



Factors Influencing the Decision of Nakhon Pathom High School Students to Receive COVID-19 Vaccination

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Abstract

The objectives of this research were to 1) to study the factors affecting the decision on receiving the COVID-19 vaccination, 2) to compare the decision on receiving the COVID-19 vaccination classified by personal factors and 3) to study the relationship of factors affecting the decision on receiving the COVID-19 vaccination among students in a school in Nakhon Pathom Province. The samples used in the research were 120 secondary students in a school in Nakhon Pathom Province, aged 18 years and over. The data were collected from questionnaires that had a reliability of 0.91 and were analyzed by using frequency, percentage, mean, standard deviation, t-test, one-way analysis of variance, chi-square test and Pearson product-moment correlation coefficient. The results showed that 1) Factors affecting vaccine service decisions include disease prevention and transmission behavior, number of family members and behavioral factors for preventing and transmitting COVID-19. 2) Students with more than five family members had a higher level of decision-making for vaccine services than those with a few family members. And 3) Personal factors in the number of family members and behavioral factors preventing and transmitting COVID-19 significantly affects the decision to receive COVID-19 vaccine with a statistically significant at .05.

Introduction

Coronavirus disease (COVID-19) is an emerging disease in a family of viruses that cause illnesses ranging from the cold to more serious disease, which is an emerging species that has never been found before in humans. This cause respiratory illness in people and can spread the infection from person to person. The virus was first found in an outbreak in Wuhan, Hubei Province, China, at the end of 2019. Currently, the number of patients around the world with

the coronavirus disease (COVID-19) has been increasing and the outbreaks of COVID-19 have been very high on every continent. The origin of COVID-19 (stand for Coronavirus Disease 2019) is 2019-nCoV, a new coronavirus strain, found in more than 200 animals and humans, but in the past, humans have known the original 6 strains of the coronavirus; four of the strains cause several endemics such as cold and respiratory diseases and two new emerging strains cause acute respiratory diseases: SARS (Severe Acute Respiratory Syndrome)

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and MERS (Middle East Respiratory Syndrome Coronavirus) (Emergency Operation Center, 2020). Moreover, since the severe pandemic of the COVID-19 in late 2019, the epidemic situation has affected Thai society in all dimensions, including economic, social, health. COVID-19 has caused numerous problems in public health, economy, mental health and society which requires cooperation from government agencies, private organizations and population in prevention and treatment of affected people in accordance with comprehensive problems and needs to alleviate the hardship and suffering from COVID-19 situation (King Chulalongkorn Memorial Hospital, Thai Red Cross Society, 2020).

The government has issued various measures cooperated by all sectors which results in the effective COVID-19 management and spread limitation. The main measures include limiting travel, closing locations with a large number of people, social distancing, focus on the personal practice, eating spaces, wearing cloth masks or surgical masks, washing hands frequently with soap or hand sanitizer, keeping a distance of at least 1-2 meters from others. From cooperation and support of all sectors, campaigns have been created and employed jointly for all people to understand and be aware of the correct behavior, which is an important factor to stop the spread of the virus effectively, until the government announced prevention measure relaxation. This caused a decrease in the number of people who keep a distance from others and various shops have begun to be re-opened under the specified conditions. In addition, people have started to have more social activities. However, the government still urges people to strictly follow the recommendations of the Ministry of Public Health due to the continuation of prevention measure implemented in other countries and Thailand to be careful and prevent a recurrence of the outbreak and allow Thai people to behave properly.

Information of the World Health Organization and the Department of Disease Control, The Ministry of Public Health, on December 18, 2020 showed that more than 73 million people worldwide had been infected with COVID-19 and more than 1 million people died from the COVID-19 infection (World Health Organization, 2020). In Thailand, more than 4,246 people have been infected and 60 people died from COVID-19 (Emergency Operation Center, 2020) although the vast majority of people with the disease did not have severe symptoms. Only about 20 percent had the illness and the mortality rate is lower than 1 percent; nevertheless, because it is a new disease and there is no immunity in the general

public, this results in a higher increase in the number of infected people and many deaths. It has caused the Public Health System to have problems to support COVID-19 patients. Various preventive measures currently used: wearing masks, hand washing, social distancing and quarantine have also serious impacts on way of life and the economic system and the spread of disease cannot be prevented completely. Many countries around the world including Thailand invented and developed the COVID-19 vaccine to help prevent COVID-19 infection and transmission and reduce the severity of infection. In addition, Thailand has established several prevention measures and one of the main measures is COVID-19 vaccination among target populations. Therefore, it is necessary to provide adequate vaccines to the Thai population. The COVID-19 vaccine adoption process in Thailand consists of selection process, vaccine procurement, academic information consideration, targeting, vaccine management and service provision processes. Vaccination against COVID-19 can reduce the epidemic and the severity of illness and deaths (Department of Disease Control, 2021) because the situation of the COVID-19 epidemic is considered a world emergency. There are over a hundred million people infected with the COVID-19 worldwide and more than two million deaths.

According to COVID-19 studies, an important factor in transmission is relations between family, friends and acquaintances for example, eating together, being close to one another, speaking without a mask. The widespread risk of infection is living in the same dormitory, walking around the same job and eating together. Despite isolating infected individuals in the system, dense reunification is at risk of progressively finding infected individuals.

From the aforementioned reasons, the researcher studied the factors affecting the decision on receiving the COVID-19 vaccination. The research collected a sample of 18-year-olds from a high school in Nakhon Pathom Province. This is because the province has a high rate of COVID-19 outbreaks, which will influence sample decisions. Thus, the results of the data analysis are clear and consistent with the stated objectives. The results of this research will be further used as information in the epidemic prevention planning and preparation.

Objectives

1. To study the factors affecting the decision on receiving the COVID-19 vaccination among students in

a school in Nakhon Pathom Province.

2. To compare the decision on receiving the COVID-19 vaccination among students in a school in Nakhon Pathom Province classified by personal factors.

3. To study the relationship of the factors affecting the decision on receiving the COVID-19 vaccination among students in a school in Nakhon Pathom Province.

Conceptual framework

To study the factors affecting the decision on receiving the COVID-19 vaccination. This study was conducted using variables from the Gender and Family Members section and anti-transmission behaviors that are consistent with the decision to receive the COVID-19 vaccine in a certain manner. This involved analyzing the relevant issues between the initial variables and the variables in terms of the decision-making process for receiving the COVID-19 vaccine. The researcher set the conceptual framework as shown in Figure 1

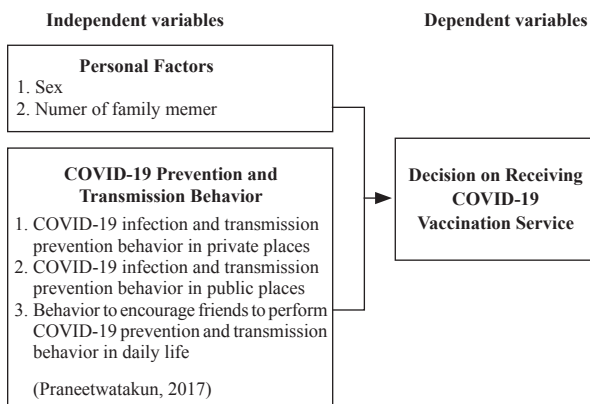


Figure 1 Conceptual framework

Research methodology

The research of the factors affecting the decision on receiving the COVID-19 vaccination was a quantitative research with the following research methodology. The process for collecting information was endorsed by the Institutional Review Board.

1. Sample

The sample used for the research was 120 upper-secondary students in a school in Nakhon Pathom Province, Semester 2, aged 18 years and over, which was obtained from purposive sampling.

2. Content scope

The researcher studied the concepts, theories

and research papers, defined the relevant variables namely the demographic variables: the personal information of students (i.e., gender and number of family members) and COVID-19 prevention and transmission behavior factors affecting decision on receiving COVID-19 vaccination. The sample was randomly assigned from all the school students to a sample of 720. For the sample studied, it was aimed at only secondary school students aged 18 and over.

3. Research instrument

Questionnaires of factors affecting the decision on receiving the COVID-19 vaccination among students in a school in Nakhon Pathom Province were characterized by the rating scale and the confidence of 0.91. The questionnaires used were divided into 3 sections. The first section contains preliminary information on respondents' personal information. Part 2 consists of COVID-19 prevention behaviours and Part 3 contains factors for deciding to get vaccinated as follows:

Part 1: Personal information questionnaire

Part 2: COVID-19 prevention and transmission behavior questionnaire

Part 3: The decision on receiving the COVID-19 vaccination questionnaire

4. Method

This research was conducted by survey research design. Data were collected from a sample of 120 upper-secondary students in a school in Nakhon Pathom Province, students were aged 18 years and over and the results obtained from data collection were analyzed. This study was a cross-sectional study. The process in this study was the use of Pearson correlation coefficient that characterized data based on appropriate and normally distributed tests.

5. Data analysis

5.1 The personal factors were analyzed using descriptive statistics such as frequency and percentage.

5.2 The factor level affecting the decision on receiving the COVID-19 vaccination s and the decision level on receiving the COVID-19 vaccination were analyzed using mean and standard deviation.

5.3 The statistics used to test the hypothesis to compare the decision on receiving the COVID-19 vaccination classified by gender were analyzed using t-test for independent variable and the decision on receiving the COVID-19 vaccination service classified by number of family members was compared using one-way ANOVA. When differences were found, the

mean differences were compared by the Scheffe's Method.

5.4 Statistics used to test the relationship between variables were analyzed using chi-square test and the Pearson product-moment correlation coefficient.

Results

To study the factors affecting the decision on receiving the COVID-19 vaccination among students in a school in Nakhon Pathom Province, the data were collected from 120 upper secondary students in a school in Nakhon Pathom Province. Questionnaires were distributed by the researcher. The results from the questionnaire distribution were as follows.

1. The results of the general data analysis of the respondents showed that most of the students were 86 males, representing 71.67 percent and had 4-5 family members were 64 people, representing 53.33 percent.

2. The levels of factors affecting the decision on receiving the COVID-19 vaccination among students are shown in Table 1. This analysis used the theoretical interpretation principles related to the inspection of various tools to receive the results as shown in the Table 1.

Table 1 Mean and standard deviation of opinions toward the factors affecting the decision on receiving the COVID-19 vaccination among students in a school in Nakhon Pathom Province.

COVID-19 Prevention and Transmission Behavior	Action Level		
	\bar{X}	SD.	Interpretation
1. Covid-19 infection and transmission prevention behavior in private places	4.35	0.46	Highest
2. Covid-19 infection and transmission prevention behavior in public places	3.90	0.33	High
3. Supportive behavior to encourage friends to perform COVID-19 prevention and transmission behavior in daily life	4.18	0.44	High

According to Table 1, it was found that the students had the overall COVID-19 prevention and transmission behavior at a high level ($M = 4.14$, $SD = 0.35$). Considering each aspect, it was found that the sample had the COVID-19 infection and transmission prevention behavior in private places at the highest level with the highest mean ($M = 4.35$, $SD = 0.46$), followed by the supportive behavior to encourage friends to perform the COVID-19 infection and transmission prevention behavior in daily life at a high level ($M = 4.18$, $SD = 0.44$) and the COVID-19 infection and transmission prevention behavior in public places at a high level ($M = 3.90$, $SD = 0.33$), respectively.

To compare the decision on receiving the COVID-19 vaccination among students in a school in Nakhon Pathom Province classified by personal factors results are shown in Table 2-3.

Table 2 The comparison of the decision on receiving the COVID-19 vaccination classified by gender

Sex	N	Mean	S.D.	t	Sig.
Male	86	4.23	0.42	1.597	.207
Female	34	3.89	0.33		

According to Table 2, it was found that there was no difference in the decision on receiving the COVID-19 vaccination of the students with different genders.

Table 3 The comparison of the decision on receiving the COVID-19 vaccination classified by number of family members

Decision on Receiving the COVID-19 Vaccination Service	Variance	SS	df	MS	F	Sig.
Intergroup		942	2	.471	3.561	.029*
Intragroup		50.529	117	.132		
Total		51.471	119			

* $p < .05$

According to Table 3, it was found that the students with different numbers of family members had an effect on the decision to receive the COVID-19 vaccination with the statistically significant difference level of .05.

To study the relationship of the factors affecting the decision on receiving the COVID-19 vaccination among students in a school in Nakhon Pathom Province are shown in Table 4-5.

Table 4 Results of the personal factors affecting the decision on receiving the COVID-19 vaccination

Personal Factors	Decision on Receiving the COVID - 19 Vaccination Service	
Sex	X^2 Sig.	13.999 .301
Number of family members	X^2 Sig.	57.864 .015*

*Statistical significance level of .05.

According to Table 4, it was found that the student's number of family members affected the decision on receiving the COVID-19 vaccination service.

According to Table 5, it was found that the COVID-19 prevention and transmission behavior factor affecting the decision on receiving the COVID-19 vaccination service had a positively moderate level with the statistical significance level of .05 and COVID-19

Table 5 Results of COVID-19 prevention and transmission behavior affecting the decision on receiving the COVID-19 vaccination service (both overall and each aspect)

COVID-19 Prevention and Transmission Behavior	Decision on Receiving the COVID-19 Vaccination service		
	r	Direction of Relationship	Level of Relationship
1. COVID -19 infection and transmission prevention behavior in private places	0.432*	Positive	Moderate
2. COVID-19 infection and transmission prevention behavior in public places	0.775*	Positive	High
3. Supportive behavior to encourage friends to perform COVID-19 prevention and transmission behavior in daily life	0.428*	Positive	Moderate
Total	0.510*	Positive	Moderate

* Statistical significant level of .05.

infection prevention and transmission behavior in public places affected the decision on receiving the COVID-19 vaccination at the highest level.

Discussion

Studies have shown that the findings are consistent with relevant theories, which makes the findings clear and consistent with the principles of research as follow.

1. From the analysis of the COVID-19 prevention and transmission behavior, it was found that the sample had the overall COVID-19 prevention and transmission behavior at a high level. Considering each aspect, it was found that the sample had the COVID-19 infection and transmission prevention behavior in the private places at the highest level, followed by the supportive behavior to encourage friends to have COVID-19 infection and transmission prevention behavior in daily life at a high level and the COVID-19 infection and transmission prevention behavior in the public places at a high level. This may be because from the situation report, there is an increase in the number of people infected with the COVID-19 and COVID-19 pandemic has rapidly occurred. In addition, it is reported that the deaths from COVID-19 infection are 6.99 percent (Emergency Operation Center, 2020). Therefore, the researcher was interested in researching information to prevent people from COVID-19 infection and transmission. The results show that COVID-19 prevention and transmission behavior at a high level and strict setting and implementation of various COVID-19 prevention measures issued by the government and related agencies to prevent the COVID-19 transmission. This is consistent

with the research conducted by Thiamprasert (2014) that studied the infection prevention and control behavior during the operation of officers in healthcare facilities, Muang District, Chiang Rai Province. The results showed that the healthcare officers had infection prevention and control behavior at a good level during the operation, both in the area of infection prevention and transmission and environmental control management.

2. The respondents had the decision on receiving the COVID-19 vaccination at an overall high level because of an increase in COVID-19 infections. Thus, COVID-19 vaccination will help to prevent people from COVID-19 infection and transmission and information on the COVID-19 prevention is always being searched based on a decision-making process that must be addressed before the evaluation and decision of options. This is consistent with Krongyuth et al. (2017) studying the factors associated with influenza vaccination decisions among the elderly with chronic diseases, Warin Chamrap District, Ubon Ratchathani Province and the results were found that the elderly had the decision on receiving influenza vaccination at a high level. In addition, this is consistent with the Thanavikarnkul et al. (2015) studying the acceptance of seasonal influenza vaccination among medical personnel in a tertiary hospital in Bangkok and the results found that most of medical personnel accepted the influenza vaccination.

3. Personal factors: the number of family members and the COVID-19 prevention and transmission behavior statistically significantly affected the decision on receiving the COVID-19 vaccination at a .05 level. This may be the result of people having awareness of the dangers of COVID-19 spreading and is highly infectious and there is a high mortality rate from COVID-19 infection. Also, if there are people who are infected in the family, their family will be a high-risk contact.

Suggestions

Suggestions obtained from this research

1. Relevant agencies should have public relations to build knowledge and understanding about COVID-19 and COVID-19 infection and transmission prevention methods using various methods and media.

2. Relevant agencies should provide adequate vaccines to meet the needs in order to prevent the COVID-19 transmission.

Suggestions for the next research

1. There should be studies of the cognitive factors and participation in the COVID-19 infection and

transmission prevention, which impacts the decision on receiving the COVID-19 vaccination.

2. The impact of COVID-19 vaccination service should be investigated.

Therefore, promoting vaccination decisions of young people must focus on behaviors in preventing the spread of the virus and on the number of family members to encourage young people to receive the vaccine.

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