

Avian influenza-related KABP among school students, parents and teachers in Thailand

Sayako Kanamori, Pimpimon Thongthien,
Jun Kobayashi, Praphasri Jongsuksantigul,
Wipawee Jampangern, Piyarat Butraporn,
Masamine Jimba, Jitra Waikagul

Avian influenza (AI)

- Infectious disease of birds caused by type A strains of the influenza virus, recently causing severe respiratory disease in humans (WHO, 2007)
- Globally, 335 confirmed human cases have been reported with 206 deaths since 2003 (WHO, 2007)
- In Thailand, 25 confirmed human cases have been reported with 17 deaths since 2003, the third most affected country (WHO, 2007)
- Children <15 years have higher morbidity & mortality (Areechokchai D, 2006)
- People who commonly have contact with live, sick, or dying poultry are at high risk for AI (Abbate R, 2006)

Health promoting school (HPS)

- A part of WHO Global School Health Initiative (WHO, 1996)
- A place where all members of the school community work together ...to promote and protect their health (WHO, 1996)
- In Thailand, approximately 90% of primary schools join HPS project (MoPH Thailand, 2006)
- Ministry of Public Health (MoPH) and Ministry of Education (MoE) grant certification as either “Gold”, “Silver”, “Bronze” or “Developing”, regarding to the level of assessment (MoPH & MoE, Thailand, 1998)

What is known & unknown about AI?

- Virology, clinical spectrum, risk factors...

(Areechokchai D 2006, Jong MD 2006, WHO 2006)

- Despite widespread of knowledge, many present high level of at-risk practice

(Olsen SJ 2005, Ly S 2007)

- None have investigated the level of knowledge, attitudes, beliefs and practices (KABP) of AI among school-aged children, their parents and teachers
- None have investigated the association of HPS status and KABP levels of AI

Objectives

- To investigate the level of KABP of AI among primary school students, their parents and teachers
- To examine the relationship between the level of HPS and the level of KABP of AI

Methods

- Study area

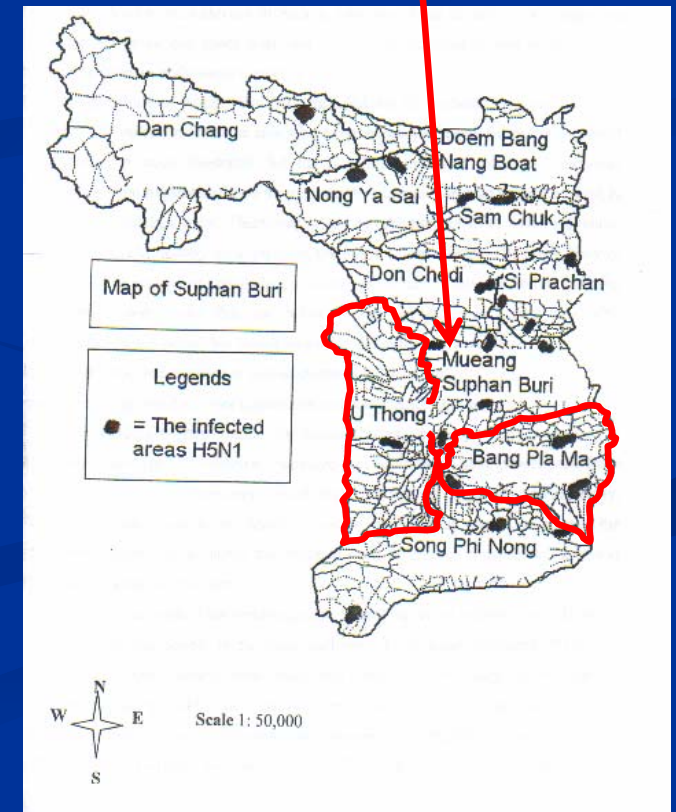
- 24 primary schools
 - 6/14 Gold
 - 6/31 Silver
 - 6/26 Bronze
 - 6/35 Developing

- Participants

- Students grade 4-6 (n=1428)
- Parents (n=1317)
- Teachers (n=105)

- Ethical approval

- The University of Tokyo
- Mahidol University, Thailand



HPS Gold school



HPS Bronze school



Data collection & analysis

- Self-administered questionnaires (5 sections, 30 min)
 - Socio-demographic information (11~13 items)
 - Knowledge of AI (10 items)
 - Attitude towards AI (9 items)
 - Beliefs about AI (4~6 items)
 - Practices of AI (12~14 items)
- Data analysis
 - Mean, standard deviation, proportions, Kruskal-Wallis test

Table 1. Socio-demographic characteristics of students, parents and teachers

Characteristics	Students (%) n=1428	Parents (%) n=1317	Teachers (%) n=105
Age (mean)	9-16 years (10.8)	24-78 years (40.7)	24-57 years (45.9)
Female	50.4	61.3	60.6
Highest educational level			
Primary school		71.5	0.0
Secondary school	NA	22.7	0.0
Diploma/Bachelor/Postgraduate		4.2	100.0
Others*		1.5	0.0
Main occupation			
Farmer		26.7	
Labourer	NA	65.7	NA
Government officer		1.9	
Others [†]		5.7	
<5,000 Baht (\$159) income/month	NA	72.1	NA
>5 family member	55.5	54.2	39.7
Having poultry in/around house area	52.8	49.6	27.4
Ever heard about avian influenza	98.6	99.1	100.0
Source of Information (by type)^{††}			
Personnel	51.5	43.6	78.8
Mass media	94.6	93.6	99.9
Knowing close person who suffer from avian influenza	7.2	11.0	4.9

* Others include; no education and vocational school

†Others include; housekeeper; student and unemployed

††Numbers may not add up to total because of multiple answers

Table 2. Correct knowledge of avian influenza among students, parents and teachers

	Students (%) n=1428	Parents (%) n=1317	Teachers (%) n=105
Transmission			
Avian influenza can be transmitted to human by touching dead poultry	95.9	95.1	98.1
Avian influenza can be transmitted to human by carrying dead poultry	7.3	80.1	88.3
Avian influenza can be transmitted to human by touching faeces of dead poultry	93.1	92.0	96.2
Risk group			
Elderly, age 65 and older, are susceptible to avian influenza	95.1	93.7	96.1
Children playing around dead poultry are susceptible to avian influenza	5.7	85.9	80.8
Symptom			
Major signs and symptoms of avian influenza	76.0	81.0	94.0
Prevention			
Avian influenza can be prevented by washing hands with soap after touching raw eggshells	6.7	85.3	86.5
Avian influenza can be prevented by wearing gloves when contact with avians	95.1	95.0	97.1
Control			
It is necessary to report to local authority/parents in case one see unexpectedly dead poultries	4.9	90.9	95.0
It is necessary to consult to doctor immediately in case of getting common cold with high fever and cough	3.7	92.4	95.2

Table 3. Desirable attitudes towards avian influenza among students, parents and teachers

	Students (%) n=1428	Parents (%) n=1317	Teachers (%) n=105
Transmission			
Do not want to contact with dead poultry	85.2	83.4	92.2
Do not want to carry dead poultry	82.6	82.9	92.2
Anxious about touching faeces of dead poultry	73.4	69.3	78.1
Risk group			
Willing to advice children/siblings not to touch domestic poultry	75.7	81.4	92.2
Willing to advice elderly, age 65 and older, to wash eggshells when they cook eggs	82.4	83.0	91.4
Symptom			
Would prefer to stay in bed than consult to doctor when one get common cold with high fever and cough	74.7	76.4	88.6
Prevention			
Willing to wear gloves when contact with avians	81.4	84.0	89.2
Willing to wash hands with soap after touching raw eggshells	86.5	86.6	83.8
Control			
Willing to pick dead avian and bury immediately by oneself	57.8	47.2	41.9

Table 4. Desirable beliefs about avian influenza among students, parents and teachers

	Students (%) n=1428	Parents (%) n=1317	Teachers (%) n=105
Transmission/Prevention			
Can protect oneself from avian influenza	70.2	76.1	90.2
Can practice preventive measures against avian influenza	69.5	73.1	90.3
Control			
Have enough knowledge to advice my family how to protect themselves from avian influenza	71.4	70.4	79.0
Can discuss avian influenza issues with family	75.9	80.6	92.3
Can give lessons related to avian influenza integrated with other subjects	NA	NA	93.3
Can send messages about avian influenza to community (through students)	54.6	NA	91.3

Table 5. Correct practices of avian influenza among students, parents and teachers

	Students (%) n=1428	Parents (%) n=1317	Teachers (%) n=105
Transmission			
Touched faeces of dead poultry	73.6	72.7	87.6
Carried avian carcasses	82.1	84.2	99.0
Touched dead poultry	71.7	71.1	93.2
Risk group/Prevention			
Advised children/siblings not to touch domestic poultry	21.8	44.2	40.0
Advised elderly to wash eggshells when they cook eggs	26.4	34.0	22.3
Symptom/Control			
Immediately went to doctor when one get common cold with high fever and cough*	42.7	50.8	31.8
Prevention			
Wore gloves when contact with avians*	41.2	42.8	40.7
Washed hands with soap after touching raw eggshells*	48.7	53.8	58.8
Control			
Advised family members how to protect themselves from avian influenza infection	23.7	33.3	24.8
Gave lessons related to avian influenza integrated with other subjects	NA	NA	21.0
Discussed avian influenza issues with family member	18.9	26.9	10.5
Immediately reported to the local authority in case one see unexpectedly dead poultries*	42.5	33.4	14.6
Sent messages about avian influenza to community through students	15.8	NA	9.6

All the questions are asked about past 3 months practices

* Those who are not applicable to answer were excluded

Table 6. Relationships between KABP score and HPS levels among students, parents and teachers

Variables		Mean rank of knowledge score	Mean rank of attitude score	Mean rank of beliefs score	Mean rank of practices score
HPS levels*	Students (%) n=1428				
Gold	363 (25.4)	726.4	727.0	749.7	706.8
Silver	318 (22.3)	773.2	803.5	738.6	794.3
Bronze	427 (30.0)	678.2	660.3	684.6	698.5
Developing	319 (22.3)	691.1	681.9	688.3	662.9
		P = 0.002	P = <0.001	P = 0.050	P = 0.001
HPS levels*	Parents (%) n=1317				
Gold	322 (24.4)	664.6	690.3	685.7	716.7
Silver	303 (23.0)	691.9	733.7	686.9	715.1
Bronze	385 (29.2)	646.3	587.1	645.3	614.7
Developing	306 (23.2)	634.3	638.0	618.4	596.4
		P = 0.206	P = <0.001	P = 0.037	P = <0.001
HPS levels*	Teachers (%) n=105				
Gold	25 (23.8)	58.5	46.3	59.5	60.0
Silver	27 (25.7)	49.8	60.9	44.9	47.5
Bronze	23 (21.9)	55.2	58.0	53.4	51.1
Developing	30 (28.6)	49.6	47.7	54.6	53.6
		P = 0.558	P = 0.189	P = 0.179	P = 0.511

*Kruskall-Wallis test

Table 7. Relationships between KABP score and higher and lower level of HPS among students and parents

Variables		Mean rank of knowledge score	Mean rank of attitude score	Mean rank of beliefs score	Mean rank of practices score
HPS levels	Students (%) n=1428				
High	682 (47.8)	748.2	762.7	762.7	747.7
Low	746 (52.2)	683.7	669.6	669.6	683.3
		P = 0.001	P = <0.001	P = 0.006	P = 0.003
HPS levels	Parents (%) n=1317				
High	625 (47.5)	677.8	711.3	686.3	715.9
Low	691 (52.5)	641.0	609.7	633.4	606.6
		P = 0.062	P = <0.001	P = 0.006	P = <0.001

Discussion

- High level of correct knowledge, desirable attitudes and beliefs, compared with relatively low level of correct practices
 - ➔ ■ High level of knowledge does not necessarily lead to behavioural change (Olsen SJ, 2005, Prapasiri P, 2005)
- Students' knowledge on AI was considerably low (3.7%-7.3%) on some of the items
 - ➔ ■ Those selected information may not been reached
 - Incorrect understandings of the received information
- Mean rank of knowledge*, attitude, beliefs and practices scores were significantly higher among students and parents, but not teachers, in higher level of HPS, compared with lower level of HPS
 - *only among students
- ➔ ■ Students and parents in higher level of HPS have more capacity to deal with AI, compared with lower level of HPS

Recommendations

- More practical interventions are necessary to improve the participants' risky behaviours
- Tailored educational programmes or other means of efforts are needed to target to school children to improve correct knowledge on AI
- ➔ ■ Tailored health education intervention, utilizing HPS system, are regarded to be the most effective intervention, not only to improve the participants' knowledge, attitude and beliefs, but also their behaviours

Collaboration

- Dr.Pimpimon Thongthien *Ministry of Education, Thailand*
- Dr.Praphasri Jongsuksantigul
Ministry of Public Health, Thailand
- Dr.Jitra Waikagul
- Dr.Wipawee Jampangern
- Dr.Piyarat Butraporn
- Dr.Rungwit Mas-ngammueng
Mahidol University, Thailand
- Dr.Masamine Jimba *The University of Tokyo, Japan*
- Dr.Jun Kobayashi
*Bureau of International Medical Cooperation,
International Medical Centre of Japan, Japan*