



# Behaviour Response among Educated Young Adults towards the H1N1 Pandemic

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## Abstract

H1N1 has caused a significant number of fatalities in Malaysia. This study investigated the behaviour response and the attitude of educated young adults towards their health. This study was conducted in a suburban territory. Hypothesis testing was completed using Chi-square and Fisher Exact test and they examined categorical data to compare the differences in proportion. This study concluded that health seeking behaviour and behaviour changes among educated young adults in Malaysia should be improved. There was no strong predictor to indicate that difference in educational background will grant positive difference in health seeking behaviour and behaviour changes with regard to the H1N1 pandemic.

**Keywords:** H1N1; adult; health behaviour.

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## 1.0 Introduction

H1N1 has caused a significant number of fatalities in Malaysia. The question is, are the people aware of the threat caused by H1N1? At the same time, information related to health campaign has also been questioned. From informal interviews with students, researchers found that many students do not feel threatened with the disease. They also believed that the H1N1 is not a serious threat to them. This may be related to the misconception towards the disease itself. Misconception towards H1N1 may lead to ineffective treatment and high cost of health practice. As far as this study is concerned, there is no local research evidence to answer the above question.

The misconception may be caused by ineffective campaign/ information supply by the authority. Public misconception is one of the motivating research areas that is studied by Lau et. al. (2009) and yet limited exercise is available in Malaysia. Lau et. al. (2009) clearly studied the widespread of public misconception in the early phase of the H1N1 influenza epidemic in Hong Kong (e.g.: 43.1% wrongly believe that the new H1N1 influenza is one type of Avian flu, 22.1% believe that there would be an outbreak of H1N1 in Hong Kong in the coming 12 months). That study is also concerned about the possibility that H1N1 is now classified as pandemic. Public misconception towards causes and effects as well as how to prevent this disease from spreading may cause panic and anxiety which in turn may lead to ineffective treatment. As studied by Lau et. al. regarding SARS (2005), H1N1 may have strong and significant bearings on the practice of health seeking behaviours. Findings may also answer the question of perceived future risk of H1N1 among students as Lau et. al. (2007) concluded on the possible outbreak of H5N1 in Hong Kong.

From observation, many Malaysians are not following the government's recommendations while doing outdoor activities during the H1N1 pandemic. For example, there was a small number of people who wear face masks in public area even though it has been stressed out by the government multiple times. This scenario creates an interesting subject to study regarding Malaysians' attitude towards their personal health.

## 2.0 Literature Review

Health behaviour consists of behaviour, attitudes, and philosophy of life (Bruhn, 1988). As suggested by health behaviour research, people are different in their ability to control and influence their own health (Cox, Coster, & Russell, 2004). In designing health message programs, the individual differences factors should be always taken into consideration. This is because, individual differences may affect the way the message is processed (Prentice-Dunn, 2004). Health is associated with common habits and social networks, and it is a process where people learn during the process of growing up (Bruhn, 1988). Furthermore, healthy behaviours are often extremely complex (Egger, Spark, & Lawson, 1990).

In general, delaying death is the most important health prevention concept (Pitts, 1996). It is suggested that, behaviour is the primary concern in planning intervention strategy where it can be prevented through behaviour change (Prentice-Dunn, 2004). The question is how many people are aware of this risk? How many people are aware that the threats are

severe? According to Weinstein, Lyon, Sandman, & Cuite (1998), the most crucial stage in prevention strategy is to make people pay attention, become aware and take serious steps towards a risk. PMT consists of five important stages. These five stages show the individual's moves to adopt a healthy behaviour (Weinstein, 1988). These five stages were as follows,

1. Has heard of the hazard
2. Believes others are susceptible to the hazard
3. Acknowledges personal susceptibility to the hazard
4. Decides to take action against the hazard
5. As suggested by Pitts (1996), taking precaution is the key element for this model where acceptance knowledge alone is sufficient for people to change and it is significant for others to respond to their personal susceptibility.

Health behaviour can be regarded as any actions taken by people in order to attain, maintain, or/and regain good health and to prevent illness. More specifically, it may include other aspects such as the definition by Gochman: "those personal attributes such as beliefs, expectations, motives, values, perceptions, and other cognitive elements; personality characteristics, including affective and emotional states and traits; and overt behaviour patterns, actions, and habits that relate to health maintenance, to health restoration, and to health improvement" (Gochman, 1997). Behaviours such as in the form health-enhancing behaviours like exercising, complying to medical advices, maintaining a balanced diet, getting enough sleep, going for screening, and so forth or avoiding health compromising behaviours like smoking, drinking alcohol, overeating and using drugs could affect one's health in one way or another. Health behaviours are important because they are related to illness directly or indirectly, and may implicate poor health habits of a person in his/her life. For instance, people might procrastinate even though they are experiencing certain symptoms. This in the end may result in an undesirable condition of their health, due to the extent that their symptoms are getting worse. In addition, ignoring the symptoms without searching for medical attention can result in more difficult treatment administered later on, as well as jeopardizing health and increasing the risk of mortality.

Furthermore, health behaviours can be divided into two, namely preventive health behaviour and risk-taking behaviour (Hagger-Johnson & Whiteman, 2007; Vickers, Conway, & Hervig, 1990). Preventive health behaviour may include any action undertaken by a person who believes himself or herself to be healthy for the purpose of detecting or preventing disease in an asymptomatic state. This can consist of self-protective or cautious behaviour, such as using seat belts, going for early screening for symptoms, or wearing a condom in sexual intercourse, with the intention to give protection from potential harm. Another term related to health behaviour is primary prevention, generally considered as taking measures to combat risk factors for illness before an illness ever has a chance to develop (Taylor, 2006).

There are various health-related theories or models that attempt to explain human health behaviours; and also try to investigate why some people conduct themselves in ways that work against the aims of maximizing health and minimizing disease (Brannon & Feist, 2009). These theories particularly are interested in explaining and predicting health-

seeking behaviours; how and why people seek for health care or medical attention.

The Health Belief Model by Becker and Rosenstock (1984) has been widely used in looking for the exact factors why people seek for medical attention, by focusing on the attitudes and beliefs of individuals. Four beliefs or components are included: (1) perceived susceptibility to disease or disability, (2) perceived severity of the disease or disability, (3) perceived benefits of health-related behaviours, and (4) perceived barriers to health-related behaviours (Brannon & Feist, 2009). According to this model individuals are more likely to take preventive behaviours to a symptomatic or threatened to a disease or condition, (b) believe or perceive the occurrence of a disease or condition could severely affect some components in their life, (c) believe or perceive that taking a certain preventive action can be beneficial, and (d) believe or perceive that taking a certain preventive action would not imply overcoming important barriers or obstacles.

The Health Belief Model has been theoretically applied to a wide range of health behaviours. One of the areas where the Health Belief Model is normally applied is preventive health behaviours, which include health- promoting and health-compromising behaviours as well as vaccination and contraceptive practices (Conner & Norman, 1996). This model has generated mixed results with regard to its usefulness and effectiveness in explaining and predicting health behaviours. One of the reasons is due to its limited beliefs & components by disregarding some other important factors such as ethnic differences and economic conditions. A research of the factors involved in health belief model concerning influenza vaccination indicated that individuals who perceived that they were more vulnerable to influenza and that influenza was a severe disease were more likely to acquire a vaccination in comparison to those who believed they were less vulnerable or that the influenza was not a severe disease (Chen, Fox, Cantrell, Stockdale, & Kangawa-Singer, 2007). Nevertheless, it was pointed out that these two variables were highly related to certain ethnicities than others.

### **3.0 Methodology**

This is a cross-sectional study conducted at the Faculty of Health Sciences, UiTM Puncak Alam, Malaysia. This faculty consists of eight departments with a total of 850 registered students. The departments are Occupational Therapy, Physiotherapy, Environmental Health, Nursing, Medical Lab Technology, Medical Imaging, Optometry and Nutrition and Dietetic. In this study, 102 students were recruited in August to September 2009, after three months of the H1N1 pandemic.

Participants were approached at random during their lecture time. The inclusion criteria were: age between 18 and 25 years; sufficient knowledge of English language to answer the questionnaire; and studying fulltime when the study was conducted. Students were reassured that their participations were voluntary and the answers to the questionnaires will be kept confidential.

A self administered questionnaire was used for this study, in which the students were asked to fill out individually under the supervision of the researchers. The questionnaire

contained questions about demography, knowledge of H1N1, health seeking behaviour, stress level, social burden, source of H1N1 information, and perceived risk of getting H1N1 in the future.

The response of questionnaire for health seeking behaviour was divided into two categories: 'Yes', and 'No Change'. Of all eight questionnaires regarding health seeking behaviour, respondents who answered four or less 'Yes' category were considered as having a 'negative behaviour' towards H1N1. On the other hands, respondents who answered five and more 'Yes' answers then were considered as having a 'positive healthy behaviour'. The response for perceived risk of getting H1N1 in the future was divided into four categories: 'No chance at all', 'Most likely', 'Likely' and "Not sure". All respondents who answered the first two categories would then be considered as 'Low tendency' of getting H1N1 in the future. However, respondents who answered the last two would be considered as 'High tendency' of getting H1N1 in the future. Those responses were used during the hypothesis testing which aimed to test the association between health seeking behaviour and student perception on possibility of getting H1N1 in the future.

Descriptive data analysis was performed using Statistical Package for the Social Sciences (SPSS) Version 17.0. Hypothesis testing was completed using either Chi-square or the Fisher Exact test for categorical data to compare the differences in proportion. The significant level was set at  $P < 0.05$ .

## 4.0 Results And Discussions

### 4.1 Demographic Characteristics

According to Table 1, majority of the participants were female, 76 (74.5%) and only 26 (25.5%) males had participated in this study. This participation rate reflects the male-female distribution of students in this university. The average age was 20.6 years [standard deviation (SD) 1.3].

Table 1: Characteristics of the Respondents

	n (%)	mean (SD)
<b>Gender</b>		
Male	26 (25.5)	
Female	76 (74.5)	
<b>Age</b>		20.6 (1.3)
<b>Education</b>		
Diploma	36 (35.3)	
Degree	66 (64.7)	
<b>Course</b>		
Environmental health	49 (48.0)	
Physiotherapy	20 (19.6)	
Occupational therapy	21 (20.6)	
Dietetic	4 (3.9)	
Nursing	8 (7.8)	

#### 4.2 Knowledge, Misconceptions and Unconfirmed Beliefs on H1N1

With reference to Table 2, 46.1 % of the respondents wrongly believed that the H1N1 influenza pandemic was one type of avian flu. The prevalence of unconfirmed belief related to modes of transmission was also high: 'via eating well cooked pork' (10.8%), 'via long distance airborne aerosol' (53.9%), and 'via insect bites' (8.8%). In contrast, the prevalence of respondents not knowing that the virus is transmittable via droplet, via contact with affected persons and contact with contaminated objects were, respectively, 16.7 %, 6.9 % and 22.5 %. However there were also respondents who were in doubt about the mode of H1N1 transmission, respectively, 8.8 %, 2.9 % and 12.7 %.

Table 2: Respondents Knowledge, Misconceptions

Knowledge	n (%)		
	Yes	No	Not sure
H1N1 is one type of Avian flu	47 (46.1)	32 (31.4)	23 (22.5)
H1N1 is transmitted via eating well cooked pork	11 (10.8)	72 (70.6)	19 (18.6)
H1N1 is transmitted via long distance air-borne aerosol	55 (53.9)	30 (29.4)	17 (16.7)
H1N1 is transmitted via insect bites	9 (8.8)	86 (84.3)	7 (6.9)
H1N1 is transmitted via droplet	76 (74.5)	17 (16.7)	9 (8.8)
H1N1 is transmitted via contact with affected person	92 (90.2)	7 (6.9)	3 (2.9)
H1N1 is transmitted via contact with contaminated object	66 (64.7)	23 (22.5)	13 (12.7)
H1N1 is treated using Influenza vaccine (seasonal flu)	44 (43.1)	26 (24.5)	33 (32.4)
Currently there are no drugs to treat H1N1	45 (44.1)	26 (25.5)	31 (30.4)
The information from university is enough	51 (50.0)	39 (38.2)	12 (11.8)
The information from government is enough	56 (54.9)	31 (30.4)	15 (14.7)

#### 4.3 Health Seeking Behaviour

According to Table 3, majority of the respondents said they were improving their personal hygiene (86.3 %). However, 13.7 % of them remain unchanged. Of the respondents, 56.9 % agreed to wear a face-mask in public area as a precaution. The majority of the respondents said they were washing hands more frequently after the H1N1 pandemic (82.4 %). A quarter of the respondents were willing to spend more money on health (25.5 %). Similarly 25.5 %, 24.5 % and 22.5 % of them respectively, getting enough sleep, increased time on exercise and controlled their body weight because of H1N1.

Table3: Respondents Health Seeking Behaviour After H1N1 Pandemic (n=102)

Health seeking behaviour	n (%)	
	Yes	No change
Improve personal hygiene	88 (86.3)	14 (13.7)
Wearing mask as a precaution	58 (56.9)	44 (43.2)
Wash hand more frequently	84 (82.4)	18 (17.6)
Spending more money on health	26 (25.5)	76 (74.5)
Getting enough sleep	26 (25.5)	76 (74.6)
Increase time on exercise	25 (24.5)	79 (77.5)
Control body weight	23 (22.5)	35 (33.3)
Actively searching information on H1N1	58 (56.7)	

#### 4.4 Social Burden

Table 4 shows the result of H1N1 as a social burden to the individual. 47.1% of the respondents agreed that, it is a public burden. Majority of the respondents also agreed that H1N1 is a burden to them.

**Table 4: Respondent Social Burden Caused by H1N1**

Social burden	n (%)				
	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
I miss the things I like to do most	19 (18.6)	40 (39.2)	23 (22.5)	12 (11.8)	8 (7.8)
H1N1 burden to me	21 (20.6)	46 (45.1)	19 (18.6)	5 (4.9)	11 (10.8)
H1N1 is burden for my family	24 (23.5)	41 (40.2)	20 (19.6)	6 (5.9)	11 (10.8)
H1N1 is burden for my friend	21 (20.6)	49 (48.0)	16 (15.7)	6 (5.9)	10 (9.8)
H1N1 is a public burden	48 (47.1)	47 (46.1)	5 (4.9)	1 (1.0)	1 (1.0)
H1N1 make me more dependent on others	5 (4.9)	24 (23.5)	38 (37.3)	16 (15.7)	19 (18.6)

#### 4.5 Source of Information

Table 5 shows that majority of the respondents agreed that posters (97.1%), radio and television (93.1%) and newspapers (90.2%) were the most influential sources of information.

**Table 5: Source of H1N1 Information**

Source	n (%)	
	Yes	No
Poster/pamphlet	99 (97.1)	3 (2.9)
Radio and television	95 (93.1)	7 (6.9)
Newspaper	92 (90.2)	10 (9.8)
On-line information	68 (66.7)	34 (33.3)
Magazine	43 (42.2)	59 (57.8)
Word of mouth	75 (73.5)	27 (26.5)
Others	45 (44.1)	57 (55.9)

#### 4.6 Stress due to H1N1

Table 6 shows the level of stress experienced by the respondents. Majority of the respondents (55.9%) reported moderate level of stress, followed by 15.7% at severe level and 2% at extreme level. In total, 92.8% of all respondents experience stress due to H1N1.

**Table 6: Respondent Stress Level**

Stress level	n (%)				
	No stress at all	Mild	Moderate	Severe	Extreme
Frequency	8 (7.8)	19 (18.6)	57 (55.9)	16 (15.7)	2 (2.0)

#### 4.7 Perceived Risk Toward H1N1 Infection in the Future

Table 7 shows the result of perceived risk toward H1N1 infection in the future. Majority of the respondents (71.6%) were not sure about the future risk of H1N1. 11.8% of the respondents believed that there is no chance at all that they will be infected by H1N1 in the future.

Table 7: Respondent Perceived Risk Toward H1N1 Infection in the Future

Perceived Risk	n (%)			
	No chance at all	Most likely	Likely	Not sure
Frequency	12 (11.8)	2 (2.0)	15 (14.7)	73 (71.6)

#### 4.8 Health Seeking Behaviour and Perceived Risk

Table 8 shows the respondents' health seeking behavior and perceived risk of H1N1. Surprisingly, there were no significant differences in seeking health behavior due to H1N1. This could be concluded that, H1N1 is not a threat to the respondents.

Table 8: Respondents Health Seeking Behaviour and Perceived Risk of H1N1

Health seeking behaviour	Perceived risk		p-value
	n (%)		
	Low tendency	High tendency	
Improve personal hygiene			
Yes	13 (14.8)	75 (85.2)	0.686
No	1 (1.9)	13 (92.9)	
Wearing mask as a precaution			
Yes	7 (12.1)	51 (87.9)	0.577
No	7 (15.9)	37 (84.1)	
Wash hand more frequently			
Yes	9 (10.7)	75 (89.3)	0.069
No	5 (27.8)	13 (72.2)	
Spending more money on health			
Yes	4 (15.4)	22 (84.6)	0.750
No	10 (13.2)	66 (86.8)	
Getting enough sleep			
Yes	2 (7.7)	24 (92.3)	0.510
No	12 (15.8)	64 (84.2)	
Increase time on exercise			
Yes	2 (8.0)	23 (92.0)	0.508
No	12 (15.6)	65 (84.4)	
Control body weight			
Yes	2 (8.7)	21 (91.3)	0.731
No	12 (15.2)	67 (84.8)	
Actively searching information on H1N1			
Yes	9 (13.2)	59 (86.8)	1.000
No	5 (14.7)	29 (85.3)	

#### 5.0 Conclusion

This study had shown that the threat of H1N1 is not strong enough to change the respondents' health behaviour. This is also aligned with a few visual observations in public places conducted during this study. For example, there were a limited number of Malaysians, who were wearing mask in public places. Even though the number of fatality had increased, this

behaviour response may represent their belief that H1N1 is not a serious issue. It is impossible for them to get affected with the disease. Parents with small children had also not taken any serious precaution towards the prevention of the disease from spreading. This study concluded that health seeking behaviour and behaviour changes among educated young adults in Malaysia should be improved. There was no strong predictor to indicate that difference in education background would grant positive difference in health seeking behaviour and behaviour changes with regard to the H1N1 pandemic. This study would also like to suggest, in the future, that health campaigns should be appropriately designed according to the uniqueness of socio-cultural background. Producing a comprehensive intervention is a very challenging process. This study believes that it requires a high level of mental process which can sometimes challenge existing theory. In common practice (Malaysia context), the health message designers do not often follow theories and normally concentrate on a few elements only. Health models used as thinking tools which originated from other countries that may not be 100% suitable for Malaysians and this required for further research on health models. The existing health campaign such as the design of cigarette box, healthy eating habit, exercise and diet and etc should be evaluated further. In respect to the Malaysian population, this study would like to suggest that threat and risk were the crucial elements in promoting health campaigns. Behaviour such as preventive and risk-taking behaviour towards health issue should be further evaluated. By solving these issues, this could help the government to plan more cost-effective health campaigns in the future.

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