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Health Beliefs of Wearing Facemasks for Influenza A/H1N1 Prevention: A Qualitative Investigation of Hong Kong Older Adults

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Health Beliefs of Wearing Facemasks for Influenza A/H1N1 Prevention: A Qualitative

Investigation of Hong Kong Older Adults

Abstract

1
2 Although vaccination is the first-line strategy controlling and preventing Influenza A/H1N1 for older
3 adults, personal protective measures, such as wearing facemasks, are also important preventive
4 behaviors to reduce the risk of becoming infected with Influenza A/H1N1 during a pandemic. In the
5 current study, we aimed to explore the belief-related psychological factors of wearing facemasks for
6 Influenza A/H1N1 prevention in a sample of Hong Kong older adults. Community-dwelling Chinese
7 adults ($N = 137$) aged between 65 and 80 years ($M_{age} = 75.10$; $SD_{age} = 6.49$) participated in semi-
8 structured interviews. Data were analyzed using theoretical thematic analysis and identified themes
9 were matched deductively within the belief-based processes of the Health Belief Model (HBM).
10 Results revealed beliefs that underpinned four general dimensions of facemask wearing: (1)
11 perceived susceptibility and seriousness of Influenza A/H1N1 pandemic (e.g., Influenza A/H1N1 as
12 contagious and lethal), (2) modifying factors (e.g., social responsibility to prevent influenza), (3)
13 cues to action (e.g., seeing others doing it), and (4) perceived benefits and barriers (e.g., protects
14 oneself and others, difficult to breathe). Future interventions can target these beliefs to improve
15 facemask wearing of older adults and, thus, curb preventable infection rates during an Influenza
16 A/H1N1 pandemic.

17

18 **Keywords:** elderly; facemask wearing; infectious diseases; psychosocial factors; Health Belief Model

Introduction

Older adults are vulnerable during periods of seasonal flu or Influenza A/H1N1 pandemic, with heightened risk of afflicting serious medical complications due to influenza.^{1,2} In Hong Kong, older adults aged 65 years and older were reported to be 14 times more likely to have influenza-related death than younger adults aged between 40 and 65 years.³ Over the past 70 years, influenza vaccines remain the first-line strategy for influenza control and prevention with the purpose of reducing morbidity and mortality as well as preventing pandemic influenza transmission.⁴ Yet, the efficacy of vaccines is substantially reduced in older adults, given their increased risk of complications associated with influenza.^{5,6} Social distancing policies (e.g., postponing and cancelling of mass gatherings) have also been shown to be effective but are costly and not easy to implement.⁷ Non-pharmaceutical personal protective measures such as respiratory etiquette, hand hygiene, and wearing facemasks, therefore, seem promising preventative behaviors and have been recommended to reduce the risk of transmission during a pandemic of Influenza A/H1N1.⁸

Facemask wearing has been recommended by many national and international health agencies (e.g., the Centers for Disease Control and Prevention (CDC)) for older adults, especially if unable to avoid crowded conditions during an Influenza A/H1N1 pandemic, as they are more susceptible to infection.⁹ However, research indicates facemask wearing to have lower effects in preventing infection compared to other preventive measures such as vaccination and hand hygiene.^{10,11} A possible reason for this reduced effect may be due to low compliance rates in adopting the strategy of

1 wearing facemasks for preventing pandemic influenza transmission. Currently, limited research has
2 been undertaken to explore the reasons why individuals might adopt or not adopt this preventive
3 measure.¹² For instance, it is not known why during the period between August 2009 to July 2010 the
4 perceived severity of influenza A/H1N1 virus infection by Hong Kong people decreased and use of
5 facemasks in the absence of influenza-like symptoms became less prevalent.¹³ Thus, it seems
6 important and timely to gain an in-depth understanding of Hong Kong older adults' experiences and
7 beliefs of wearing facemasks to prevent Influenza A/H1N1 during a pandemic.

8 A theory-driven investigation using well-established theories of social cognition may offer new
9 insights into the social psychological beliefs that influence older adults' decisions about facemask
10 wearing.^{14, 15} Among the belief-based psychosocial theories, the Health Belief Model (HBM)¹⁶ has
11 been widely used to explain health-protective behaviors. The model originally consisted of six main
12 components: (a) perceived seriousness refers to beliefs of severity of a disease that is often based on
13 prior knowledge (e.g., beliefs about influenza as a serious disease); (b) perceived susceptibility refers
14 to evaluations of the chances of getting a disease (e.g., beliefs about being at risk for contracting
15 influenza); (c) perceived benefits refer to evaluations of the value of adopting a new health behavior
16 (e.g., beliefs about wearing facemasks will decrease the risk of contracting influenza); (d) perceived
17 barriers refer to the obstacles of adopting a new health behavior (e.g., beliefs about the
18 inconvenience and lack of usefulness of wearing facemasks for influenza prevention); (e) modifying
19 factors refer to the personal characteristics (e.g., age, sex, personality, past experiences, education,

1 socio-economics, and knowledge) that can modify individuals' perceived susceptibility and severity
2 of influenza pandemic; and, (f) cues to action refer to the stimulus needed to trigger an individual
3 into action (e.g., a sign about wearing facemasks for influenza prevention).

4 In the context of the current study, perceived susceptibility, cues to action, and perceived
5 benefits have been shown to significantly predict individuals' facemask wearing during the global
6 outbreak of the severe acute respiratory syndrome (SARS) in 2003.¹⁷ While this previous research
7 has provided some insights into the motivations underpinning facemask wearing, understanding the
8 subjective reality of older adults toward this important health-protective behavior and using a
9 theoretical framework to gain this knowledge is currently limited. The purpose of this study was to
10 explore Hong Kong older adults' experiences and beliefs toward wearing facemasks to prevent
11 Influenza A/H1N1 during a pandemic, with a specific focus on the perceived social-cognitive
12 influences that might impact decisions about facemask wearing. The identified themes were then
13 analyzed with reference to the belief-based processes of the HBM.

14 **Methods**

15 **Participants**

16 A purposive sampling method¹⁸ was used to recruit retired community-dwelling Chinese older
17 adults living in Hong Kong aged between 65 and 80 years ($N = 137$; $M_{age} = 75.10$, $SD = 6.49$;
18 female = 125). Almost half of the participants reported being married ($n = 66$) or widowed ($n = 68$),
19 with a few reporting being single ($n = 4$) or divorced ($n = 5$). Many of the participants lived with

1 family members (n = 86), approximately one-third lived alone (n = 48), and three participants lived
2 in an aged care facility. The level of education varied among participants; below primary education
3 (n = 66), primary school education (n = 36), secondary school education (n = 32), and university
4 degree (n = 3).

5 **Design and Procedure**

6 Ethical approval was obtained from the Committee on the Use of Human & Animal Subjects in
7 Teaching and Research (HASC), Hong Kong Baptist University. Permission was also sought from
8 the Director of a large-scale District Elderly Community Centre in Hong Kong to recruit participants
9 from the facility. Participants were given HK\$20 as an incentive to participate.

10 Interviews were conducted by research assistants trained in qualitative methods and held in an
11 isolated room provided by the elderly center during the peak time of seasonal influenza (November
12 of 2014). Interviews lasted approximately 10 minutes (range 4 to 20 minutes), although it should be
13 noted that interviews were restricted to 20 minutes due to time control issues with interview rooms.
14 All interviews were audio-recorded and transcribed verbatim, and then imported in NVivo 8
15 qualitative analysis software to facilitate coding. One of the audio-recordings was lost due to a
16 technical problem.

17 A semi-structured interview guide was developed using open-ended questions to stimulate
18 discussion on older adults' experiences and beliefs toward facemask wearing. The interview guide
19 consisted of two main discussion sections: (1) knowledge about Influenza A/H1N1 and Influenza

1 A/H1N1 pandemic, and (2) experiences and beliefs about wearing facemasks to prevent Influenza
2 A/H1N1 during a pandemic. Questions were guided by the HBM framework (see Table 1 for the
3 interview questions). Throughout the interview, participants were invited to share any additional
4 thoughts about their experiences, and confirming summaries were used to validate participant
5 responses. Probing questions were also used to clarify responses and elicit further information.

6 **Data Analysis**

7 Theoretical thematic analysis was used to facilitate emergence of the themes.¹⁹ Author CZ
8 coded the data. To check for consistency in allocation of the codes to an individual data item, a code-
9 recode procedure was conducted for 10% of the data and 5% of the data were co-coded by an
10 experienced researcher. Any inconsistencies in coding assignment were resolved in discussions with
11 author KH. Themes were then identified based on the codes, capturing salient patterns in the data.
12 Using an iterative process, themes were reviewed with reference to the interview transcripts from
13 which they were drawn to ensure they were reflective of their original contexts. Themes were then
14 reviewed, refined, and named by authors CZ and KH. Where possible, themes were assigned names
15 from the data. Finally, identified themes were organized according to the categories of (a) perceived
16 susceptibility and seriousness, (b) modifying factors, (c) cues to action, and (d) perceived benefits
17 and barriers, based on the HBM.

18 **Results**

19 Results were consistent across the individual interviews and, thus, are organized around four

1 main components of HBM. Each theme is presented with explanation, and the subthemes are
2 supported with quotes from older adults (see Table 2). For each quote, the code of participant, along
3 with their sex (F = female; M = male) and age are presented.

4 **Perceived susceptibility and seriousness of Influenza A/H1N1 pandemic**

5 Perceptions of susceptibility of contracting the Influenza A/H1N1 varied among older adults.

6 Although the majority of older adults mentioned that they are *afraid of being infected*, a few stated
7 that they are *not afraid of being infected*. Perceptions of seriousness of Influenza A/H1N1 also
8 varied, with some older adults viewing *Influenza A/H1N1 as contagious and lethal* while others
9 expressed *misunderstanding and lack of knowledge* of the seriousness of Influenza A/H1N1,
10 describing the Influenza A/H1N1 pandemic as a passing phase that only occurs with the change in
11 weather and accompanying season.

12 **Modifying factors of wearing facemasks for Influenza A/H1N1 prevention**

13 Age-related deficits emerged from the data as a potential modifying factor that could influence
14 older adults' decision to wear facemasks during an Influenza A/H1N1 pandemic. For example,
15 perceived increases in poor memory suggested to be related to the ageing process led older adults to
16 discuss *forgetting to wear facemasks* as an influence for influenza prevention. The *social*
17 *responsibility to prevent influenza* by wearing facemasks was also recognized by older adults, and it
18 was believed that people should take the initiative to engage in such practices for the benefit of
19 others. In contrast, some older adults believed that *it's a personal choice* to wear a facemask and, as

1 such, the decision to wear or not wear was considered to be more about the individual than the
2 collective. *Stereotyped images of individuals who wear or not wear facemasks* was also discussed.
3 Many older adults believed that wearing facemasks was only for the sick and if not suffering illness
4 then there was no need to wear a facemask. Some older adults further described that wearing
5 facemasks is “weird” and not a typical behavior that is done. In addition, many older adults
6 supported the idea of *forcing facemask wearing*, especially in high risk situations such as hospitals
7 and elderly centers where vulnerability for contagion is higher.

8 **Cues to action on wearing facemasks for Influenza A/H1N1 prevention**

9 Cues that facilitate action also emerged from the data as potentially influencing older adults’
10 facemask wearing behaviors for Influenza A/H1N1 prevention. There was a belief held that different
11 places of interest have varying levels of risk for being infected with Influenza A/H1N1. Accordingly,
12 older adults discussed that the decision to wear facemasks can be based on the places they may go
13 and visit, highlighted in the theme *places to go*. For example, wearing facemasks in crowded places
14 and places of vulnerability such as hospitals was believed to be more likely than wearing facemasks
15 in less crowded places. Situational cues like *noticing signs and symptoms in others*, such as seeing
16 people coughing or sneezing, was also believed to trigger a response in older adults to wear
17 facemasks. Older adults further discussed that *seeing others doing it* (i.e., other people wearing
18 facemasks) might trigger the action of wearing a facemask. *Availability of facemasks* was another
19 cue of wearing facemasks, which was further facilitated by the availability of free-to-use facemasks.

1 **Perceived benefits and barriers of wearing facemasks for Influenza A/H1N1 prevention**

2 A range of benefits and barriers for wearing facemask to prevent Influenza A/H1N1 during a
3 pandemic were discussed. *Protects oneself and others* and *provides a sense of safety* were the most
4 commonly mentioned benefits. Barriers to facemask wearing were also identified, with the most
5 frequently mentioned barriers being *difficult to breathe* when wearing facemasks, the *inconvenience*
6 of wearing facemasks, and the image of *not looking good* when wearing facemasks.

7 **Discussion**

8 Hong Kong adults aged 65 years and older are at higher risk of influenza-related death than
9 younger adults.³ In addition to the first-line pharmaceutical measure of influenza vaccination and
10 non-pharmaceutical policy level strategy of social distancing, wearing facemasks can be used as one
11 of the personal protective measures (e.g., respiratory etiquette and hand hygiene) to reduce Influenza
12 A/H1N1 transmission during a pandemic. In order to inform the development of effective influenza
13 prevention interventions to reduce morbidity and mortality caused by pandemic influenza, a bottom-
14 up approach to gain a rich understanding of older adults' experiences and beliefs of wearing
15 facemasks for pandemic influenza prevention is needed. In the current study, we explored the
16 perceived social psychological beliefs that impact older adults' decisions toward wearing facemasks
17 to prevent Influenza A/H1N1 using the HBM as a theoretical guide.

18 Mixed beliefs were held about the susceptibility and seriousness of Influenza A/H1N1, with
19 some older adults believing it to be contagious and lethal and afraid of being infected while others

1 were not concerned about transmission. This ambivalence among older adults (i.e., holding both
2 positive and negative beliefs toward facemask wearing) is consistent with other research
3 investigating healthcare professionals' attitudes toward influenza preventive behaviors.²⁰ Individuals
4 might rely more on personal experience and anecdotal evidence to inform their decisions than on
5 knowledge based on scientific evidence during situations with high risk perception.²¹ This
6 ambivalence in beliefs could reflect differing levels in knowledge or health literacy (e.g.,
7 misunderstanding about transmission, underestimating the seriousness) about Influenza A/H1N1.²²
8 Accordingly, the importance of increasing knowledge about Influenza A/H1N1 and demonstrating
9 and/or providing instructions on the correct way to wear facemasks has been acknowledged in the
10 literature.^{23, 24}

11 Planning effective health risk communication about pandemic influenza for older adults is
12 important, given that communication strategies are shown to be effective when targeting
13 misconceptions.²⁵ This is because older adults held stereotyped beliefs about facemask use that those
14 who wear them are sick and those who don't are well. According to several social psychological
15 theories of human behavior, an individuals' perception of the normative behavior of others is
16 hypothesized to have a key influence over decisions to act.²⁶ Providing positive images of healthy
17 individuals wearing facemasks and information of others' approval may help to normalize this
18 preventive health behavior and, thus, create a new narrative and sociocultural meanings around
19 wearing facemasks so that it becomes an expected behavior during an Influenza A/H1N1 pandemic.²⁷

1 Advocating a social responsibility of wearing facemasks to not infect others was considered
2 important. This suggests that older adults in deciding to wear facemasks may think about the moral
3 correctness of their actions and possible repercussions of potential non-action on others. Previous
4 research has shown the importance of moral correctness (or incorrectness) in influencing individuals'
5 decisions.²⁸ Pleading to people's moral obligation toward others might therefore help to cultivate a
6 culture in favor of wearing facemasks. For example, facemask wearing in Japan has become a
7 socially embedded routine practice against health threats of disease outbreaks such as an influenza
8 pandemic.²⁹ In contrast, in Hong Kong, the importance of wearing facemasks has been inconsistent,
9 changing from positive to negative in the post severe acute respiratory syndrome (SARS) era and
10 altered people's perception of others using facemasks.²⁷ A multi-faceted, multi-sector approach may
11 therefore be needed to change the sociocultural norm of wearing facemasks in Hong Kong.

12 Current findings also indicate that the adoption of government level top-down regulation
13 requiring older adults to wear facemasks may be an effective measure in the pandemic of Influenza
14 A/H1N1. This is in line with a recent call that mandatory influenza vaccination as part of
15 employment requirements is a feasible, effective, and ethical measure to increase the vaccination rate
16 of nurses.³⁰ Given that mandatory directives by public health authorities often conflict with the
17 protection of civil rights and principles of personal choice and autonomy, highlighted in the belief
18 that it's a personal choice to wear facemasks in the current study, the cooperation of people in
19 recognizing the importance of these actions is needed to reduce the incidence of influenza.³¹ As such,

1 the development of autonomy-supportive environments in elderly centers to provide counselling on
2 the importance of wearing facemasks may be an important avenue for the promotion of influenza
3 preventive behaviors during a pandemic.^{14,15}

4 Although discussed as an age-related factor in this context, cognitive impairment is not simply
5 an aging issue³² and forgetting to wear masks is an issue in general. Therefore, it is possible that
6 older adults do not to act on intentions to wear facemasks as a result of forgetting, distractions, or
7 competing demands. To overcome this limitation, making plans and establishing cues for facemask
8 wearing may help to create new contingencies between situational cues and behavioral responses
9 (e.g., If there is an influenza pandemic, then each time I leave the house I will wear a facemask).
10 Research has shown that making plans can promote behavioral action³³, and that environmental cues
11 such as having vaccinations offered at the workplace can contribute to compliance with influenza
12 preventive behaviors.³⁴ Environmental restructuring could, therefore, be a useful strategy to employ
13 to ensure availability of free-to-use facemasks. For example, facemask dispensers installed at popular
14 public places where elderly people congregate, such as elderly centres, could act as a cue to action, a
15 behaviour change method often used to help individuals action their intentions.

16 Perceived barriers and benefits of wearing facemasks were also identified as key factors
17 influencing older adults' decision of wearing facemasks to prevent Influenza A/H1N1 during a
18 pandemic. To overcome barriers, building self-efficacy for wearing facemasks could be developed,
19 especially when situations or circumstances make it more difficult to do so.³³ This is important given

1 the main barriers to facemask wearing was difficulty breathing, particularly during low-risk
2 periods.¹³ Therefore, using techniques know to build self-efficacy such as mastery experience,
3 various learning, and behavioral feedback and modelling might be useful in this context.³⁵ Further,
4 highlighting the benefits of facemask wearing (e.g., protection and safety) may be important to
5 consider. Greater understanding of the benefits of wearing facemasks, through persuasive
6 communication (e.g., messages that weigh up the costs in favor of the benefits), may help to instill
7 positive attitudes toward wearing facemasks and, thus, greater motivation to action the health-
8 preventive behavior to ensure protection of self and others.^{17,36}

9 The current research had many strengths including collecting views from a large community
10 sample and using a comprehensive qualitative research design based on psychological theory that
11 provided an in-depth understanding of the belief-based processes guiding older adults' decisions to
12 wear facemasks to prevent Influenza A/H1N1 during a pandemic. Limitations of the research should
13 also be noted. The gender imbalance in that more women participated limits generalizability of
14 current findings to men. Further, the limited interview time due to facility pressures may have
15 restricted more descriptive views from participants being presented. In addition, the current study
16 focused on older adults' beliefs and experiences of wearing facemasks to prevent Influenza A/H1N1
17 during a pandemic without further exploring vaccination and other personal protective behaviors
18 such as respiratory etiquette, hand hygiene, and voluntary home isolation of ill persons.⁹ Exploring
19 beliefs for these other preventive behaviors is important and may provide a more complete

1 understanding of older adults' preventive actions during an Influenza A/H1N1 pandemic that can
2 inform future interventions.³⁷

3 Current findings showed a range of beliefs that underpin Hong Kong older adults' decisions to
4 wear facemasks to prevent Influenza A/H1N1 during a pandemic. Influenza A/H1N1 kills yet is
5 preventable; thus, greater understanding of the beliefs guiding preventive action is needed. Current
6 findings fill this knowledge gap and can be used to inform future Influenza A/H1N1 prevention
7 interventions, focusing on the promotion of non-pharmaceutical personal protective measures that
8 include the use of facemasks.

9

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13

14 **Declaration of Conflicting Interests**

15 The author(s) declare no potential conflicts of interest with respect to the research, authorship, and/or
16 publication of this article.

17

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Table 1
Sample Questions of the Interview Guide

Aspects	Sample questions
Knowledge of Influenza A/H1N1 and Influenza A/H1N1 pandemic	
1. Knowledge of Influenza A/H1N1	“Have you heard of Influenza A/H1N1?”
2. Knowledge of Influenza A/H1N1 pandemic	“Could you share with me about what you have known and experienced about Influenza A/H1N1 pandemic?”
3. Knowledge of how to prevent Influenza A/H1N1 during the pandemic	“Do you know how to prevent Influenza A/H1N1 during a pandemic?”
Experiences and Beliefs about Wearing Facemasks to Prevent Influenza A/H1N1	
1. Perceived susceptibility and seriousness of Influenza A/H1N1 pandemic	“How do you perceive the risk of Influenza A/H1N1 pandemic?”
2. Reasons of wearing a facemask to prevent Influenza A/H1N1 during a pandemic	“Could you share with me the reasons why you want to or do not want to wear a facemask to prevent Influenza A/H1N1 during a pandemic?”
3. Competence on preventing being infected with Influenza A/H1N1 during a pandemic	“Do you feel yourself competent enough to prevent being infected with Influenza A/H1N1 during a pandemic?”
4. Benefits of wearing facemasks to prevent Influenza A/H1N1 during a pandemic	“What make you feel that wearing a facemask for Influenza A/H1N1 prevention during a pandemic is important to you and others?”
5. Barriers of not wearing facemasks to prevent Influenza A/H1N1 during a pandemic	“What would you feel if you refuse to or cannot wear a facemask for the prevention of Influenza A/H1N1 during a pandemic? Why? Do you feel any pressure?”

Table 2.

Themes, Sub-Themes, and Selected Quotes Supporting the Themes

Main themes and Sub-themes	Examples of quotations from participants
1. Perceived susceptibility and seriousness of Influenza	
A/H1N1 pandemic	
Afraid vs. not afraid of being infected	<p>“There is no pressure for me, I am not afraid. So, I don't wear facemasks.” (ST091, F, 80).</p> <p>“I am afraid that I will be infected, and many people are infected during the pandemic. Because it will be easily infected, it is necessary to wear a facemask to protect myself.” (ST105, F, 65). “You can't see the germs. Therefore, you don't know whether you will be infected by other people. You should learn to protect yourself.” (ST061, M, 64).</p>
Influenza A/H1N1 as contagious and lethal	<p>“It [Influenza A/H1N1] is virus, can be lethal.” (ST044, F, 68). “It [Influenza A/H1N1] can be spread among humans, avian influenza and swine influenza are one types of Influenza A.” (ST060, F, 69). “Because I am afraid of infecting others and being infected by others, I choose to wear facemask. I am afraid of being infected by germs and I don't want to be sick.” (ST031, F, 68).</p>
Misunderstanding and lack of knowledge	<p>“Influenza A/H1N1 is just seasonal flu” (ST075, F, 66). “Influenza A/H1N1 is just a head cold” (ST026, F, 84). “The pandemic is spring and autumn and the bacteria is breeding in spring that leads to influenza. It is the wind blows in autumn that cause people sick.” (ST105, F, 65). “I believe that they [older adults] are short of knowledge on this side [Influenza prevention].” (ST028, F, 68).</p>
2. Modifying factors of facemask wearing for Influenza	
A/H1N1 prevention	
Forgetting to wear facemasks	<p>“But, we, older adults have poor memory, can forget some ways of influenza prevention.” (ST024, F, 85)</p>
Social responsibility to prevent influenza	<p>“Yes, the most important thing is to protect yourself and then to protect the whole</p>

It's a personal choice

community. The basic rule is that when you get sick, you will not infect others. So, there will be no infection in the community. And, it will become serious for the disease to spread from person to person" (ST032, F, 68). "I think people should wear facemasks. During the pandemic, individual should spontaneously and automatically, rather than to wear facemasks by requirement." (ST119, F, 75).

"The choice is personal. Individuals wear facemasks when they like, wear facemasks when they want to protect themselves. If they don't feel sick, there is no need for them to wear facemasks." (ST089, F, 75)

Stereotyped images of individuals who wear or not wear facemasks

"People not wear facemasks because they are not sick." (ST019, F, 84; ST020, F, 65; ST022, F, 79). "I believe that the responsibility is that people must wear facemasks when sick." (ST032, F, 68). "[Wearing facemasks] makes people feel weird." (ST061, M, 64).

Forcing facemask wearing

"It should be forced, for example, if you go to hospitals, you are required to wear facemasks. Letting people wear facemasks can prevention the transmission of the flu." (ST109, F, 69). "In the elderly center, I will wear facemasks if I was asked by others." (ST091, F, 80).

3. Cues to action on facemask wearing for Influenza A/H1N1 prevention

Places to go

"I decide whether to wear facemasks based on the places to go. I will not wear facemasks in open areas. I will wear facemasks in closed areas where there are many people. I am worried about being infected." (ST032, F, 68). "For example, I will definitely wear facemasks when I do a return visit to the hospital." (ST024, F, 85).

Noticing signs and symptoms in others

"Yes, I will avoid to get close to them when other people are sneezing or coughing." (ST121, F, 85). "In public areas, I will not get close to those people who are wearing facemasks" (ST120, F, 69).

Seeing others doing it

“I will wear facemasks if I see other people are wearing them.” (ST002, F, 84). “Of course, there is pressure. This is because if everyone is wearing facemasks and you don't, all other people's attention will focus on you” (ST024, F, 85).

Availability of facemasks

“I will only wear facemasks when the facemasks can be easily got.” (ST074, F, 81). “Yes, I will wear facemasks when my children buy them. And, when many facemasks are available.” (ST162, F, 85)

4. Perceived benefits and barriers of facemask wearing for Influenza A/H1N1 prevention

Protects oneself and others

“This is mainly for protecting myself. Since others don't wear facemasks, I have to adopt some measures to protect myself.” (ST102, F, 69)

“The most important thing is wearing facemasks can prevent the droplets spread to infect other people when cough” (ST001, F, 80)

Provides a sense of safety

“Wearing facemasks will reduce the chances of being infected, therefore psychologically you will feel safe. Wearing facemasks represent you will not be affected, you will feel comfort inside.” (ST131, F, 80). “If you are infected by others, you will infect family members when go back to home. It will transmit, therefore I will try my best to avoid this happens.” (ST029, M, 72).

Difficult to breathe

“I believe that everyone doesn't like wear facemasks because it is very difficult to breathe.” (ST024, F, 85). “I know it is very important, but I believe that it feels very uncomfortable wearing facemasks, so I don't wear facemasks although I know that it is better to wear them” (ST085, F, 71).

Inconvenience

“I believe that some people will think it is troublesome.” (ST027, F, 81).

Not looking good

“Wearing facemasks doesn't look good” (ST081, M, 71; ST097, F, 67).