

# Public Health Volunteers and Prevention of COVID-19: Lessons from Thailand

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## ABSTRACT

The objectives of this research are (1) to study the roles of public health volunteers in the prevention of COVID-19 and (2) to study the problems and barriers of public health volunteers and the prevention of COVID-19. The quantitative research revealed that (1) when classified each aspect, it was found to be at the high level. These included the roles and participation in the awareness of disease severity, the participation in disease surveillance, disease prevention and control, respectively. However, the public relations aspect was at the moderate level. The results of the comparison were found on the basis of personal data. It was found that public health volunteers with different gender, age, marital status, education level, income had no different roles. The health volunteers have the duration, the number of times that the epidemic has been trained in the past year, number of times in contact with the sub-district health promotion hospital in the past year differently with the statistical significance at .05 level. The qualitative research revealed that there were problem of public cooperation, lack of cooperation problem, compensation problem, lack of necessary equipment, lack of understanding about COVID-19 prevention, and problem of excessive news perception giving people the chance to receive false information.

## Keywords

Volunteers, COVID-19, disease prevention, epidemic

## Background and significance of the problem

The situation of the COVID-19 outbreak took place for the first time in China at the end of 2019 (WHO, 2020). Just one month later on 12<sup>th</sup> March, 2020, the World Health Organization announced that the disease was in a wide-spread phase around the world also known as A Global Pandemic. It is the epidemic causing many human morbidity and mortality. The government and the health service system of each country are questioned to prove their ability both to assess the situation and to manage what possibly called a natural disaster. The epidemic situation also reflects the problems and impacts that will be encountered with infected people in different countries. Many of these have resulted in the calls for public health security through the need for sickness screening and access to emergency health services when being infectious. Many countries have faced problems including number of beds and medical technology that are inadequate to support the number of patients, the lack of supplies and drugs that provide clear efficacy in treating the insufficiency of effective preventive medical devices. The limited number of health personnel in these situations also leads to panic and anxiety affecting mankind's adaptation to disease prevention behaviors and new normal daily life (Wanwadee Pulpoksin, 2020).

The COVID-19 outbreak in Thailand is not different from other countries. The primary responsibility is taken by the Ministry of Public Health. Thailand starts to take measures in the continuous control of the disease. Most of the current risk factors for infection in Thai people come from those who come from abroad (Center for COVID-19 Situation Administration, 2020). During the time before the COVID-19 crisis in 2019, Thailand was rated in the Global Health Security Index report in the 6<sup>th</sup> rank of country with the highest public health security. The outstanding scores were in 3 sub-components; effective disease prevention, fast response to the epidemic crisis, and strong Thai public health system. Regarding the COVID-19 outbreak in

Thailand, most people know who the village health volunteers or abbreviated as Volunteers are. But after the outbreak in the country began to slow down, the number of infected people in Bangkok and other provinces reduced. The news was disseminated on the roles of volunteers in various areas that they acted as an "outpost" for those who were sacrificed because they were at risk of contracting COVID-19. They had to knock on every house door in the area that was responsible to monitor whether someone fell into the risk groups or did not comply with the National Communicable Disease Commission's notification on the prevention of COVID-19 policy of the Ministry of Public Health or not. However, from this COVID-19 outbreak situation, the village health volunteers have played an important role in being the fortress and the outpost in fighting with COVID-19 and engaging with local people in laying out measures to prevent disease and cope with the disease crisis in the form of joint decision-making, joint planning, and benefiting. They participated in monitoring and evaluation. It is a process by which people express their feelings in solving problems and responding the needs of themselves or of the community in the villages or in the community to make progress. There is a sense of belonging in the community as well. The volunteers are very important part of the development of strong communities and they are selected by the people in the social system. They are persons who sacrifices time, money and energy for public health operations in self-reliance at the individual level, family and community. They act as an intermediary of people's change in health and as a liaison between government officials and villagers.

With the role of the volunteers, they serve to prevent epidemics well. As a result, the world has seen that Thailand has the potential to cope with the epidemic crisis not less than any other country in the world. Part of the success factor would have to be given to policy-making. Thailand has strengthened medical and public health measures that respond quickly to this outbreak, and most recently, Global

COVID-19 (GCI) ranks Thailand as a country with a COVID-19 recovery index. Thailand was also praised by WHO and international level for being able to cope with COVID-19 well. One of the reasons is because Thailand has good family health care system caused by the system of public health volunteer work. The Ministry of Public Health manages 1.04 million volunteer nationwide. This includes 15,000 volunteers in Bangkok during the COVID-19 epidemic. These volunteers have been an integral part of the primary health system for the past four decades in conducting public health surveys, collecting information, keeping family health records, and campaigning on disease prevention to support the work of public health workers. During the epidemic, the collection of detailed health records of community members was used to monitor people exposed to the disease and to monitor their health. The strength of the Thai public health system comes from building a solid foundation from the past since the Department of Public Health was established in 1918 with the concept of "Prevention is better than cure" over the past 100 years.

Currently, there is an emerging epidemic of COVID-19 as well as an increasingly complex social environment making the public health and self-care solutions to be safe from COVID-19 infection and the work of the village health volunteers become more difficult. The society has changed a lot and the role of the village health volunteers inevitably changes according to the social conditions which are more complex and difficult to work. The COVID-19 epidemic is terrifying and is easily infectious by the nature of the work in this role of the volunteer. It is like working as a fortress in performing duties that have to be in contact with many people. Although everyone is concerned and fears about COVID-19, the volunteers continue working. They consider the doctors and nurses are also afraid of this disease but still do the duty to heal the patients without expressing their fatigue.

From the above information, it can be concluded that the role of village health volunteers is not only helping to alleviate the work load of doctors and nurses but they also play a role and participation in the prevention and control of COVID-19 epidemic. They are responsible for correcting bad news and disseminating good news, providing health coordination service, treating the suffering people, publicizing the information about the community, and being the good example in the role of the village health volunteers. They are the leaders at the village level who play a role in the prevention and control of the epidemic in the long run to be better and more sustainable. This is a plan to prevent the spread of COVID-19 that may occur in the future.

### COVID-19 problem solution of foreign countries

**1) Herd immunity:** In solving the COVID-19 problem, different countries use different forms of COVID-19 response. The People's Republic of China implements a rigorous anti-epidemic process by shutting down cities, shutting down the work, controlling people to use masks when they leave their homes, detention of suspected persons of being infected, and treating people infected with

the virus. This includes building a specialized hospital for the patients which is completely different from England. During the first phase, England used the concept of herd immunity as the main mechanism to fight with the virus. However, it has proven to be unsuitable for fighting highly contagious diseases. It resulted in severe epidemic. There were so many critically ill patients that were beyond the public health capacity to support. England had to change the measures in a way that would intensify control.

Regalado (2020) explains that when a certain population of society becomes immune to pathogens, the epidemic will stop by itself. If a person is infected with a small number of infections, the body will create an immune. The resistance increases and will come in and eradicate the infection. Immunity will result in pathogens becoming more vulnerable until being unable to injure the patient. When the weak germs spread to others, the immunity of people who have been infected with the disease will make the germs more susceptible and continue in this way and so on. However, the immunity of the infected person will also be stronger. As a result, the chance of getting new infections is reduced resulting in a decrease in the number of people who transmit the disease. The transmission of the disease finally stops. Therefore, no matter what method is used, the end result is the same. When the disease is spread for a long time, the herd immunity will work until the epidemic is calm. The use of vaccines is also a mechanism for creating the herd immunity.

At the same time, the estimates relied on the mechanism of group immunity to fight with the COVID-19 epidemic. Some epidemiologists are of the opinion that it is possible for 60% of the world's population to become infected with the virus in one year. When a society has this high number of infected population, the epidemic will subside similar to a state that is no longer an epidemic.

Lichfield suggests that waiting for the herd immunity is not an idea that most experts take as an important guideline. Whatever the end result will be, "Social distancing" measures must exist until serious problems are resolved. When the lock is loosened, the epidemic rate will rise. The government and the society have to know how to do in this state (Lichfield, 2020).

**Approach in alternate locking and unlocking:** According to the Imperial College report on March 16, 2020, the approach was proposed to lock and unlock alternately and continually. It can be said that the lockdown measure is used when the number of COVID-19 cases entering the ICU at a high level that may cause problems with the acceptable number of ICU. The "unlock" measure will be used when the number of COVID-19 cases entering the ICU drops to the specified level.

The lock-down situation causes the business to halt resulting in a lack of cash flow as people are unable to make a living. Many working people are unable to help themselves resulting in suicide in many cases. There is a large amount of fraud and theft which is a huge problem that has forced the state to relax some of the lockdowns in early May 2020.

**Approach in arranging the activities in some particular period:** If the vaccine is a long-term approach, an

important medium-term approach is to establish a system that can separate people who can allow all activities freely from those who have to stay and be controlled in their home or state quarantine areas.

**Approach of Social distancing or increasing the distance** is one of the methods to deal with the outbreak by allowing regular social activities. However, everyone must be spaced at least 1.5 meters to 4 meters in order to prevent person-to-person infection. Thailand is also using this measure to prevent COVID-19 spread such as spacing in restaurants and spacing in various social activities (Katie, 2020).

Some researchers have reported on aerosols and CoV flotation suggesting that the virus can float for hours and stay on the surface of an object. Thus, people should have preventive measures in order to reduce the spread of the infection to be more concentrated in all dimensions, for example, ordering food through the home delivery service. It can be seen that the food delivery company will have preventive measures in action in order to reduce the infection of each other in society to prevent an epidemic from person to person (Van Doremalen et al., 2020).

In the first phase, when there was a rapid epidemic, the “lock down” measure would be a great measure to solve immediate problems. It was to keep all the people in their homes and refrain from active activities. All gathered until the infection rate was at a controlled level

The second phase seeks to improve the ability to measure infections as much as possible. The measurement was of good quality and high accuracy to search for infected people and people with immunity. For example, the United States plans to check the population of all people in the country once in 2 weeks. Roche’s instruments can perform 4,200 measurements per day per device. Therefore, using 5,000 instruments can measure the population of approximately 20 million people per day (Regalado, 2020). The third phase provides a document certifying the immunity passport and allowing the person to exercise freely (UK and German administrators have this plan). For people infected with the virus, it is possible to do activities. However, the treatment must be performed regularly and must be treated properly allowing the mobile phone to record the travel history to take appropriate measures in accordance with the level of risk of those involved.

## Research methodology

**Population and sample group** in this research consist of 1) **population quantitative research** namely village health volunteers in the areas listed in the history register of Sub-district Health Promoting Hospitals in Sub-district Municipality nationwide of 2019 working in the villages in their responsibility for not less than 1 year totaling 309 persons. The survey was done on the population of village health volunteers in the health promoting hospital area from the list of 309 persons on the health promotion hospital registration. Then, the sample size was calculated from the formula of Yamane (Yamane, 1973). The sample size of 174 persons was obtained. 2) **A qualitative research methodology** was used to find the in-depth information in

order to gain the credibility from the source by selecting experienced informants and working directly in the epidemic in the position of President of the Village Health Volunteers in each area of Thailand. The 9 key informants were obtained by drawing lottery methods in order to obtain detailed information to be used in more complete analysis of data.

**Data Collection Tools** were questionnaires used in collecting the data for quantitative research and interview forms used for qualitative research. The in-depth interview was employed as a technique to collect information of key informants which are in-depth questions to obtain more detailed and in-depth information than other types of interviewing methods.

**For the data collection**, the researchers coordinated with public health volunteers to ask for permission to collect the data as well as contacting the informants to request an interview appointment date and time. The researcher clarified the purpose of the interview and how to interview for the informants to be informed along with requesting assistance to informants to send questionnaires and request an in-depth interview according to the research framework. The documents were collected from the informants to analyze and answer research questions. All interview transcripts of the key informants were taken for detailed paraphrasing and screening only information related to the research question being studied separated by groups of key informants.

**Statistics used in data analysis:** The researcher used the data collected from the sample group in the quantitative research to analyze using statistics of frequency, mean, percentage, standard deviation, t-test, F-test. The qualitative research method was applied to the collected data and analyzed the data by explaining and expanding the descriptive facts and problems. The Content Analysis method was used according to research questions and research objectives following the guidelines of the specified research conceptual framework.

## Research results

### Roles of public health volunteers and the prevention of COVID-19

**In the perception of disease severity**, most of the volunteers had good perception of disease in various areas; (1) background of disease, (2) symptoms of disease, (3) danger of disease, (4) disease surveillance, (5) prevention and controlling of disease, (6) impacts on people, community, and country. As a result, the volunteers help in doing the activities of surveillance and prevention of COVID-19 in their own village / community area.

**In the disease surveillance**, volunteers in each area have strict and continuous disease surveillance. The variety depends on the number of volunteers and the number of households in that area which measures for surveillance including going down to the area to knock on the door of every house to inquire about symptoms, fever screening, keeping an eye on the public to prevent the group from mingling or violating the curfew. Screening at various points in the village / community for temperature measurement

includes organizing community venues such as markets, festivals and traditions, to comply with the social spacing measures in accordance with the Social Distancing and Masking Policy. This is for preventing the spread of disease and providing registrations for the benefit of monitoring cases of infection.

**In the disease prevention and control**, the volunteers provided self-defense knowledge to the public, such as knocking on the door of each people's home to educate them on how to cope with the disease, screen and search for the people who were go to the risk areas and close to the patient. This includes people with ailments. They must be taken care and the advice was given to people who must be in the home quarantine for 14 days such as fever screening, making phone inquiries on the symptoms via line application monitoring, clarification of quarantine, keeping distance from society for vulnerable groups.

**In public relations**, the volunteers will provide knowledge and advice on methods of prevention, surveillance and control of the COVID-19 epidemic to the people in their area through various community media such as broadcasting towers, mobile public relations vehicle, and through the Line group, etc. The public relations issues include hand washing issues, wearing a mask, educating about the disease in order to prevent people in the area from shunning those who have to detain including daily reports of the situation of the COVID-19 outbreak.

#### **Problems and obstacles of Public Health Volunteers and the Prevention of Covid-19**

In performing the duties to prevent the COVID-19 outbreak, the volunteers encounter the following problems and obstacles; (1) Problems in cooperation of the people, (2) Lack of cooperation of the volunteers themselves, (3) Problems of compensation and welfares, (4) Lack of tools and equipment necessary to perform their duties, (5) Lack of knowledge and understanding of COVID-19 surveillance, control and role-playing, (6) Health problems of volunteers, (7) Overuse of information channels giving people the chance to receive false information.

#### **Conclusion and discussion of research results**

**For the roles of public health volunteers in the prevention of COVID-19**, when classified in each aspect, it was found that the **perception of disease severity** was at the high level in the same direction as the qualitative research. It was found that most of the volunteers had good perception of disease in various areas; (1) background of disease, (2) symptoms of disease, (3) danger of disease, (4) disease surveillance, (5) prevention and controlling of disease, (6) impacts on people, community, and country. These result in the volunteers to join helping in performing the activities in surveillance, prevention and control of COVID-19 in their own village and community area. This is consistent with the study of Gidado S, et.al (2014) finding that Ebola prophylactic behavior was associated with knowledge and awareness of Ebola virus infection. The goal of the public health system is to provide correct knowledge and

understanding in conjunction with the prevention of diseases.

**For the roles of public health volunteers in the prevention of COVID-19**, when classified in each aspect, it was found that the **disease surveillance** was at the high level in the same direction as the qualitative research. It was found that volunteers in each area have strict and continuous disease surveillance. Each area will define the responsibility in taking care of the households in the village / community of volunteers varied depending on the number of volunteers and the number of households in such area. The measures for surveillance include going down to the area, knocking on the door of every house to inquire about symptoms, fever screening, keeping an eye out for people not to gather or violate the Communicable Disease Act. Screening at various points in the village / community for temperature measurement includes organizing community venues such as markets, festivals and traditions, to comply with the social spacing measures in accordance with the Social Distancing and Masking Policy to stop the spread of disease and provide registrations for the benefit of monitoring cases of infection. That the results of study are like this is possibly because the volunteers are involved in surveillance that it is important to closely monitor the situation of the COVID-19 epidemic in the area. Because the outbreak of COVID-19 is a history of public health in fear and widespread epidemics, people have died if they were not treated on time.

From the implication of Epidemiological Surveillance, it means monitoring, observing, analyzing the nature of changes in disease distribution and public health events or problems. It includes the factors affecting that change continually with a systematic process and a process. It consists of collecting, compiling, analyzing, interpreting and distributing information to users for planning, formulating operational policies and the evaluation of effective disease control measures which volunteers have been involved in surveillance of the COVID-19 epidemic. This is correspondent with the study of Phitsanu Kantawee et al. (2018) finding that for the surveillance system, control and prevention of communicable diseases in the border community, people in the area have an understanding of the surveillance system and control of the disease. There is also a cooperation agreement on border disease surveillance and information exchange with one another. The results of this study could develop a system for surveillance, control and prevention of communicable diseases along the border of Chiang Khong and Huay Sai cities. The data can be analyzed in the area and to achieve results in solving problems that are suitable for the area with the development of capacity of public health personnel. Therefore, it is necessary to develop knowledge in surveillance and investigation for the border-contagious disease to be combined with the preparation of the project plan. It leads to their own future sustainable development plans.

**For the roles of public health volunteers in the prevention of COVID-19**, when classified in each aspect, it was found that the **disease prevention and control** was at the high level in the same direction as the qualitative research. It was found that the volunteers provided self-defense knowledge to the public, such as knocking on the door of each people's home to educate them on how to cope

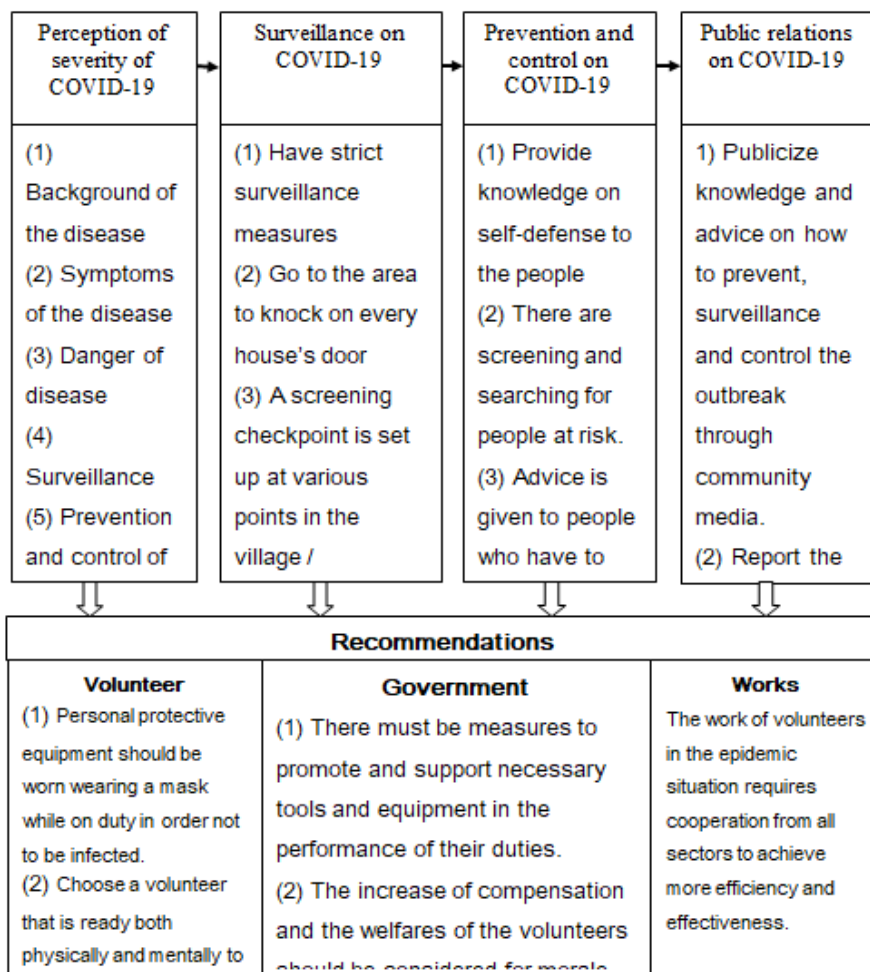
with the disease, screen and search for the people who were go to the risk areas and close to the patient. This includes people with ailments. They must be taken care and the advice was given to people who must be in the home quarantine for 14 days such as fever screening, making phone inquiries on the symptoms via line application monitoring, clarification of quarantine, keeping distance from society for vulnerable groups. The prevention is to control the causes and risk factors of disease helping people not to be exposed to the infection. In case of being exposed to the infection, the disease can be resisted. Disease prevention is divided into 3 levels; 1) Primary protection meaning preventing the body from getting infected or infected, for example, wearing mask, eating with own spoons, washing hands and using vaccines to prevent disease, 2) Secondary protection being defined as preventing post-exposure disease and 3) Tertiary protection meaning to prevent the development of the condition of complications arising from illness. As the work of the volunteers must be related with the public health service in providing support for referring to patients for medical treatment as well as providing some services that the community needs, the volunteers have to be prepared themselves in order to provide assistance services to people in the community. This is correspondent with the study of Phitsanu Kantawee et al. (2019) finding that the operation in the three border areas is an exchange of experience with one another. Each area has its own distinctive pattern of work, for example, the participation of parallel urban communities in Nong Khai Province, the use of the dam strategy to block health problems between the two countries in Tak Province, the development of cross-border patient referral system in Ubon Ratchathani and Chiang Rai Provinces, the implementation of the strategic cooperation on personnel potential development in Sa Kaeo Province. These require policy support from the management both at the ministry level and at the local level especially in surveillance and control of communicable and emerging diseases.

**For the roles of public health volunteers in the prevention of COVID-19**, when classified in each aspect, it

was found that the **public relations** was at the moderate level in the same direction as the qualitative research. It was found that the volunteers will provide knowledge and advice on methods of prevention, surveillance and control of the COVID-19 epidemic to the people in their area through various community media such as broadcasting towers, mobile public relations vehicle, and through the Line group, etc. The public relations issues include hand washing issues, wearing a mask, educating about the disease in order to prevent people in the area from shunning those who have to detain including daily reports of the situation of the COVID-19 outbreak. The volunteers have publicized to the public about the situation of the COVID-19 epidemic and advised people to know how to protect themselves from the COVID-19 infection in collaboration with public health officials to resolve the epidemic. In the community, the news of the disease was communicated to the public health workers with the provision of knowledge and understanding about infection and epidemic prevention. This is consistent with the study of Debbie Van (2010) finding that the total of 2,882 student surveys was conducted completely. Almost all survey respondents (99.6%, 2870/2882) were aware of the epidemic events in Australia and 64.2% (1851/2882) reported “no concern” or “indifference”. The Asian survey respondents seem to have faith evidently in the epidemic more seriously than the survey respondents from other countries. 75.9% (2188/2882)

of survey respondents did not change their lifestyle during the epidemic. The vast majority of survey respondents did not adopt lifestyle changes at all. Only 20.8% (600/2882) adjusted simple health behaviors such as hand cleanliness. Behavior modification is linked to anxieties and lifestyles of Asian people. If they feel unwell, most students go to university compared to the staffs. The positive answers from students point to the benefits of expanding online teaching so that they can continue their studies during the epidemic. The desire to get a pandemic vaccine is as hopeful as getting a seasonal flu vaccine three years ago.

This research creates a new proposal related to the role of public health volunteers in the prevention of COVID 19: Lessons from Thailand as shown in the diagram:



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