

Are The Rural Baram Communities Aware Of Influenza Pandemic?

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Abstract: A research team from Universiti Malaysia Sarawak (UNIMAS) consisting of researchers from three different faculties has visited certain parts of Baram which were Marudi, Long Lama, Long Bedian and Long San to assess the awareness of influenza outbreak and preventive measures among the rural communities. The team also investigates the information processing and styles, including the engagement and utilization of media by the rural communities which is vital for effective risk communication in any activity related to public health campaign. A five-day trip from UNIMAS to all the study locations, starting from 14th of May until 18th of May 2012, has enabled the research team to gather feedback via survey and interviews to assess the level of awareness, knowledge and health practices among the rural communities with regard to dealing with potential influenza pandemic outbreaks. Focus group interviews conducted at Long Bedian and Long San have further permitted the research team to gather the community feedback in relation to barriers in attaining effective risk communication using media and other channels in public health campaign activities targeted for rural communities of Sarawak. Health education talk was also given to the local community during this trip. The team had also enjoyed the privileges of sharing and promoting UNIMAS, in conjunction with its 20th anniversary, to the local students and parents throughout the research journey. Some important findings inferred from this research expedition include the relatively low level of basic knowledge about H1N1 pandemic among the respondents. However, good percentage of participants has some knowledge to certain important preventive measures including hand washing, cover nose and mouth when sneezing, avoid crowded area, and throwing tissue into rubbish bin after use. On the methods the respondents obtain access to information about swine flu outbreak, a big number of respondents rely on TV, radio and newspaper to obtain information pertaining to the H1N1 outbreak. Besides that, most respondents gained H1N1 information through their family members and friends, as well as government health talk or campaigns and posters that provided related H1N1 information. Printed materials that are not translated into their mother-tongue is the most common barrier related to communication channel that respondents have experienced in understanding the information about H1N1. The main challenge faced by the communities is the high illiterate level in the written common English language. Furthermore, the complex terminologies used in the disease understanding is a big issue for them.

Index Terms: Pandemic influenza, awareness, Baram communities

1 INTRODUCTION

Flu or influenza, is a contagious respiratory infection caused by a variety of influenza viruses. There are three types of flu viruses: A, B and C. In term of genetic stability, type A undergoes antigenic shift and drift, type B undergoes antigenic drift and type C is relatively stable. Type A flu or influenza A viruses are capable of infecting human as well as animals; although it is more common for people to suffer the ailments associated with this type of flu. Swine influenza (swine flu, hog flu, or pig flu) is a respiratory disease which is endemic in pigs [1].

Genetic shift or reassortment among different influenza viruses of different origin (eg, avian, swine or human) in a single host has been responsible for pandemic outbreak of the disease in human [2]. One of the most devastating pandemic of influenza in history is the 1918 "Spanish flu" which has killed more 50 million people worldwide and this has become the touchstones for today's public health preparedness initiatives [3]. The recent pandemic outbreak, caused by a novel strain of influenza A virus subtype H1N1 was first identified in Mexico in March 2009. Malaysia, especially Sarawak also suffered from its high case fatality rate [4]. The worries and misconception regarding the outbreak has led to an inappropriate behavior by the public to comply with precautionary measures. Recently, another influenza outbreak of different strain has occurred in China, caused by H7N9 [5]. During any outbreak of infectious diseases, the public, health officials, journalist, bloggers and twitters strives to find out the severity, the spreading speed and method of containing it. While there are lots of information on the awareness and attitudes of people in the urban city towards the outbreak of pandemic influenza and other infectious diseases, very little information can be obtained on pandemic outbreaks awareness with respect to the rural community [6], [7]. Baram is a district located in the remote area within fourth Division of Sarawak, Malaysian Borneo. The population of the remote area of Baram consists of mostly the Orang Ulu (Upriver People), a collective name that includes the tribes Penan, Kayan, Kenyah, Saban, Punan and Kelabit. For the last few years, there has been large-scale logging activities and subsequent creation of oil palm plantation and other monocrop within the area. Almost all of the Orang Ulu tribe live in longhouses located near the mouth of tributaries along Baram River. Knowing the awareness and attitudes of the public, especially the people in the remote areas and their response to pandemic disease disasters would assist public health agencies in those areas to pinpoint

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knowledge gaps which may be utilized in developing specific educational programs to increase the awareness of the public. Hence, this study was initiated to assess the extent of awareness and knowledge level on influenza H1N1 pandemic among the rural community in the remote area of Baram, Sarawak, Malaysian Borneo.

2. METHODOLOGY

A five-day trip from Kuching to Marudi, Long Lama, Long Bedian and Long San starting from 14th of May until 18th of May 2012, has enable the research team to gather information and feedback via survey and focus group interview to assess the level of awareness, knowledge and health practices among the rural communities with regard to dealing with potential influenza pandemic outbreaks. The information processing and styles was investigated, including the engagement and utilization of media by the rural communities, which is vital for achieving effective risk communication in any activity related to public health campaign. Face-to-face dialogue sessions using focus group method was conducted at two places Long Bedian and Long San to gather the community feedback in relation to barriers in attaining effective risk communication using media and other channels in public health campaign activities. Health education talk was also given to the local communities. The following summarises the survey findings based on 88 completed questionnaires that the team was able to collect from respondents aged between 16 to 86 years old during the research trip.

3 RESULTS AND DISCUSSION

The socio-demographic characteristics of the respondents participated in this study is shown in Table 1. Four main locations identified as the sites for this study which represents the rural communities in Baram were Long San, Long Bedian, Long Lama and Marudi. The respondents were from different ethnics, educational levels and employment status as shown in Table 1.

Table 1: Respondents Profile

Variables		n	%
Location	Marudi	4	4.5
	Long Bedian	21	23.9
	Long Lama	11	12.5
	Long San	47	53.4
	Other	5	5.7
Gender	Male	38	43.2
	Female	50	56.8
Ethnic	Iban	5	5.7
	Malay	4	4.5
	Chinese	6	6.8
	Bidayuh	1	1.1
	Kayan	20	22.7
	Kenyah	29	33.0
	Penan	16	18.2
	Narum	1	1.1
	Kelabit	4	4.5
	Others	2	2.3

Education level	No formal education	7	8.0
	Primary school	8	9.1
	Secondary school	62	70.5
	University	11	12.5
Employment status	Working full-time	24	27.3
	Student	31	35.2
	Not working	26	29.5
	Own a business	7	8.0
	Transportation	1	1.1
TV at home	Yes	65	73.9
	No	23	26.1
Radio at home	Yes	57	64.8
	No	31	35.2
Computer at home	Yes	27	30.7
	No	61	69.3
Internet at home	Yes	17	19.3
	No	71	80.7
Mobile phone	Yes	51	58.0
	No	37	42.0

Table 2 shows the different ways respondents obtain access to information about pandemic flu outbreak. In an outbreak of infectious disease, the media including TV, written media, radio and internet should play important roles in disseminating the information [6]. In this study, a big number of respondents rely on TV (53.4%), followed by radio (39.8%) and newspaper (37.5%) to obtain information pertaining to the pandemic H1N1 outbreak. However, only 14% of the respondent obtained information using the internet. In addition, most respondents also retrieved H1N1 information through their family members and friends (25%), as well as government health talk seminar or campaigns (20%) and posters (21.6%) that provide related H1N1 information.

Table 2: Ways Respondents Obtain Access to Information about Swine Flu Outbreak

Information Source	n	%
Family/close relatives	20	22.7
Friends/neighbours	22	25.0
Community leader	5	5.7
Workplace	6	6.8
Government health talk seminar or campaigns	20	22.7
TV	47	53.4
Internet	13	14.8
Radio	35	39.8
Newspaper	33	37.5
Magazine	12	13.6
Newsletters	13	14.8
Pamphlets	9	10.2
Poster	19	21.6
Health talk seminar or campaigns by NGO	8	9.1
Mobile phone	5	5.7
Others	3	3.4

Table 3: Knowledge of Respondents on the Causes of H1N1

Causes	Yes		No		Don't Know	
	n	%	n	%	n	%
Virus	51	58.0	13	14.8	24	27.3
Immunodeficiency	27	30.7	24	27.3	37	42.0
Inherited Disease	3	3.4	57	64.8	28	31.8
Infectious Disease	45	51.1	20	22.7	23	26.1

Table 3 illustrates the knowledge of respondents on the causes of pandemic influenza H1N1. Overall, our finding reveals that a slightly more than a half of our respondents demonstrated adequate knowledge about pandemic H1N1 influenza pertaining to the causative agent as a virus (58%), and correctly answered H1N1 as an infectious disease (51%). However, we found that a small number (14.8%) of our respondents were of the opinion that H1N1 influenza is not caused by virus, and close to one-third (27%) of the respondents did not know about the causative agent.

Table 4: Knowledge of Respondents on the Way H1N1 Transmits

Ways of Transmission	Yes		No		Don't Know	
	n	%	n	%	n	%
Droplets after coughing or sneezing	42	47.7	13	14.8	33	37.5
Touching an infected person	17	19.3	37	42.0	34	38.6
Using objects used by an infected person	39	44.3	21	23.9	28	31.8
Sexual intercourse	27	30.7	29	33.0	32	36.4

Table 4 shows the knowledge of the respondents with regard to the way of the transmission of the pandemic influenza. Less than half (47.7%) of the respondents agreed that H1N1 can be transmitted through droplets after coughing or sneezing and only 44.3% agreed the transmission can occur by using objects used by an infected person. It is quite alarming to see that about 37.5% of the respondents did not know that H1N1 can be transmitted through droplets after coughing or sneezing. However, 42.0% of the respondents stated that H1N1 cannot be transmitted if he or she touched or be in contact with an infected person.

Table 5: Knowledge of Respondents on the Characteristics of H1N1

Characteristics	Yes		No		Don't Know	
	n	%	n	%	n	%
Similar symptoms as common flu	43	48.9	13	14.8	32	36.4
An infected person can die	50	56.8	12	13.6	26	29.5
Human can be infected via contact with pig	12	13.6	41	46.6	35	39.8
Human can be infected via contact with animals other than pig	10	11.4	35	39.8	43	48.9
Human can be infected through eating pork	13	14.8	41	46.6	34	38.6
H1N1 can be cured through vaccine	32	36.4	10	11.4	46	52.3
H1N1 can infect people more than once in life	32	36.4	16	18.2	40	45.5

The knowledge of the respondents on the characteristics of H1N1 is presented in Table 5. If the public are to respond appropriately during a pandemic outbreak, they should possess the basic knowledge on disease in relation to its mode of spreading, how infectious the disease is and the availability of vaccines to protect against that particular disease. A slightly more than half (52.3%) of the respondents were not sure whether vaccine can be used to prevent the disease during outbreak while 11.4% answered that vaccine cannot protect them against the flu. In addition, more than half (56.8%) of the respondents think that an infected person can die while 13.6% says they will not die if infected and 29.5% are not sure. Most (49.8%) of the respondents agreed that H1N1 has similar symptoms as common flu. In addition, many respondents did not think that human can be infected via contact with pig or through eating pork. However, many respondents are unsure whether or not human can be infected via contact with animals other than pig. Quite a number were also unsure if H1N1 can infect people more than once in life. Based on the knowledge of the respondents towards the symptoms, close to half (48.9%) of the respondents agreed that the symptom is similar to common flu.

Table 6: Prevention Measures Whenever Outbreak is Reported

Prevention Measures	Yes		No	
	N	%	n	%
Wash hands very often	81	92.0	7	8.0
Avoid touching eyes, nose and mouth if there are flu symptoms	56	63.6	32	36.4
Cover nose and mouth with a tissue when coughing or sneezing	77	87.5	11	12.5
Throw the tissue in the trash bin immediately after using it	76	86.4	12	13.6
Wear a face mask in crowded areas	45	51.1	43	48.9
Avoid normal activities outside if there are flu symptoms	47	53.4	41	46.6
Avoid any crowded areas if a reported outbreak is heard	62	70.5	26	29.5

Table 6 depicts majority respondents did execute prevention steps whenever an outbreak is reported. For example, 92% of the respondent said they wash their hand frequently during the outbreak. About 87.5% of the respondent cover their nose and mouth with a tissue when coughing or sneezing, 86.4% throw their tissue in the trash bin immediately after using it, 70.5% avoided any crowded areas if a reported outbreak is heard. Despite relatively low level of basic knowledge about H1N1, a majority of the respondents agree to certain important preventive measures including hand washing frequently, cover nose and mouth when sneezing, avoid crowded area and throwing tissue to rubbish bin after use. Furthermore, a slightly more than half of the participants believed that H1N1 can kill an infected person and the disease is a threat to their health.

Table 7: Common Barriers Related to Communication Channel in Understanding the Message about H1N1

Barriers	n	%
Printed materials are not translated into mother-tongue language	36	40.9
Speakers in the seminar or healthcare talk did not use mother-tongue language	24	27.3
Related information through Internet and website are all in English	28	31.8
Lack of explanation about difficult terminologies related to the disease	32	36.4
Illiterate	9	10.2
Mistrust the messengers	11	12.5
The nearby healthcare centres are very far from home	16	18.2
Lives in an isolated place	22	25.0
No access to TV or radio	10	11.4
No access to the Internet	27	30.7
No access to telephone or mobile phone	18	20.5
Transportation problem	28	31.8
Others	2	2.3

Table 7 demonstrates the common barriers related to communication channel in understanding the message about flu pandemic. Most respondents (40.9%) pointed out that printed materials that are translated into language other than their mother-tongue is the most common barriers related to communication channel that respondents experienced in understanding the message about the flu pandemic. Respondents also faced difficulties in understanding information through internet and website because they are all written in English. Their problem is also the lack of explanation about difficult terminologies related to the disease. In addition, the lack of access to internet in these remote areas and transportation problems are also the main challenges faced by most of the respondents. Overall, the scores on general knowledge about H1N1 influenza were low, indicating that the respondents are not well aware of knowledge related to the spread of H1N1 influenza. The majority of the respondents however showed a good level of awareness with regard to practicing good healthcare practice that can minimize the spread of the influenza.

4 CONCLUSION

Pandemic outbreak caused by influenza virus and other infectious disease agents still remains the biggest threat to human due to high mortality rate associated with their infections. Until now we do not understand why the previous devastating pandemics such as the "Spanish flu" in 1918 and "Swine flu" in 2009 were so severe and that we cannot therefore be confident that our modern medical measures would succeed against a similar future challenges. Hence, the ongoing preventive measure, which can be understood through survey of awareness and attitude among the community is of utmost importance. Our study found out that there is still low level of awareness on pandemic influenza

outbreaks among the rural communities. The findings of this study can offer pragmatic contributions to policy makers and academic community with regard to formulating good strategies and measures to ensure effective messages about ways to handle potential influenza spread in the community context will be processed effectively by the rural communities. Based on this study, it is recommended that there is a need for continuous awareness programs and health campaigns on influenza pandemic targeted for the rural communities.

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REFERENCES

- [1]. N.M. Scalera, M.B. Mossad, "The first pandemic of the 21st century: A review of the 2009 pandemic variant influenza A (H1N1) virus," *Postgraduate Medicine*, vol. 121, no. 5, pp. 43-47, 2009.
- [2]. J.K. Taubenberger, and J.C. Kash, "Influenza virus evolution, host adaptation, and pandemic formation," *Cell Host and Microbes*, vol. 7, pp. 440-451, 2010.
- [3]. J.K. Taubenberger, and D. Morens, "History 1918 influenza: The mother of all pandemics," *Centers for Disease Control and Prevention*, vol. 12, no. 1, 2006.
- [4]. K.C. Lee, "Influenza A / H1N1 pandemic: The scare of 2009," *Malaysian Journal of Medical Sciences*, vol. 16, pp. 1-4, 2009.
- [5]. CDC (Center for Disease Control), <http://wwwnc.cdc.gov/travel/notices/watch/avian-flu-h7n9-china>. 2014.
- [6]. H.H. Balkhy, M.A. Abolfotouh, R. Al-Hathloul, and M.A. Al-Jumah, "Awareness, attitudes, and practices related to the swine influenza pandemic among the Saudi public," *BMC Infectious Diseases*, vol. 10, no. 42, pp. 1-7, 2010.
- [7]. S.K. Rathi, H. Gandhi, and B.S. Bhavsar, "Modeling for appropriate awareness of H1N1 among urban population of Vadodara, India," *Healthline*, vol. 2, pp. 19-23, 2011.