A STUDY OF FACTORS THAT INFLUENCE PEOPLE ACCEPT OR REFUSE COVID-19 VACCINATION
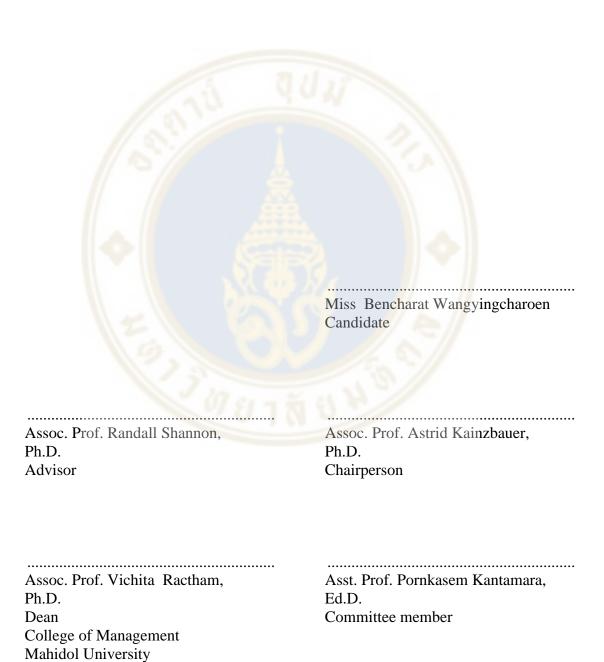
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A STUDY OF FACTORS THAT INFLUENCE PEOPLE ACCEPT OR REFUSE COVID-19 VACCINATION

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ABSTRACT

In the pandemic situation of the SARS-CoV-2 virus or COVID-19 that still makes an uncertain situation to the world even though the COVID-19 vaccines had been invented and developed in this time. However, the process for stopping the pandemic situation is still so far because of the limited knowledge about COVID-19. The vaccination is one of the invention that we expect to incur herd immunity for stopping the pandemic so, this research wants to find the factors that influence people decide to COVID-19 vaccination or not align to the Health Belief Model for helping the accomplice more understanding about behavior and create effective communication for increase number of people who want to get vaccine.

This research study uses a qualitative method by interviewing 10 respondents divided in 2 groups: acceptance and refusal to get COVID-19 vaccine. The questionnaires created align to the Health Belief Model. The result of the study quite aligns with the theory that people who accept the vaccination tend to perceive susceptibility and benefits while people who refuse it tend to perceive barriers. This study found other factors that affect to get the COVID-19 vaccines were "want to go abroad" and "intimate people got vaccine".

KEY WORDS: COVID-19 vaccine/ the Health Belief Model

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CHAPTER I

INTRODUCTION

1.1 Introduction

From the pandemic situation of the SARS-CoV-2 virus or COVID-19, outbreak in China since December 2019 and spread dramatically and widely that had affected on the world harshly in many aspects such as mental health, economic and student status. A systematic review found relative high rate of anxiety, depression, post-traumatic stress disorder, psychological distress and stress during COVID-19 outbreak (Xiong et al., 2020). The COVID-19 hit economic by quarantine policy affected to travel business, the factory was closed, the restaurants sold only take home or delivery, the entertainment industries were repealed or postponed. All factors had an effect on GDP growth rate in 2020 of Thailand which subsided so much compared to the previous year which was -7.15% (www.statista.com). In part of the student status, COVID-19 outbreak changed everything thoroughly. Some students had to learn via online with electronic materials such as computers or iPads that make troubles to the teachers, students and parents for supporting online-learning till the end, not mentioned to the students who did not have computers or internet.

Before COVID-19 era, the world has faced many outbreaks since 1346-53, the plague "Black Death" spread and killed half of Europe's population. In 2002-2003, acute respiratory syndrome (SARS) attacked global pandemic in 37 countries with the enormously cost over 40 billion US dollars for halted it. In 2009, the world was confronted with H1N1 pandemic (Ross et al., 2014) and in 2014 with Ebola which was one of the deadliest and spread rapidly through contacts with an infected person (Sareen et al., 2018). From Flahault et al., 2006, they suggested the model of intervention for containing a global influenza pandemic that had quite the same pattern for infection with COVID-19 by isolating infectious patients, reduction of air traffic, therapeutic antivirus treatment, prophylactic antiviral treatment and vaccination. Bartsch et al., 2020 developed a model for prediction of the spread of COVID-19 and vaccination in the

U.S. They found inverse variation between efficacy of vaccine and percent of coverage in population that reduced the peak of an epidemic such as the efficacy of vaccine at least 60% could cover 100% of population while if the efficacy of vaccine increased to 70%, the coverage drop to 75%. Therefore, the higher coverage population of COVID-19 vaccination is, the higher of them we can help to prevent or stop COVID-19 pandemic situation. However, the vaccine is not yet clear for efficacy that helps us to stop pandemic situation without other interventions such as social distancing, wearing masks or using hand sanitizer.

Each country wants to encourage their people to vaccinate the COVID-19 vaccine via many methods such as building trust by immunizing the leader of the country or educating people with the benefit of vaccines. On the other hand, some groups of people do not want to get the vaccine because of many reasons. The report from the Centre for Countering Digital Hate (CCDH) found around 16% of British people did not want to vaccinate for COVID-19, the same proportion had yet to make up their mind and some people hesitated about consequence of the vaccine ("The online anti-vaccine movement", 2020). In recent years, the number of pro-vaccine discourse are bigger while the accounts of anti-vaccine are smaller but the anti-vaccine community has still grown (Gunaratne et al., 2019).

1.2 Problem Statement

COVID-19 outbreak causes a lot of problems in the economy and society. The world wants to halt it as soon as possible. One of the solutions is vaccination for immunity to the people. However, Gunaratne et al., 2019 found the anti-vaccine communication has been growing that may influence many people to decide denial of the vaccination and impact to the handle of pandemic situations in the future. This study wants to know factors that affect pro-vaccine and anti-vaccine COVID-19 among individual person who differ in demographic background.

1.3 Research objective

The purpose of this study is:

1. To determine the factors that influence people's belief and distrust in Covid-19 vaccine.

2. To analyze the demographic background that affects decision making in accepting vaccination or not.

3. To recommend the communication which influence the people to be more confident in vaccination.

1.4 Research question

What are the main factors which cause people to get the Covid-19 vaccine or not?

1.5 Research scope

The research will be focused on 10 people with different backgrounds including education, age, occupation, income or belief. The interviewing procedures will get more information in depth of each interviewee's behavior. Though all interviewees cannot represent all populations in the region, we will get some information to describe the factors that influence customer behavior in COVID-19 vaccination.

1.6 Expectation benefit

The research aims to understand the factors affecting customer behavior about COVID-19 vaccination. After we have known, there will be benefits for improving the communication with appropriate strategy about COVID-19 vaccine.

CHAPTER II
LITERATURE REVIEW

This research wants to know the depth of the factors that influence people who want to get COVID-19 vaccine or not. In this chapter, the individual's belief that relate to action will be described based on the Health Belief Model, influenced from the theories of Kurt Lewin (Rosenstock, 1974), to give the understanding of the theory that relate to behavior in a choice situation (Maiman, 1974).

2.1 Theoretical of the Health Belief Model

During the early 1950s the Public Health Service wanted to promote the prevention of disease but had failed to make the broad population accepting the concept even stringent evidence available at that time such as screening test and prevention first for Tuberculosis (TB) followed by for cervical cancer and dental disease. This led Rosenstock in 1974 attempted to explain the behavior of the people who did not concern in these severe diseases.

The Health Belief Model was developed from the social psychological theory from Lewin (Maiman, 1974). It was explained in order for action to keep away from disease due to people believed in (1) perceived susceptibility (2) the disease would have at least moderate severity on their lives (3) taking action would be benefit and reduce severity of disease that would not become their psychological barriers such as cost, convenience or pain. As Rosenstock, 1974 explained more about it.

2.1.1 The Belief

Perceived Susceptibility

"Individuals were believed to vary widely in their acceptance of personal susceptibility to a condition." (Rosenstock, 1974) Such as a person believes he/she is

far from COVID-19 pandemic's region, so he/she does not worry about wearing a mask, washing hands and distance from each other.

Perceived Seriousness

"The degree of seriousness may be judged both by the degree of emotional arousal created by the thought of a disease as well as by the kinds of difficulties the individual believes a given health condition will create for him." (Rosenstock, 1974) Such as a person believes COVID-19 could threaten his/her life, affect his/her ability in a long time or impact his/her job or family, so he/she will be more likely to follow the health's instructions.

Perceived Benefits of Taking Action and Barriers to Taking Action

An individual person believes that a given intervention will be effective for rescue the disease and turn to benefit while the intervention becomes inconvenient, expensive, painful or embarrassing. These negative aspects as barriers and motivate a person to want to avoid but sometimes the action will be possible. If the readiness to act was high and the barrier was weak, a person might decide to act. On the other hand, if the readiness to act was low and the negative aspect was intense, the negative aspect will be a barrier against action. Sometimes, the readiness to act was high and the barrier of action was high too. The choice of actions that nearly result might be chosen. (Rosenstock, 1974) For example, the person who was intimate with COVID-19's patient but he/she did not want to be tested with nasal or nasopharyngeal swab technique (Figure 1) because it looks like inconvenience and painful. He/she may choose to quarantine himself/herself for 14 days instead of swab test.

2.1.2 Cues to Action

Rosenstock, 1974 believed a cue or a trigger that urged an individual person for taking action was necessary. Cues to action combined factors of susceptibility and severity forced a person to act because of benefits (less barriers). The factors might be internal (e.g. knowing own body better than others) or external (e.g. suggestion from neighbor or information from social media).

2.2 Previous Studies on the Health Belief Model

The various studies have been researched about factors that influence action from the Health Belief Model.

Mercadante, et al (2020) found participants in the United States with age 18-49, household income less than $20,000 and not having relation with COVID-19 patients show the negative impact of COVID-19 on health behavior and low acceptance in COVID-19 vaccine.

Neumann-Böhme, et al (2020) collected an online survey in seven European countries (Denmark, France, Germany, Italy, Portugal, the Netherlands, and the UK) focused on willingness to COVID-19 vaccination. 73.9% in 7,664 participants willing to get COVID-19 vaccine. 18.9% were not sure and 7.2% did not want to get the vaccine because they concerned about side effects and they thought COVID-19 vaccine would not be safe.

In China, Lin, et al (2020) attempted to understand the COVID-19 vaccine demand also hesitancy and willingness to be allied to the Health Belief Model. the most respondents reported probably yes (54.6%) and definite yes (28.7%). The acceptance of vaccination decreased in respondents who were concerned about adverse events of COVID-19 vaccine and increased in respondents whom believed in benefits such as making themselves feel less worried with COVID-19 and decreased chance of getting COVID-19 and complication. They found that knowing of many people getting COVID-19 vaccine was related with cue to action of vaccination including median willingness to pay is $28.

Wong, et al (2021) studied in Hong Kong population by random telephone survey. They found older people (more than 65 years old), disability allowance, retired and chronic condition tend to accept vaccines over younger age range. People trusted the healthcare system, the vaccine manufacturers and recommendation by the government were all related to vaccine acceptance.

Another country, Malaysia, Wong, et al (2020) studied factors affected to receive the vaccine with various intentions. 48.2% of respondents definitely intended to receive the vaccine, 29.8% probable intended and 16.3% possible intended. The factors that related to the acceptance are believing that the vaccine would decrease the chance

of infection and compromise the severity of COVID-19 infection. They are willing to pay a vaccine around $30.66 - $18.12.

These studies focused on the factors that affect to the COVID-19 vaccine acceptance in many countries ally to the Health Belief Model. The difference of population who accepted to get the COVID-19 vaccine in various regions including reasons for acceptance and rejection of vaccination depend on many reasons.

This research will be focused on factors that influence people who want to get or refuse the COVID-19 vaccine in a diversified demographic background.

2.3 The COVID-19 vaccine technology platforms

In 2020, July 2, the global COVID-19 vaccines include 158 vaccine candidates but most of them (135 vaccine candidates) were still in the preclinical for their development (Kaur, 2020).

Now, we have 6 vaccine platforms that initially trialed in the clinical phase as showed in the table below (Kaur, 2020).

Table 2.1 Type of vaccine platform

Type of vaccine platform	Develop company	Advantages	Limitations
Live Attenuated Vaccine (LAV)/ the whole virus	e.g. ZydusCadila (India)	Intrinsic ability to stimuli the immune system.	Have to more testing in term of efficacy and safety.
Inactivated Virus Vaccine	e.g. Sinovac (China)	Stable and safer against LAV.	Require the booster shots to maintain the immunity.
Sub-unit Vaccine	e.g. Novavax (USA), Sanofi (French)	Safe with fewer side effects because of no live component of viral.	Doubtful for future in the part of memory B-cells.

Table 2.1 Type of vaccine platform (cont.)

Type of vaccine platform	Develop company	Advantages	Limitations
Viral vectored vaccines	e.g. University of Oxford/Astrazeneca (British–Swedish), Johnson & Johnson (USA)	High specific gene deliver into the host cell for stimulus immune response.	The host may create immunity for against vaccine effect to reducing efficacy
DNA Vaccines	e.g. Inovio pharmaceuticals (USA)	The synthesis DNA is temperature stable, thus cold-chain free.	DNA insert to the host genome may cause abnormalities in the cell.
RNA Vaccines	e.g. Moderna (USA), Pfizer (USA)	mRNA cannot insert to the host cell.	Found reactogenicity and instable.

2.4 Conceptual framework

The study guided by the conceptual framework that adjusted from the Health Belief Model. The factors came from the perceived susceptibility, the perceived seriousness, the perceived benefits of taking action and barriers to taking action, and cues to action.

Perceived susceptibility

RQ1a; Worry about getting COVID-19.

RQ1b; Living or working in risk area.

RQ1c; Higher change to get COVID-19.

RQ1d; Getting COVID-19 is possible.

Perceived seriousness

RQ2a; Complications are serious.

RQ2b; COVID-19 make me decreased physical ability or death.

Perceived benefits

RQ3a; Vaccine decrease chance of infection.

RQ3b; Vaccine reduce severity of complications.

RQ3c; Vaccine make me feel less worry from getting COVID-19.

RQ3d; Vaccine from the global famous company increase confidence to me.

Perceived barriers

RQ4a; Concern about efficacy.

RQ4b; Concern about safety.

RQ4c; Concern about price.

RQ4d; Concern about vaccine platform that may affect to my DNA in the future.

RQ4e; Concern about shorter time for developing COVID-19 vaccine.

Cues to action

RQ5a; Adequate information of COVID-19 vaccine.

RQ5b; Taken by a lot of people in many countries.

RQ5c; Expect to the better economy then more chance to earn money.

RQ5d; COVID-19 vaccines are available.

According to the above literature, we found a lot of factors that may relate to acceptance of the COVID-19 vaccine then we listed all factors into the framework as below.
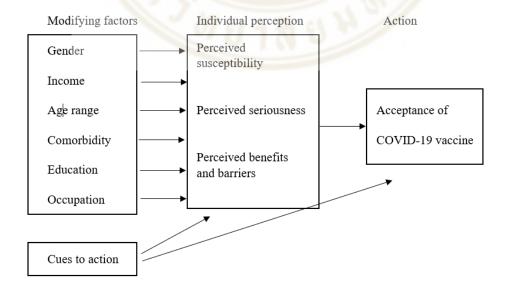

Figure 2.1 Acceptance of COVID-19 vaccine framework

CHAPTER III
RESEARCH METHODOLOGY

3.1 Research Design

The initial research around the world tries to understand why people want to get vaccines or not with quantitative surveys for collecting data with a lot of people in their region. However, this study wants to find the real intention of each person who accepts and declines vaccination. In this uncertainty situation may lead people to insure with the COVID-19 vaccine through a shorter period of development (around 1-2 years). It would change a lot from the traditional vaccine development which takes on average 10 years (Le, 2020).

Qualitative research wants to describe behavior from inside to action. It attempts to find a better understanding of social realities and attention to something in terms of processes, patterns and structural features (Flick, 2004). This study chooses semi-structured interviews for finding the true determination of each person to the COVID-19 vaccines instead of focus groups because of collectivism and high power distance in Thailand that may lead other participants to diverge from their purposes or do not dare to argue with seniority.

3.2 Sample and Data Collection

This research uses semi-structured interviews with 10 respondents who have different demographic backgrounds to collect data in the group who accept and want the vaccination compared to another group that refuse.

Table 3.1 The respondents' profiles

Acceptance COVID-19 vaccination			Refuse COVID-19 vaccination		
No.	Age	Occupation	No.	Age	Occupation
1	64	Housewife	6	56	Housewife
2	37	Physician	7	42	Physician
3	35	Ex-business owner	8	34	Guide and freelance
4	36	Private company's employee	9	31	Private company's employee
5	21	Student	10	20	Student

All respondents will be asked the same question, starting with screening questions to separate them into acceptance and refusal vaccination groups. Each interview was conducted in a private and quiet area for at least approximately 30 minutes. Every interviewee acknowledges that this interview will be recorded only to ensure the researcher will not miss any key points. After that the data was destroyed for confidentiality of interviewees.

3.3 Interview questions

Before the interview, the researcher informs interviewees about the research objectives and reason for studying this research. The questionnaire includes screening questions that separate interviewees into 2 groups then probing about inside factors that influence them into decision in each group. The questionnaire is below.

Screening questions

1. Have you ever gotten a vaccine before (in any vaccine)? Why do you decide to get it?

2. If the COVID-19 vaccine becomes available. Do you want to get a vaccine or not? Why?

After screening questions, the interviewer will ask the same questions following the Health Belief Model.

3. How does the pandemic situation affect your life and job? How do you feel about it?

4. How do you prepare yourself to cope with this situation (financial, health and others)?

5. Do you know about COVID-19 vaccines that are available now? How do you feel after perceiving that?

6. What is your expectation from COVID-19 vaccine?

7. Where are the channels that you get the information of COVID-19 and vaccines? Why do you believe in that information?

8. How is the price range of COVID-19 vaccine that you intend to pay?

9. What are the adverse events of the vaccines that you worry the most?

10. Do you think the country of original vaccine is important to efficacy and safety? What is the country or brand of vaccine that you want to vaccinate the most? Why?

11. What are the other factors that can influence you to get the vaccine?

12. What are the other factors that lead you to refuse the vaccine?

13. Have you ever known anyone who caught COVID-19?

14. Do you think it is possible that you can get COVID-19? Why?

15. What are the other factors that brought you to get COVID-19 or not?

16. If you get COVID-19, how do you deal with it and what clinical manifestation may happen to you?

Demographic question

17. Please describe your demographic information.

a. How old are you?

b. What is your occupation?

c. Where is your workplace?

d. Do you have any underlying disease?

To find the true intention of each interviewees, the following questions will be used to encourage them to explain in more detail, give examples or other beliefs.

- Would you give me an example?

- Could you please explain more about it?

- Is there anything else you'd like to say?

- It is quite interesting. Why do you think so?

CHAPTER IV
FINDINGS AND DISCUSSION

This chapter will discuss about the findings from 10 interviewees divided into 5 respondents for acceptance COVID-19 vaccine and another for refusal the COVID-19 vaccine about the factors that influence them into each group. The data were collected by semi-structured interviews in March 2021. The results of interviews are divided in 2 parts.

1. Finding factors that influence interviewees to get vaccines align with the Health Belief Model.

2. Finding factors that influence interviewees to refuse vaccines align with the Health Belief Model.

4.1 The Factors Influence to Acceptance COVID-19 Vaccination

There are 5 different background interviewees and found only one respondent got COVID-19 vaccine already. The researcher explains it aligns to the framework (Figure 2).

Perceived susceptibility

From framework, the researcher assumes the factors affected respondents to get vaccine are;

Worrying about getting COVID-19

There are four out of five worried about getting COVID-19.

"*I am aware of people who cough that led me worry whether they are infected and I escape from them immediately.* ***I feel uncomfortable and afraid of getting COVID-19****. I wear mask, social distancing and wash my hands often for protect myself*"
By respondent 1

"***I am worried about getting COVID-19*** *because I am afraid of sending virus to my partner, children and mother so I have to change my daily life. I stay in a dorm on weekdays and go home only on weekends. Before COVID-19 era, I went home everyday. When I go to work, I have to make social distance with the patients, wearing masks and face shields all the time.*" By respondent 2

"*At the first wave of pandemic,* ***I was worried so much*** *because at that time I worked in a drug store at Phuket and contacted a lot of foreign tourists but after quarantine regulation and I was unemployed, I was not worried anymore.*" By respondent 3

"***I am not worried about getting COVID-19*** *however I wear a mask and bring alcohol gel. But I hate to wear a mask because it makes my makeup messy. Furthermore, even among a lot of people I sometime don't care taking of my mask because of the hot weather in Thailand.*" By respondent 4

"*Now, I am doing an internship in the hospital so* ***I am worried about getting COVID-19*** *because I have to contact many patients. I wear a mask, wash my hands a lot but sometimes I worry the virus can infect me in one way or another.*" By respondent 5

Living or working in a risk area.

There are three out of five respondents work in risk areas such as hospitals.

Higher change to get COVID-19

There is one out of five respondents who has a higher chance to get COVID-19 because he/she is a doctor and works in a hospital in Samut Sakhon the province that had the highest number of COVID-19 patients.

Getting COVID-19 is possible

There are three out of five respondents think they might risk to get COVID-19 from the workplace because they are working related to hospitals. The rest of them think they are taking care of themselves appropriately and spend most of the time in their houses.

From the perceived susceptibility, because of limitation of the respondents that hard to analyze in statistical analysis but it shows some patterns of them. Almost all respondents are worried to getting COVID-19 from their workplace and they behave align standard regulation such as wearing a mask, wash their hands and social distancing. It shows all respondent perceive susceptibility of COVID-19 and do not want to get it (they protect themselves with many interventions but vary in level of strictness).

Perceived seriousness

Complications are serious and COVID-19 make me decreased physical ability or death.

No one is perceived about seriousness of COVID-19 because they think they have asymptomatic or mild symptoms if they get COVID-19.

"*I am going to the hospital to get treatment for COVID-19. But I think I have never gotten COVID-19 because I am a good person and I always make merit so holy things will protect me from COVID-19. **Even though I get it, I will be OK because I pray and god bless me**.*" By respondent 1

"*If I get COVID-19, I will quarantine myself and **I think I should be mild symptomatic or asymptomatic** because I am young, strong and healthy. That's it. I'm not only one person in the world who get it, millions of people get it too. Almost all patients survive. Just treating me followed by the guideline treatment of COVID-19. Even though I have to use respirator, I will accept it*" By respondent 2

"*I am not worried about getting COVID-19. It is just going to the hospital for treatment. **I perceive from news and report that the younger and healthy do not have severe symptoms** but I worry about being COVID-19's carrier to spread the virus to others*." By respondent 3

"*I am not concerned much about getting COVID-19 because I have a lot of insurance but I want to be treated in the private hospital for convenience and I am not confident in public hospital. **I think I will be OK if I could get the treatment***" By respondent 4

"*I think if I get COVID-19, I will be asymptomatic*. *Maybe I will get it and recover already. I have insurance and I will go to the hospital for treatment like other diseases*." By respondent 5

Even though all respondents are worried about getting COVID-19 but all of them do not perceive seriousness of it. All interviewees do not have the underlying diseases. They are healthy so they do not think COVID-19 will make them got severe symptoms.

Perceived benefits

Vaccines decrease chance of infection.

There are three out of five interviewees not mentioned for a decreased chance of infection. Respondents 2 and 4 said the vaccine cannot decrease the chance of infection.

Vaccines reduce severity of complications.

All respondents agree that vaccination will help decreasing the severity of complications if getting COVID-19.

"*I am very happy after I found out about the COVID-19 vaccine available. I want to get it in any brand. I've already got COVID-19 vaccine with Sinovac. I want to get COVID-19 vaccine because I want to live my life as normal as I am confident that I have immunity against it. From the report that collected data from many people who got vaccines found no one got severe symptoms that led them to be treated in ICU. I think after I get COVID-19 vaccine. I would not have severe symptoms either.*" By respondent 2

"*I knew from a doctor who studied COVID-19 that after you get a vaccine, it decreases the percentage of death or decreases severity.*" By respondent 4

Vaccine makes me feel less worried about getting COVID-19.

All interviewees think they feel more confident if they get COVID-19 vaccine. Even though the data and information of vaccines are not solid, they want to get a vaccine at least to protect them from the severe complications of COVID-19.

***"After I heard COVID-19 vaccine available, I am pleased because I think the vaccine is like a shield to protect me from COVID-19."* By respondent 1**

"*I am happy when I know COVID-19 vaccine is available. At that time, I thought I would become normal before COVID-19 but after I traced the information that the results of the vaccine cannot decrease the chance of infection, I am disappointed. But I still want to get a vaccine because my workplace relates to hospitals. I think I have a chance to get COVID-19 so **I want to protect myself first with vaccination**.*" By respondent 4

Vaccines from a global famous company increase my confidence to me.

There is only one respondent who wants to get a vaccine in any brand in any company. The rest of them think they want to choose the brand that they are confident with efficacy and safety. And they think it has different results from the different manufacturer even with the same platform of vaccines.

"*I asked the doctor who works in COVID-19 field, **they suggested a vaccine from Johnson & Johnson is the best**. I am tired of finding other information. So I think I will get Johnson & Johnson's vaccine only.*" By respondent 4

"*I want to get COVID-19 vaccine with the brand that I choose. **I want to get a vaccine from Pfizer** because of the reputation of the company. and I'm not confident in Thai manufacturer*" by respondent 5

From the perceived benefit, the factor that strongly related to all respondents are decreasing severity of the complication and making them less worried about getting COVID-19.

Perceived barriers

Concern about efficacy and safety.

There are four out of five focused on the benefit of vaccination more than side effects. They think they can accept the adverse events of COVID-19 vaccine because they want to get a vaccine to feel comfort in this situation and expect to run the business more than focusing on the efficacy and safety.

"***I am a little bit concerned about the allergy of vaccination*** *but I have never been allergic before so I think I choose to feel comfortable by vaccination instead of being afraid of it*." By respondent 1

"*I concern about safety more than efficacy.* ***What if I get the vaccine and develop Bell's palsy, paralysis, cancer or even death, I would rethink about getting the vaccine****. On the other hand, I think efficacy only 50-60% is OK for me better than no vaccination*." By respondent 2

"***I am not worried about the side effects of COVID-19 vaccine. I heard it only pain*** *at the injection site for a couple day**s. I think it is a normal side effect. I want to get vaccine for protect myself and run my business again*" By respondent 3

"***I concern only death after vaccination. I want*** *to get a vaccine like a* ***shield to*** *protect myself*.**" By respondent 4**

"***I think efficacy and safety of vaccines depending on each brand.*** *So I want to ensure that which brands are safe and have high efficacy before I get it*." By respondent 5

Concern about price.

The interviewees raise various of vaccine's price from 200-4,000 THB. All respondents think they will pay for vaccines if they cost not more than 4,000 THB. But only the interviewee who already got COVID-19 vaccine suggesting if it costs not more than 200 THB, it influences more people who want vaccination.

Concern about a vaccine platform that may affect my DNA in the future.

Only one interviewee mentioned a vaccine will affect to human's DNA because of the mechanism of action of COVID-19 vaccine.

"*I want to get Sinovec the most because Pfizer, Moderna and Astrazeneca use viral vector platforms.* ***The mechanism is to use viruses to bring DNA and RNA of viruses into my cells.*** *We have never known the DNA or RNA will corporate in my genome like hepatitis B and C's vaccine for producing immunity but* ***what if it corporate into our tumor suppressor gene and stimulate us to have cancer in the future***. *But*

Sinovac is an inactivated vaccine that uses the same platform with polio vaccine so I think Sinovac is safer than others in terms of side effects." By respondent 2

Concern about shorter time for developing COVID-19 vaccine.

No one is concerned about the shorter time of COVID-19 vaccine. All of them feel happy more than curious about the shortest time of developing vaccines in history. Two out of five understand this is an emergency situation so it is reasonable for FDA approval even if without long term side effects information.

Cues to action

Adequate information of COVID-19 vaccine.

Four out of five respondents said they do not have adequate information about COVID-19 vaccine because they do not trace every news and information. Sometimes they just read news that pop up in their social media or asking someone they trust. They also use their consideration for judging the trustworthy of the data. The one left intend to find information from literature and lecture from famous doctor who focus on COVID-19 such as Dr. Yong Poovorawan. He is currently the head of the Center of Excellence in Clinical Virology at the Faculty of Medicine, Chulalongkorn University, Bangkok.

Taken by a lot of people in many countries.

There are four out of five interviewees do not mention about it. Only one out of five interviewee think she want to observe just a while before choosing brand that he/she want to get.

Expect to have better economy then more chance to earn money.

From respondents 2 and 3 point out spreading COVID-19 vaccine to people helps us become normal. They do not expect us to go back to the pre-COVID-19 era but they want to see economic expansion because lockdown policies in many countries lead to a huge effect of their work and income. But respondent 5 mentions that in Thailand, the COVID-19 vaccine may not affect the economy because most people cannot access to get COVID-19 vaccine because of price if the government does not provide it to them.

"*I want the Ministry of Public Health to communicate to the public to create confidence about COVID-19 vaccine. **It is beneficial for the economy to decline lockdown policy** for running many businesses in Thailand*." By respondent 2

"*I want to vaccinate because I want the government to **open the country for tourism that helps entrepreneurs run their business.** If the COVID-19 vaccine is available, I will pay for it*." By respondent 3

COVID-19 vaccines are available.

One of them got COVID-19 vaccine already because of working in risk area and three of them think they would have got vaccine already if it is available with many brands (they want to have more options than Sinovac and AstraZeneca). Only one left want to observe for a while before choose the brand.

4.2 The Factors Influence to Refuse COVID-19 Vaccination

Perceived susceptibility

Worry about getting COVID-19.

All respondents are not worried about getting COVID-19 and they do not perceive themselves to adapt so much after COVID-19.

"*I was so anxious about getting COVID-19 at the first pandemic in Thailand. I went to a doctor for checking because I felt dyspnea and I thought I was getting COVID-19. However, the doctor said because of obese and old. After that, I do not feel dyspnea anymore. In the second wave, I am not worried about **getting COVID-19** because I behave aligned to regulation strictly and I spend almost all my time in my house. Including **I always make meditation and use herbs. These protect me from COVID-19.***" By respondent 6

"*I like when the government announces lockdown policy. I went to department stores without crowded people and a lot of sales. **I am not scared of getting COVID-19.***" By respondent 7

"*I might get COVID-19 and recovered so **I am not worried about it at all**. Because I behave myself in alignment with international recommendations such as wearing a mask, washing my hands and social distancing.*" By respondent 8

Living or working in a risk area.

Only one respondent is working in the risk area. The rest of them spend time in their house due to work from home, freelance, housewife and study online.

Higher change to get COVID-19.

Only one respondent who has a higher chance to get COVID-19 because she has to directly contact the patients in acute respiratory infection clinic. And knowing in person with COVID-19 infected person.

Getting COVID-19 is possible.

No one thinks they have a chance to get COVID-19.

Perceived seriousness

Complications are serious and COVID-19 make me decreased physical ability or death.

All respondents do not think they have a chance to get COVID-19.

Perceived benefits

Vaccines decrease chance of infection.

Only one interviewee mentioned the chance of infection after vaccination but she does not believe in it because COVID-19 vaccines do not protect us 100% from COVID-19.

Vaccines reduce severity of complications.

Only one respondent mentioned it. The rest of them do not think about getting COVID-19 and do not think anything about the severity of symptoms.

***"Only benefit of vaccines is to reduce severe symptoms from COVID-19."* By Respondent 7**

Vaccine makes me feel less worried about getting COVID-19.

All respondents do not think that vaccination helps them feel less worried about COVID-19 because they are not worried about it, almost 0% for getting COVID-19 and do not perceive the severity of COVID-19. On the other hand, they think vaccination increases worry about side effects to them.

Vaccines from a global famous company increase my confidence to me.

There are three out of five respondents trust in the global company. the rest of them trust in Thai companies.

"I am more confident with Thai manufacturers because I trust in Thai FDA." **By respondent 6**

"I do not trust other global famous companies. I trust only in Thai manufacturers. Because most of the participants in the global company are Caucasians so I think it is not suitable with Thai." By respondent 7

"I trust in the global famous company because of reports of having more efficacy than the vaccines from China." **By respondent 10**

Perceived barriers

Concern about efficacy and safety.

There are four out of five respondents concerned about the side effects of vaccines more than the benefit. Just only one is not interested in side effects because he does not plan to get COVID-19 vaccine.

"I am not sure about the safety of COVID-19 vaccines in any brand because **I perceived death as a side effect after getting the vaccine.** *I am concerned about allergy for vaccines the most, I do not want to go to the hospital. So, I want to wait for a lot of people to get it and proved it safe enough before I make a decision."* By respondent 6

"I am not sure about the uncertainty side effects of vaccines. I have survived for a year without getting COVID-19. Why should I take a risk from vaccines? And I do not think it protects us 100% from COVID-19. I am afraid of Pfizer's vaccine the most because of serious side effects such as death, Guillain-Barre syndrome. I think Sinovac is safe the most but I think China quite hides information." By respondent 7

"I am concerned about side effects, especially allergy, syncope, shock and paralyze." **By respondent 8**

"I have survived from getting COVID-19 for a year. Why do I have to get the side effects of vaccines instead of doing nothing?" **By respondent 9**

"I do not remember the side effects. I am not interested in it because I do not want to get a vaccine." **By respondent 10**

Concern about price.

There are three respondents mentioning the price range of the vaccines should be around 1,000-3,000 THB. The two of them said if they want to get it, they will pay at any price.

Concern about a vaccine platform that may affect my DNA in the future.

Just one interviewee mentioned a vaccine will affect DNA. She knows it from her friend but she does not agree with her friend.

Concern about shorter time for developing COVID-19 vaccine.

All respondents feel COVID-19 vaccines are too short for use in humans.

"I think COVID-19 vaccines are too new for using." **By respondent 6**

*"I think it is **too fast for launching COVID-19 vaccine**. In general, using at least 5-10 years for launching a vaccine. I want more studies in COVID-19 vaccine."* By respondent 7

"If COVID-19 has developed for 20 years and strongly proves it does not harm my health. I will believe in vaccination." By respondent 9

Cues to action

Adequate information of COVID-19 vaccine.

All of the interviewees think they get the right information from the media that they trust.

*"I trace news related to COVID-19 and vaccines via **social media and announcements from the government**. I think it is very credible and useful such as I have eaten herb to protect COVID-19."* By respondent 6

"I perceive information from healthcare workers so I am confident in this information." **By respondent 7**

*"I always trace news related to COVID-19 a lot because I want to prepare myself for being a guide after the government allows. I think my information is strong because **I trace it with many credible channels such as ministry of health in Thai and Japan and Siam bioscience's manufacturing**."* By respondent 8

"if I perceive a conflict of information between the government and private media, I will have a tendency in private media." **By respondent 10**

Taken by a lot of people in many countries.

All respondents want to wait for a lot of people to get COVID-19 vaccine. They will be OK if they are the rest of the world to get vaccines or do not get vaccines at all.

Expect a better economy then more chances to earn money.

All of them do not concern part of financial or income. Even if one of them were a guide but he has other jobs. Another one is private employee work from home and not affecting her income. One out of five perceive a pandemic effect to her income but she will be OK. The rest of them do not have any concern in terms of financial.

COVID-19 vaccines are available.

Other factors; Acceptance to go to abroad

"If the government announce everyone want to go to abroad have to get vaccine, I will take it" By respondent 7

Other factors; all people around him get vaccine

From respondent 10, he mentioned that he may rethink vaccination if his friends got it.

Among ten interviewees, there were several factors that affected them to get the vaccine. Differentiate between who want to get and refuse. The results of the interview are present in the table below.

Table 4.1 The interview results showing the factors affecting acceptance and refusal of the COVID-19 vaccine align the Health Belief Model

Acceptance COVID-19 vaccination		Refuse COVID-19 vaccination	
Perceived susceptibility		Perceived susceptibility	
Factors	From	Factors	From
Worry about getting COVID-19.	Resp#1, 2, 3, 5	Worry about getting COVID-19.	-

Table 4.1 The interview results showing the factors affecting acceptance and refusal of the COVID-19 vaccine align the Health Belief Model (conts.)

Acceptance COVID-19 vaccination		Refuse COVID-19 vaccination	
Perceived susceptibility		**Perceived susceptibility**	
Factors	From	Factors	From
Living or working in risk area.	Resp#2, 3, 5	Living or working in risk area.	Resp#7
Higher change to get COVID-19.	Resp#2	Higher change to get COVID-19.	Resp#7
Getting COVID-19 is possible.	Resp#2, 3, 5	Getting COVID-19 is possible.	-
Complications are serious.	-	Complications are serious.	-
COVID-19 make me decreased physical ability or death.	-	COVID-19 make me decreased physical ability or death.	-
Vaccine decrease chance of infection.	-	Vaccine decrease chance of infection.	-
Acceptance COVID-19 vaccination		**Refuse COVID-19 vaccination**	
Perceived benefits		**Perceived benefits**	
Factors	From	Factors	From
Vaccine reduce severity of complications.	Resp#1, 2, 3, 4, 5	Vaccine reduce severity of complications.	Resp#7
Vaccine make me feel less worry from getting COVID-19.	Resp#1, 2, 3, 4, 5	Vaccine make me feel less worry from getting COVID-19.	-
Vaccine from the global famous company increase confidence to me.	Resp#1, 3, 4, 5	Vaccine from the global famous company increase confidence to me.	Resp#7, 9, 10

Table 4.1 The interview results showing the factors affecting acceptance and refusal of the COVID-19 vaccine align the Health Belief Model (conts.)

Perceived barriers		Perceived barriers	
Factors	From	Factors	From
Concern about efficacy.	Resp#5	Concern about efficacy.	Resp#6, 7, 8, 9, 10
Concern about safety.	Resp#2, 4, 5	Concern about safety.	Resp#6, 7, 8, 9
Concern about price.	Resp#2, 5	Concern about price.	Resp#6, 7, 9
Concern about vaccine platform that may affect to my DNA in the future.	Resp#2	Concern about vaccine platform that may affect to my DNA in the future.	-
Concern about shorter time for develop COVID-19 vaccine.	-	Concern about shorter time for develop COVID-19 vaccine.	Resp#6, 7, 8, 9, 10
Cues to action		**Cues to action**	
Factors	From	Factors	From
Adequate information of COVID-19 vaccine.	Resp#2	Adequate information of COVID-19 vaccine.	Resp#6, 7, 8, 9, 10
Taken by a lot of people in many countries.	Resp#5	Taken by a lot of people in many countries.	Resp#6, 7, 8, 9, 10
Expect to have better economy then more chance to earn money.	Resp#2, 3	Expect to have better economy then more chance to earn money.	-
COVID-19 vaccines are available.	Resp#1, 3, 4	COVID-19 vaccines are available.	-
Other factors that influence them vaccination		**Other factors that influence them vaccination**	
No other factors		- Acceptance to go to abroad from Resp#7 - All people around him get vaccine from Resp#10	

CHAPTER V
CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This research wants to find results for the research question that "What are the main factors which cause people to get the COVID-19 vaccine or refuse it?". After searching for literatures and theories that related to explain about individual's belief in health as in the Health Belief Model, a semi-structured interview is used for methodology. This research was conducted in February to March 2021 with 10 interviewees who want to get a vaccine and vice versa. The data from all respondents aligned to the Health Belief Model were analyzed for finding factors that affect vaccines and to answer the research question.

For the group of acceptance, the researcher found respondents are quite high perceived susceptibility and perceive benefit via factors "worry to get COVID-19" compared to the group of rejection that "no worry to get COVID-19" (may from more interviewees in the group of acceptance work in the risk area than the group of rejection). The group of rejection was higher perceived barriers than another group via factors "hesitation with efficacy", "concern about side effects" and "do not believe in the short time vaccine development". While the group of acceptance focused on perceived benefit from factors "reduce severity of complication", "feel less worry after vaccination" and "trust in the global company". All respondents did not perceive in seriousness. While the research is progressing, Thailand has only two brands of vaccines which are Astrazaneca and Sinovac limited for healthcare workers who work in the risk area but are not available for ordinary people.

Other factors came from cues to action that relate to "Adequate information of COVID-19 vaccine", "Taken by a lot of people", "enhancing economy", "available vaccine", "going to abroad" and "people around me get vaccinated".

The results of the study showed that it was related to the Health Belief Model more than literature review in CHAPTER 2 because the previous study focused

on what do they want to get vaccines in various intentions but in this study we wanted to find the factors that were related to influence them to make decisions like this. Align to the theory, people who perceived susceptibility, seriousness and benefit tend to act something to release their worrying. On the other hand, people who perceived barriers more than susceptibility, seriousness and benefit tend to do nothing to protect themselves.

The interesting point was the same demographic profile may decide in different ways such as housewives with most likely age, doctors, people whose work related to pandemic situations, employees and students. From the doctor and the entrepreneur who stopped her business in the acceptance group, they quite were affected by the pandemic more than another group in terms of financial and living. In the student who wanted to get a vaccine because her internship place was a hospital compared to another student who study online only reflects that he did not perceive susceptibility including the employees. However, the housewives have the same background and workplace but they were different in belief of the global company (acceptance) and Thai manufacturers (rejection).

5.2 Recommendations

The world after the pandemic of COVID-19 has never been the same. If they want to become similar as it was, the COVID-19 vaccine may be the answer. Consideration of risk and benefit of COVID-19 vaccines are important. Even though this pandemic situation is quite severe and increases mortality rate in many countries, the register process for COVID-19 vaccines do not require some information that related to safety profile of vaccines for hoping alleviate this pandemic instead of waiting for herd immunity (definition from John (2000) is "the resistance of a group to attack by a disease because of the immunity of a large proportion of the members and the consequent lessening of the likelihood of an affected individual coming into contact with a susceptible individual"), becoming endemic disease or washing hands, wearing a mask and social distancing which using for a long time and disrupt in many businesses lead to economy recession in many countries. This study will recommend in terms of influencing people to get COVID-19 vaccines.

First, get confident in COVID-19 vaccines for people. This research result found some of the respondents want to ensure that vaccines are safe by waiting for safety information. So the government should provide vaccines as much as they can to people in the risk group. Then collect data after vaccination and publish it for the society including announcements via many media to make people to ensure that the vaccines are safe. And get confident to the hesitating people to accept vaccine to create herd immunity in Thailand as soon as possible.

Second, the government should set explicit regulation in terms of benefits for people who'd already got vaccines such as going abroad, arranging the entertainment events that only people who'd already got vaccines have the right to join. To activate the economy by increasing the employment rate and getting confident for the investors.

Third, encourage the private sector's to import the vaccine in many brands parallel with increased production capacity of vaccines in Thai manufacturers for being options for customers.

Lastly, set a ceiling price of vaccines and the government should provide free vaccines for low income people.

All recommendations consider factors that found in this research in terms of improving confidence for getting vaccines and reducing worry of it. The expected results of this is to improve the strategy for making people to get COVID-19 vaccines.

5.3 Limitation of the Research and Recommendations for Future Research

5.3.1 The Sample Size

The example of respondents was small sample size, only 10 respondents, that are not being well presentative in fully respondents in Thailand. Even though the demographic background is quite different and extensive in all generations and jobs. Therefore, the findings do not reflect all people in Thailand but it still shows some patterns of each generation and careers. The results of study will be more credible if collecting more sample size that could represents each province in Thailand and each career.

5.3.2 The Research Method

The data of this study was collected from a semi-interview structure which is hard to measure and finding correlation without bias. However, the factors that found in this research can extend to the further study in which quantitative study is based on the factors that this study found such as worry for getting COVID-19, concern about adverse events of COVID-19 vaccines or belief in efficacy of vaccines. Including focusing more on other tangible factors that can relate to accept or refuse vaccination such as income, job, impact from pandemic situation by using statistics method to analyze data collection for finding accurate results and creates more credibility of results and decreases bias from humans.

The COVID-19 outbreak is still an uncertain situation such as the efficacy of vaccines to stop the outbreak, new brands of COVID-19 vaccines in the market or mutation of COVID-19 in India and South Africa. Another point of study in part of factors that can influence people to get vaccines may be different from this study. The further study can conduct new information and analyze the situation again due to varying the pandemic that people may change their mind.

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