# Factors Related to Preventive Behavior towards COVID-19 among People in Rural Area of Thailand

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**Abstract**

This Cross-sectional descriptive study aimed to examine the level of prevention measures and factors correlated with COVID-19 prevention behavior among 166 samples during October-November 2022. The data were collected by questionnaire with reliability 0.92. All data were analyzed by descriptive statistics, and Pearson Correlation Coefficient. The results showed that most samples were female 57.23% (average age of 45 years [SD. = 13.43]), marital status 68.67%, primary education 42.77%, farmer 66.27% (average monthly income of 7,453.01 baht [SD. =8,638.43]), no position in community 74.10%, never received training on COVID-19 69.88% and received COVID-19 information on social network 74.10%. The samples had knowledge, attitude, and social support at moderate level (12.47 ± 2.06, 73.25 ± 6.77, and 64.02 ± 10.30 respectively). COVID-19 prevention behavior at high level (89.75 ± 10.41). The factors associated with COVID-19 prevention behavior were income, knowledge, attitude, and social support (r = 0.195, p = 0.12; r = .341, p<.001; r = 0.601, p< .001, and r = .414, p< 0.001 respectively).

**Keywords** attitude, COVID-19, knowledge, preventive behavior, social support

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## INTRODUCTION

Coronavirus disease (COVID-19) is an emerging infectious disease that is caused by a newly emerging novel coronavirus called Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV2) was first reported on December 1st, 2019, in Wuhan, Hubei Province, People's Republic of China, and is disseminating enough to cause a global pandemic in 2020. It is related to the SARS-CoV and Middle Eastern Respiratory Coronavirus (MERS-CoV) that emerged in the early 2000s in East Asia and the Middle East, respectively. These viruses are of zoonotic origin, with SARS-CoV2 thought to have originated in bats. It exhibits the same symptoms as an acute respiratory viral infection: elevated body temperature, cough, shortness of breath, myalgia,




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fatigue, and a feeling of tightness in the chest. In a severe case of COVID-19, rapid progression of airway disease, respiratory failure, and other complications are present. After that, the outbreak quickly spread as the initial exposure to the infection developed mild symptoms, and the incubation period reached 14 days. Therefore, it is not possible to know who has been infected immediately, as a respiratory infection is transmitted through droplets from the patient's nose or mouth. As a result, there is a high infection, widespread spread and spreading around the world. impacts on public health, the economy, and society. The World Health Organization has declared COVID-19 an international public health emergency on January 30th, 2020 and introduced measures for all countries to expedite disease control surveillance. (Bahrudin, 2023), (World Health Organization, 2020a), (Yazon and Callo, 2021)

COVID-19 situation showed On October 2022, globally that there have been 609,848,852 confirmed cases, 6,507,002 deaths. Thailand 4,674,403 patients, 32,655 deaths. And in PhateSubdistrict, Kham Ta Kla District, SakonNakhon Province ,963 patients and no reported deaths. (Phakdeekul et al., 2011), (World Health Organization, 2022b) The Ministry of Health, Thailand has practical measures to prevent the spread of COVID-19, such as wearing a face mask, washing hands with alcohol gel, screening for body temperature, social distancing, refraining from gatherings, closing offices. These were a strict and urgent measure. (Department of Disease Control, 2021) The Ministry of Public Health has set two majors post-pandemic COVID-19 prevention targets: universal self-protection and vaccination against COVID-19 in all groups and has declared on July 1st, 2022, as the first day of the pandemic's exit into endemic diseases. (Ministry of Health, 2022) Measures to prevent disease have been relaxed by voluntarily and cooperatively, such as allowing them to organize and participate in activities, wearing masks in high-risk places, hand washing stations are provided at certain locations, but the measures continue to report cases, and after recovering from COVID-19, patients may develop chronic illness or symptoms after long COVID. This affects patients' livelihoods, The patient has a lasting weakness, and certain psychological problems such as depression and anxiety. The virus may affect the central nervous system, resulting in COVID encephalopathy. There have been cases of COVID brain damage, COVID meningitis, and COVID encephalitis. A COVID infection can affect the cardiovascular system, causing signs of heart failure, shortness of breath, and rhythm disturbances. There have been reports of COVID myocarditis, or lesions of the heart's conducting system. The virus affects the gastrointestinal tract, and lesions of the liver may occur, as well as changes in its function, and a marked increase in liver enzymes, which are because of the virus and the large amount of medication that patients receive. Coronavirus can affect any organ or system in the body. (Kedthongma and Phakdeekul, 2022b), (Martirosova et al., 2021), (Rajan et al., 2021)

Knowledge, Attitudes, Social support, and Practice are essential factors for the prevention, and health promotion in the public health. They involve a variety of perspectives about the causation of the disease, severity, symptom recognition, treatment options, and outcomes. Beliefs regarding COVID-19 are based on a variety of facts, including assumptions about other viral infections, social media, prior personal experiences, and medical sources. (Zhang et al., 2020) The population's accuracy of these beliefs may impact many prevention-related behaviors. Lack of knowledge or




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most medically linked views that are inaccurate or misinterpreted may entail a risk in many situations. One of the first investigations examining beliefs and information regarding COVID-19 was undertaken in Hubei, China. One of the first studies to investigate attitudes and knowledge on COVID-19 found a significant link between views toward government measures to control the outbreak and knowledge of COVID-19 Based on the authors' findings, more knowledge and education were associated to attitudes that were more supportive toward COVID-19 preventive practices. When there are pandemic outbreaks, the commitment to prevention is also significantly influenced by the perception of risk. (Ferdous et al., 2020), (Kankarnwaratip et al., 2022), (Roy et al., 2020), (Zhong et al., 2020)

**Objectives**

The research aimed to study the level of knowledge, attitude, social support, and behavior and the factors associated with COVID-19 prevention behaviors of people in PhateSubdistrict, Kham Ta Kla District, SakonNakhon Province.

## MATERIALS AND METHODS

### 2.1. Study Design

This study was cross-sectional survey, during October 2022 to November 2022.

### 2.2. Sample Size and Sampling Population

8,553 people from Phat Subdistrict, Kham Ta Kla District, SakonNakhon Province. (Kham Ta Kla District Public Health Office, 2022) It was calculated sample size using Wayne's method. (Wayne, 1995) Then 150 samples were replaced 10 percent of missing data of 166 samples.

### 2.3. Data Collection

*2.3.1 Questionnaire*

Quantitative questionnaires on knowledge, attitudes, social support, and preventive behaviors to COVID-19. These questionnaires were derived through a review and analysis of pertinent research studies. The 86 articles are divided into 5 parts, including:

**Part 1:** General data

**Part 2:** COVID-19 knowledge

Two-choice, 1 correct answer, 0 wrong answers, 17 full scores, 3 interpretation criteria according to Bloom. (Bloom, 1975): low level knowledge (60 percent or less than 11 points), moderate knowledge (60-79 percent or 11-13 percent), high-level knowledge (80 percent or more, or 14 points or more).

**Part 3:** COVID-19 attitude

Five-scale estimation scale of 20 questions, a score of 100 points, the most agreeable – much – moderate - least, 5-4-3-2-1 score, respectively, on the positive question, and 1-2-3-4-5 points, respectively, on the negative question. Criteria for interpreting attitude scores on COVID-19 It was divided into 3 levels, using Bloom's criteria. (Bloom, 1975) These include high-level attitude (80 points or more), moderate attitude (60 – 79 points), low-level attitude (under 60 points).

**Part 4:** Social Support

Five-scale question, with a full score of 90. Rating Most agreed-more-moderate-few-least scored 5-4-3-2-1 points respectively on positive questions and 1-2-3-4-5 points respectively on negative questions. The criteria for interpreting social support scores were divided into three levels by Bloom's criteria. (Bloom, 1975) 72 points or more), moderate attitude (54-71 points), low-level attitude (54 points or more).

**Part 5:** COVID-19 Prevention Behavior

The question was a valuation measure, with 5 units of measure: regular, frequent, frequently. Sometimes, never a full score of 110 points, the most agreeable – much – moderate – less – least - scores, 5-4-3-2-1 points respectively on positive questions, and 1-2-3-4-5 points, respectively, on negative questions interpreting the level of behavior against COVID-19. It was divided

into three levels using Bloom's criteria. (Bloom, 1975) high level of defensive behavior (88 points or more) moderate defensive behavior (66- 87 points) low level of protective behavior (under 66 points).

*2.3.2 Tool Quality Inspection*

The questionnaire was checked the content by five qualified persons. The Index of Item-Objective Congruence (IOC) was 0.93 (0.60 – 1.00) the confidence of the questionnaire using Cronbach's alpha coefficient formula. The reliability was 0.90 (0.72-0.93) as shown in Table 1.

**Table 1. Results of reliability (Cronbach Alpha) of the questionnaire of COVID-19 knowledge COVID-19 attitude Social Support and COVID-19 Prevention Behavior**

| Questionnaire | Cronbach Alpha |
|---|---|
| COVID-19 knowledge | .718 |
| COVID-19 attitude | .730 |
| Social Support | .932 |
| COVID-19 Prevention Behavior | .768 |
| Total | .902 |

**2.4. Data analysis**

Analyzed data were general data, knowledge levels, attitudes, social support, and behaviors in preventing COVID-19 by Frequency, Percentage, Mean, Standard deviation, Minimum and Maximum. In addition, data were analyzed factors that correlated with COVID-19 prevention behavior by Pearson Correlation Coefficient and Correlation Levels have been divided using the criteria of Hinkle. (Hinkle et al., 2003), (Phakdeekul, W., &Kedthongma, W. 2021)

**2.5 Ethical consideration**

This research was considered research ethics in humans by the Human Research Ethics Committee of Kasetsart University ChalermphrakiatSakonNakhon Province Campus, Thailand. No. KUREC-CSC65-007, September 19, 2022.

## RESULTS

**3.1 General data**

Most of the samples were female 57.23 percent, an average age of 45 years (SD. = 13.43), marital status 68.67 percent, primary education 42.77 percent, occupation 66.27 percent farmers, and average income 227.92 USD. Per mount (SD =8,638.43), No position in the community, 74.10 percent never being trained for COVID-19. 69.88% and channels to receive information about COVID-19. On the internet, social media.74.10 percent, as shown in figure 1



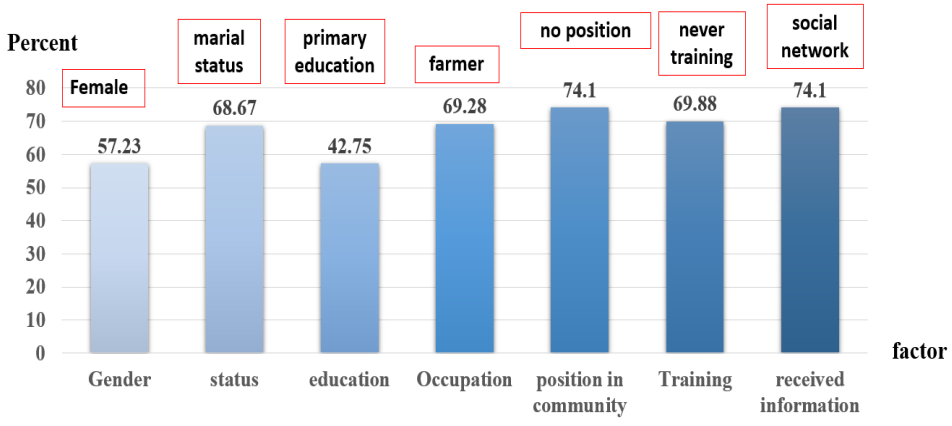


**Figure 1. general data (n=166)**

### 3.2 Level of knowledge, attitude, social support, and preventive behavior

The knowledge of COVID-19 among people showed that most of samples had moderate at 50 percent (Mean = 12.47, SD = 2.06) scored a minimum of 6 points and a maximum score of 16 points. The attitudes of COVID-19 among people showed that samples had moderate level at 80.72 percent (M = 73.25, SD = 6.77), with a maximum score of 90 points and a minimum score of 56 points,Thesocial support associated with preventing COVID-19 among people showed that samples had moderate level at 68.68 percent (Mean = 64.02, SD = 10.30), a minimum score of 26 points, a maximum score of 86 points. The COVID-19 prevention behavior among people showed that the samples had high level at 53.01 percent (Mean = 89.75, SD = 10.41), the lowest score of 54 points, the highest score of 110 points, as shown in figure 2

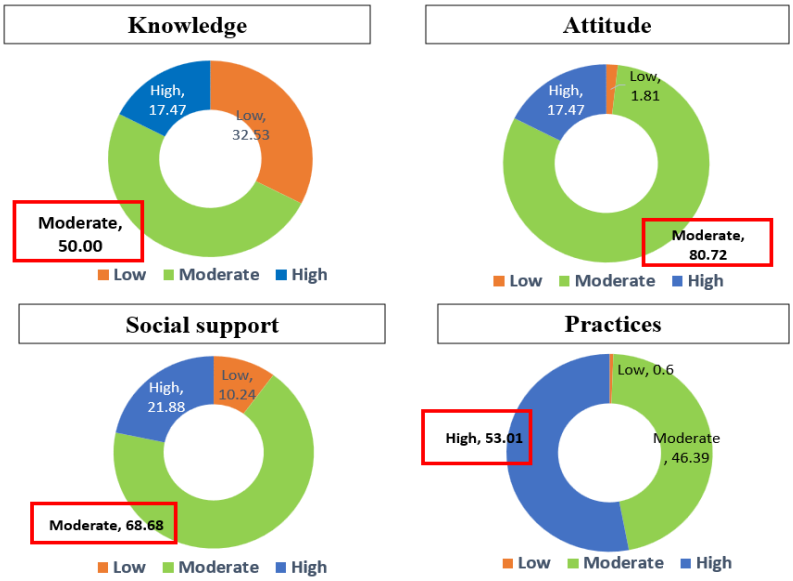


**Figure 2. The level of knowledge attitudes, social support, and preventive behavior about COVID-19 (n = 166)**

### 3.3 Coefficient of correlation to COVID-19 prophylactic behavior

The factors associated with COVID-19 preventive behavior were income with statistically significant at .05 level (r = 0.195, p = 0.12) and knowledge, attitudes, and social support statistically significant at .01 level (r = .341, p<.001; r = 0.601, p< .001; r = .414, p< 0.001, respectively), as shown in Table 2.

**Table 2. Coefficient of correlation to covid-19 preventive behavior**

| variable | COVID-19 prevention behavior | | |
|---|---|---|---|
| | Correlation coefficient (r) | p-value | relation level |
| Age | 0.146 | 0.61 | - |
| Income | 0.195* | 0.012 | Very low |
| Knowledges | 0.341** | <.001 | low |
| Attitudes | 0.601** | <.001 | moderate |
| Social supports | 0.414** | <.001 | low |

Note * Correlation is significant at.05 level, ** correlation is significant at.01 level.

## DISCUSSION

Personal characteristics related to COVID-19 prevention behaviors of people in PhateSub-district, Kham Ta Kla District, SakonNakhon Province. The monthly income was positive correlation with COVID-19 preventive behavior. This indicates that people with high incomes will be high COVID-19 prevention behavior, possibly due to prevention or treatment of COVID-19. As opposed to low with income, money to spend on their daily lives or enough for COVID-19 prevention equipment, which consistent with. (Luanloy, 2022), (Sriratanaprapat and Klommek, 2021)

Knowledge of COVID-19 was moderate level. The COVID-19 was an emerging disease which had been pandemic since late 2019. Access to information, of which there was a lot of information, may vary depending on where it was obtained from Ministry of Health The media on various channels has made it clear that there was a clear understanding of this virus. When considering the level of knowledge about. It was found that there were moderate. Based on the least average score, the average incubation period for COVID-19 was 3-5 days and can last up to 14 days, eating with a medium spoon can prevent contracting COVID-19, and washing hands with soap and water could prevent COVID-19. Which is currently recommended by the Ministry of Health to treat endemic diseases in accordance with universal prevention measures. (Ministry of Health, 2022) But this was inconsistent with the study by Al-Hanawi et al.which found that knowledge about people in the Kingdom of Saudi Arabia was good. (Al-Hanawi et al., 2020)

Attitudes of COVID-19 was moderate level. Because the people receive information daily. The results of this study were consistent with the study of knowledge, attitudes, and behavior of people in the Kingdom of Saudi Arabia, found that attitude about COVID-19 of the samples was good level. (Al-Hanawi et al., 2020)

The social support for COVID-19 prevention was moderate level. That district and subdistrict had management system, knowledge, countermeasures, quality of life management and village Health volunteers (VHVs), knocked on the door, The VHVs will be responsible for conducting surveys to risk exposure group entering the area and to educate about COVID-19 and recommended preventive practices by VHVs will be responsible for 10 families. (Department of Health Services Support, 2021), (Krassanairawiwong et al., 2021) These results consistent study of crisis management systems and emerging disease management models (COVID-19) in PathumThani province, Thailand found that the spread of COVID was a form of implementation of policies and laws. (Suepsak, 2021) Integrated joint operations across multiple sectors, including the public sector and the public sector, vary by area, but are all subject to the ministry of health's announcement and the study of factors affecting COVID-19 prevention behavior in Bangkok, Thailand of Sribunruang et al. which social support was an important factor. (Sribunrueng et al., 2020)

The correlation analysis showed that knowledge and attitude about COVID-19 relate to behaviors to protect themselves from COVID-19 with statistically significant (r = .341, .601 and .414, respectively) at .01 level. That means if people had knowledge and attitudes about COVID-19 at high level. They would be more behaviors to protect themselves from COVID-19. Which is consistent with the results of knowledge and attitudes study of Chinese citizens. (Zhong et al., 2020) In addition, positive correlations of behavior to protect themselves from COVID-19 and studied of factors correlated with behavior to protect themselves from COVID-19, in Saudi Arabia,

which it found that knowledge and attitude were positively correlated with COVID-19 prevention behavior. (Al-Hanawi et al., 2020) And This agreed with the study of Mohammed Hasan et al. that found that knowledge was associated with preventive surveillance of COVID-19. Therefore, there should updated knowledge and improvement of knowledge for prevent COVID-19. (Hasan et al., 2021) That is knowledge, Attitude and behavior led to good behavior and practices. (Bloom, 1975) The positively correlation of social support and preventive behavior from COVID-19 (r = .414), Showed That got supporting including Medical and Public Health Staff Group from the district health promotion hospital, village health volunteers and community leaders, who offered for educating, advising, and informing through knock-on-the-door activities of the Ministry of Health Department of Health Services Support. (Department of Health Services Support., 2021) It is consistent with study of factors affecting prevention behaviors for COVID-19 infection. Sribunrueng et al. found that social support factors influenced COVID-19 prevention behavior. (Sribunrueng et al., 2020), (Phakdeekul, 2017)

These result support the need for more community engagement of and local leaders in the promotion of adherence to strict social distancing methods. Community leaders, health workers, and village health volunteers (VHVs) should be informed about the scale of the pandemic and its consequences. Knowledge of the transmission of the virus should be communicated clearly, and several misconceptions should be clarified, and rumors promptly dispelled. (ChadaphimPhotphanloet et al., 2022), (Chaiyapet et al., 2022), (Kedthongma and Phakdeekul, 2022a)

## CONCLUSION

People have moderate knowledge, attitudes,social support, and COVID-19 prevention behavior is high. It found a positive correlation between income, knowledge, attitudes, and social support for COVID-19 prevention behavior, which can be used as a guideline for policymaking, training activities, campaigns, and promoting the prevention and control of the COVID-19 pandemic in the community on the aftermath of the announcement. COVID-19 is an endemic disease that more effective, and organizations should have thorough knowledge support and should adequately support budgets, materials, and equipment. Surveillance models for emerging communicable diseases should be researched and developed,from the participation of network parties at the sub-district level.

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