Faculty of Medicine, Universitas Kebangsaan Malaysia.

RESULTS

The study revealed there was about 29.5% out of 387 subjects with good behavior in preventing Avian

influenza. Subject with good behavior and poor behavior was similarly distributed by educational level, income, age group, ethnic, access to health care, and family and community support (table 1).

In the final model, gender and access to health information were two dominant factors for good behavior in preventing Avian influenza (table 2).

Compared with men, women had 67% higher risk to good behavior [adjusted relative risk (RRa) = 1.67; 95% confidence interval (CI) = 0.92-3.04; P = 0.092]. Compared to those with no access to health information, those with access had 3.4 fold risk to good behavior (RRa = 3.40; 95% CI = 0.84-13.76; P = 0.087).

Table 1. Several characteristics of subjects and the risk of good behavior in preventing Avian influenza

	Poor Behavior	Good Behavior	Crude relative risk	95% confidence interval	P
	(n=273)	(n=114)			
Educational level					
Poor	187	71	1.00	Reference	
Average	74	37	1.21	0.814-1.802	0.345
High	12	6	1.21	0.526-2.787	0.652
Income					
Low	53	15	1.00	Reference	
Middle	174	75	1.36	0.784-2.377	0.271
High	46	24	1.55	0.815-2.963	0.180
Age					
Young group	37	24	1.00	Reference	
Young adult	191	74	0.71	0.448-1.125	0.144
Old	44	15	0.64	0.339-1.232	0.185
Ethnic					
Sundanese	36	16	1.00	Reference	
Javanese	89	33	0.87	0.48-1.60	0.672
Betawi	132	59	1.00	0.58-1.74	0.989
Other	16	6	0.65	0.38-2.27	0.801
Access to health care					
Poor	43	12	1.00	Reference	
Good	230	102	1.40	0.77-2.56	0.262
Family and community support					
Poor	166	68	1.00	Reference	
Good	107	46	1.03	0.71-1.50	0.859

Table 2. The relationship between gender, access to health information and good behavior in preventing Avian influenza

	Poor Behavior	Good Behavior	Adjusted relative risk	95% confident interval	P
	(n=273)	(n=114)			
Gender					
Men	53	12	1.00	Reference	0.092
Women	220	102	1.67	0.92-3.04	
Access to health information					
No	21	2	1.00	Reference	
Yes	251	112	3.40	0.84-13.76	0.087

DISCUSSION

Generally, respondents' behavior towards Avian influenza was poor (79.5%). That is caused by not practicing prevention of Avian influenza in their daily life, even though most of them have good knowledge (79.1%) and attitude regarding Avian influenza (91.5%). Theoretically, change in behavior is brought about through three steps, which are change in knowledge, change in attitude, and change in behavior. The process is complex and needs time to reach the goal, which is behavioral change.¹⁶ Poor behavior was also identified in a study in Cambodia, where people have contact with sick/dead poultry with their bare hands, make use of dead domestic and wild poultry as their source of food, and using manure originating from diseased poultry.⁹

Women were one of two variables that was dominant in affecting good behavior for preventing Avian influenza. The risk for women performing good behavior was almost two times higher than men (RRa 1.67). It was influenced by exposure to health information. Ninety-four percent of women respondents received information of Avian influenza from electronic media. In men, only 84.61 % of used electronic media as their source of information for Avian influenza. A similar result was found in a study in China where television was found to be a major source of information regarding Avian influenza.¹⁷ Many women respondents used electronic media, especially television. This was probably due to having more time for watching television while during the house work. Advertisements of Avian influenza prevention were presented on TV during day and night time for wide coverage. These advertisements increased the knowledge of female respondents. The data showed that women with good knowledge of Avian influenza was 81.99% while good knowledge among men was only 64.61 %. Another study showed that information, particularly from media, also influenced good attitude of respondents.¹⁸

Compared with men, perceived curiosity of women towards Avian influenza was higher. Perceived susceptibility toward Avian influenza reached 91.56% in women, whereas in men it was only 68.75%. Similar results were found in many European and Asian countries, except Singapore. The perception of risk of Avian influenza was higher in women than men but this difference was less in Asian countries compared to Europe.¹⁹

The Health Belief Model explained that perceived susceptibility toward a disease will lead to perceived of threat of disease and at the end it will change the

behavior into preventive behavior concerning the disease.²⁰ Perceived susceptibility was also a stronger predictor of preventive health behavior rather than sick-role behavior.

Women were more curious toward Avian influenza because in Indonesia, the case fatality rate (CFR) for Avian influenza among female was higher than male. A study in 2006 showed that CFR of Avian influenza (AI) cases in females was 91.67%.³ This was significantly different when compared to CFR in males, which was 56.25%. In addition, a study in Saudi Arabia found that females were more concerned toward the spread of AI infection, the possibility catching the infection, and the response to a hypothetical threat compared to males.¹ Furthermore, perceived vulnerability, in seven consecutive studies in the Netherlands, was higher in women as well as in the elderly and respondents without children under 12 years old.²¹

All these data were appropriate when applied to the theory of notion. Knowledge, attitude and, behavior are congruent and that once an individual has the required knowledge, they will change their attitude which will ultimately lead to a change in their behavior.²² In this study, the number of women with good knowledge and attitude were higher compared to men and as a result the number of good behavior in preventing Avian influenza was also higher.

Health information was related to behavior in preventing Avian influenza. Ninety-six percent of the respondents was exposed to Avian influenza information with electronic media as the main source for information. This finding was similar to a study in Kubang Pasu, Malaysia that showed 81.3% of the respondents obtained information of Avian influenza from the mass media (television).²³ Giuseppe et al also noted that 85.8% of respondents in Italy received information about Avian influenza through the mass media.²⁴

All these results showed that mass media especially television has the biggest influence in enhancing people's knowledge, which will change people's behavior in the end. In Cambodia, KAP II Survey on Avian influenza revealed that the increased number of people who watched television (during 2005-2007) increased the people's knowledge on Avian influenza and changed their behavior in preventing Avian influenza.²⁵

Health promotion of Avian influenza in the mass media promoted the signs and symptoms of infected poultry, preventive behavior regarding Avian influenza, and

reporting when there were signs and symptoms of Avian influenza in poultry and human. Preventive behavior that was recommended in the advertisement were not to touch sick or dying birds, or if they did, they have to immediately wash their hands and report to the local authority, washing hand and utensils with soap and water before eating or cooking, cooking all poultry and egg well, and separating birds and all new flocks for two weeks. Although the major source of information in the study area was television, in Afganistan, leaflets were also used to inform about Avian influenza. Both sources of information significantly increased the people's awareness.²⁶

Half of the respondents complied with the recommended behavior promoted in the advertisements. It was found that 17.6 % washed their hands after handling the poultry, 12.1% did not eat undercooked poultry and eggs. The number people complying with reporting of any signs and symptoms in poultry and human increased. The reports reached 87.6% of respondents would report to the local authorities (76.5%) when they saw signs and symptoms in the poultry. But only 16.3% of the respondents reported the signs and symptoms Avian influenza in humans, since the first thing they did was to bring the suspected patients to the nearest health care facility.

Advertisement was effective in influencing at least 20% of respondents in this study. This was because the advertisement fulfilled the criteria for effective health communication.²⁷ **Accuracy**, in all the advertisements (TV, radio, printed material), information about how to prevent Avian influenza was clearly delivered without needing any interpretation. **Availability**, the messages were delivered by TV, radio and printed material, which had broad coverage where most Indonesians can access. **Consistency**, even though there were many version of Avian influenza advertisements, the content remains internally consistent over time and was consistent when compared to information from other sources.

The effect of this campaign can be seen by the decreasing number of new cases in May 2008. In May 2007 there was a 50% decrease in cases while in May 2008 the decrease reached 88.8%. Up to early July 2008, there were no new cases of Avian influenza in humans in Indonesia.²⁸

The limitation of this study was selection bias since we could not interview equal numbers of female and male respondents. The study covered a majority of women (83.2%). This number was higher than the actual number of women in the population. In the Limo sub district, the

percentage of women was 47.70%. The high number of females who took part in this study was due to the time of the survey, which was done during weekdays when most women were at home, because around 77% of the female respondents were housewives.

In conclusion, health promotion about Avian influenza was more effective among female respondents. Therefore, health promotion to promote good behavior in male respondents will need more attention.

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