

The Effects of Long COVID on Thai Teenagers

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ABSTRACT

The post-COVID-19 condition, also known as the Long COVID syndrome, was first widely acknowledged in the scientific and medical worlds. Since it affects COVID-19 survivors at all disease severity levels, including younger individuals, children, and those who are not in hospitals, this illness is poorly understood. Presently, there is a limitation to the definition of the post-COVID condition. This study would fill in this gap by surveying the most common symptoms among Thai teenagers (10–24). This data is gathered by the online survey: Google Form and statistically analyzed through percentages. Consequently, the majority of symptoms are aches and pains (37.037%), asymptomatic (31.579%), depression (18.324%), and bedridden symptoms (6.324%) as a result of the prolonged quarantine. In terms of drug complications, the majority of respondents had none (89.330%), acid reflux (4.715%), and glycemic instability (1.489%). In terms of physical health effects following illness, the majority of respondents reported symptoms such as shortness of breath (30.615%), fatigue (27.227%), chronic cough (13.802%), insomnia (11.543%), and so on. This study shows that Long COVID has an impact on the respondents' daily lives at levels 1-10 on level 7 (15.960%), level 5 (13.965%), and level 13.965%.

Keywords: Long COVID, Thai teenager, Thailand

INTRODUCTION

Coronavirus disease 2019 (COVID-19) has spread significantly worldwide and many people are suffering from this pandemic due to the effects of physical health, mental health, and economic system in their own countries. (Lateh et al., 2021) This respiratory infection was caused from the SARS-CoV-2 virus which initially emerged in Wuhan, China in December 2019 by the animal reservoir (Lateh et al., 2021). Importantly, Coronaviruses severely digest through the respiratory system and SARS-CoV-2 is uninterruptedly changing. (Tang et al., 2020) In addition, because of airborne dispersion, small droplets or contact with infected surfaces are perhaps the most common ways for this disease to transmit between person to person.

Common symptoms of COVID-19 include fever, dry cough, fatigue, and loss of smell and taste. There are a variety of different symptoms of COVID-19 ranging from no symptoms to severe illness. After the first outbreak occurred in China, the World Health Organization (WHO) declared a Public Health Emergency of International Concern (PHEIC). Due to the COVID-19

pandemic, the number of deaths and infections increased around the world. On 13 January 2020, COVID-19 in Thailand was the first recorded case outside of China. Meanwhile, the number of Thai citizens who died from this disease was recently reported at 29,472 on 15 May 2022. (Prevention, 2022; Publishing, 2022)

However, this pandemic can be prevented by keeping distance between people, getting vaccinated, and wearing a face mask to prevent infection and avoid spreading. In Thailand, the government has been motivating Thai citizens with Fit from Home (FFH) which is a guide published by Thai Health Promotion Foundation. This helps citizens to handle this recent pandemic and boost their immune system by doing some physical activities. (Hammami, Harrabi, Mohr, & Krustup, 2020; Katewongsa, Widyastaria, Saonum, Haematulin, & Wongsingha, 2021)

Patients infected with COVID-19. After being infected, most patients will have ongoing conditions related to COVID. Which is called the Long COVID-19 symptom. At first it may be a symptom that most people do not know and do not pay attention to, but the symptoms become more involved in daily life. (Taribagil, Creer, & Tahir, 2021)

From the current situation have found symptoms or complications, whether physical psychological and symptoms caused by complications from medication while undergoing treatment for COVID-19. Many respected research institutes have recognized it as a result of COVID-19 infection, known as Long COVID-19 at the time. Studies have shown that Long COVID-19 symptoms can affect COVID-19 patients ranging from mild to severe symptoms to many organs including various systems in the body such as the respiratory system, cardiovascular system, nervous system, digestive system, and musculoskeletal system. (Crook, Raza, Nowell, Young, & Edison, 2021)

The primary symptoms during Long COVID-19 with the most common physical

complications are fatigue, difficulty breathing, muscle pain, joint pain, headache, cough, and chest pain. Some patients have changes in smell, taste and some diarrhea. Symptoms are caused by difficulty from the medication during treatment. There may be side effects caused by receiving drugs such as steroids. Symptoms that may have been seen after returning home such as stomach pain and appear to be suffering from acid reflux. Also, unstable sugar or diabetes. (William Ericson-Neilsen)

The mental health symptoms, the unpredictability of Long COVID-19 will affect patients in many areas, including social and schooling. Which tends to cause psychological distress Research has shown that up to a third of people may experience anxiety and mood disorders six months after their first COVID-19 infection. There is evidence to suggest the increasing mental health impact of the epidemic on patients who have been exposed to COVID-19. The outbreak continues to spread throughout various places. Including educational institutions, what happened more than raising awareness or approving holidays for people infected with COVID-19 is anxiety and mood swings which have always been a part of life. Although, the COVID-19 pandemic has driven these things into the spotlight. Studies have found that the most common primary mental health symptoms associated with Long COVID-19 were anxiety. Depression or other mood changes, trouble concentrating, or memory. Difficulty dread of sleeping illness have traumatic memories of health feelings of loneliness, (Katewongsa et al., 2021) symptoms usually appear 4 to 12 weeks after exposure, which can improve or worsen over time. Or there is a recurrence again. (Services; Sivan & Taylor, 2020)

The symptoms associated with SARS-CoV-2 infection in young people are rarely unusual or severe. Although the risk of contracting COVID-19 in the short term is low, that does not mean there are no long-term symptoms of SARS-CoV-2 or Long COVID-19 infection. Long COVID-19

symptoms, most studies have been done in adults. More than half of those admitted to hospital have had long-term residual symptoms of COVID-19, and little information about long-term COVID in young people is currently available. Symptoms Including impact on life this survey research aims to explore the duration, symptoms and impacts that occur in the Thai young population. (Fainardi et al., 2022)

Several studies have examined the symptoms and effects of Long COVID-19 on other countries' populations. However, there is no published information on the common symptoms and effects of Long COVID-19 among teenagers in Thailand. This study aims to fill that gap by surveying the most common Long COVID-19 symptoms in Thai teenagers. Moreover, this study investigates the effect of this on teenagers' daily lives, and this would be beneficial for the medical profession to cure patients accurately.

METHOD

Study design

From a survey of Long COVID symptoms of people infected with Covid-19 who are 10-24 years, this survey aims to study about Long COVID symptoms of people who have been infected with Covid-19, Side effects such as prolonged quarantine and complications from drug use, etc. This survey started on May 18, 2022 until May 28, 2022. This survey contains 15 questions which will take approximately 3-5 minutes to complete. This survey reached people who had been infected with Covid-19 mostly through the Line application, and

directly through the people they knew who had been Long COVID.

From the survey “The effects of Long COVID on Thai teenagers” 99.526% of respondents agreed to the survey criteria and 0.474% of respondents agreed to the survey criteria. To identify symptoms and other factors that may affect Long COVID symptoms, analysis of this questionnaire was limited to respondents exposed to covid-19 between the ages of 10-24. There were a total of 422 respondents from the questionnaire. A total of 422 responses from Google Forms on May 28, 2022. The following responses have been removed from the dataset. Those who refused to use the data (n=2) and who had never been infected with COVID (n=19), resulted in 401 usable data sets for the respondents which is 93.02% female and male 6.99%. There are 3 age ranges, the age range 10-13 years 3.34%, the age range 14-16 years 26.19%, the age range 17-19 years 51.87%, and the age range 20-24 years 18.70%.

RESULT

1. General information of sample characteristics

Through their responses on the Google form questionnaire set, 422 Thai teenagers aged 17–24 years old, which were divided into 10–13, 14–16, 17–19, and 20–24, provided online survey data. This data showed the consent of sample characteristics was 99.53%, which was willingly analyzed. Among the sample characteristics, 93.02% were collected from males and 6.98% from females in Thailand. Most of the sample teenagers were 17-19 years old, with 51.87%, and the least occurred at 10-13 years old, with 3.24%.

Table 1. General information of participants.

Variable	Percentage
Overall	100
Consent (n= 422)	
Allow	99.526
Refuse	0.474
Infected with COVID-19 (n=420)	
Ever	95.476
Never	4.524
Gender (n=420)	
Male	6.983
Female	93.017
Age Ranges (year) (n=420)	
10-13	3.242
14-16	26.185
17-19	51.870
20-24	18.703

2. Medical information of sample characteristics.

2.1 COVID-19 Vaccination report

The survey found that the vast majority of respondents (74.314%) received 2 doses of the vaccine. Followed by 21.945% of respondents who received 3 doses of vaccine. Later, it was a total number of respondents who received 1 dose of vaccine, accounting for 1.995% and the lowest vaccination history for respondents, accounting for 1.746%, which was not vaccinated.

2.2 Intolerances report of vaccine

The record of drug allergy from a survey of Thai teenagers, there was a drug allergy of 4.630% of respondents and 92.361% of those who were not allergic to coronavirus medication. Drug allergy which were Vancomycin, Andrographis paniculata, Primolut N, Cefuroxime, Penicillin, and Miotin were the least likely 0.231%, while the vast majority of drug allergies were to Amoxicillin and Sulfonamides, the survey showed that there were more drug intolerances than those who are allergic to coronavirus drugs.

2.3 Infect type report

The survey found that the majority of coronavirus cases (60.848%) were infected with unknown strains of coronavirus. Followed by 28.687 % which was infected with the Omicron strain. Lastly, respondents who were infected with the Delta strain COVID-19 accounted for a ratio of 8.229%, and the last one is the respondents who are infected with beta and alpha covids with a ratio of 1.496% and 0.748%, respectively.

2.4 The severity of COVID-19 symptoms

48.130% of respondents were severely affected by COVID-19 symptoms, while moderate COVID-19 symptoms were found in 51.870%.

2.5 Duration of illness

The survey found 72.569% of sample characteristics had a duration of less than a month, 23.691% had been severe in symptoms for one to three months, and respondents were sick for more than 3 months, there are 3.741%. Indicating that

the majority of respondents will have a duration of about 1 month.

2.6 Therapeutic method

The survey found that the majority of coronavirus cases (83.54%) were treated by home isolation, followed by hospitalization at 8.479%. The least part of the ratio of 7.98% is hospital admissions.

2.7 A drug used to treat

According to the survey, the vast majority of coronavirus cases (37.5%) are on symptomatic medication. Following by, the use of Andrographis paniculata with a ratio of 30%. Later, it was the drug Favipiravir accounted for 20.75 percent, and the use of medications received by respondents was the least with a ratio of 11.75%, meaning no medication.

3. Effects of Long COVID-19

3.1 Physical health effects after illness

Physical health effects after illness were found that 57.8% of respondents had breathlessness, which was the highest of all effects, 51.4% had fatigue, 26.1% had insomnia and chronic cough, 21.8% had no fault. normal and the remaining effect is less than 1%.

3.2 The effects of prolonged quarantine

This study found that 37% of sample Thai teenagers had pains and aches which is the highest number of all effects. 31.5% of respondents were depressed and 18.3% were unaffected. Patients who had Clinomania 6.2% and 1.75% had boredom. The remaining effects were less than 1%.

3.3 Level of impact on daily life

The level of impact of COVID-19 on Thai teenagers daily lives in all 10 levels, with the third highest impact level being level 7 representing 15.96%, followed by an equal quantity of level 5 and 6 in the amount of 13.96% and level 3, accounting for 13.46%

3.4 Complications from drug use

Complications from drug use of respondents showed that asymptomatic Thai teenagers accounted for 89.33%, acid reflux was 4.71%, unstable glucose was 1.48%, gastritis was 0.99%, and anorexia accounted for 0.74%.

Table 2. Medical information for COVID patients.

Variable	Percentage
Overall	100
Vaccination (n=420)	
Never	1.746
1 dose	1.995
2 doses	74.314
3 doses	21.945
Drug allergy (n=420)	
Not allergic to drugs	92.361
Allergic to drugs	4.630
Amoxicillin	0.926
Vancomycin	0.231
Andrographis paniculate	0.231
Sulfonamide	0.694
Primolut-N	0.231
Cefuroxime	0.231
Penicillin	0.213
Mictin	0.231
COVID-19 strain (n=420)	
Unknown	60.848
Omicron	28.678
Delta	8.229
Beta	1.496
Alpha	0.748
Severity of symptoms (n=420)	
Slightly	48.130
Averagely	51.870
Duration of COVID-19 infection (n=420)	
Less than 1 month	72.569
1-3 month	23.691
More than 3 months	3.741
Remedy (n=420)	
Home isolation	83.541
Hospital (Hotel for cure COVID-19)	8.479
Hospital	7.980
Drugs used (n=420)	
Naturopathy	11.750
Andrographis paniculate	30.000
Favipiravir	20.750
Symptomatic treatment	37.500

Table 3. Effects of Long COVID-19

Variable	Percentage
Overall	100
The effects of prolonged quarantine (n=420)	
Asymptomatic	31.774
Depression	19.299
Stick to bed	6.238
Pressure sores	0.390
Aches	37.037
Debility	0.975
Boring	1.754
Coughing	0.585
Runny nose	0.390
Sore throat	0.585
Uncomfortable	0.195
Anorexia	0.195
Dizzy	0.195
Tachyphemia	0.195
Diarrhea	0.195
Drug-related complications (n=420)	
Asymptomatic	89.578
Stomach ache	0.993
Gastroesophageal reflux disease	4.715
Unstable sugar	1.489
Aphthous stomatitis	0.248
Bitter in the mouth	0.248
Anorexia	0.744
Eyes turn to blue	0.248
Suffocate	0.248
Puffy face	0.248
Vaginal Discharge	0.248
Sore throat	0.248
Oversleep	0.248
Head ache	0.248
Diarrhea	0.248

Physical health effects (n=420)	
Asymptomatic	8.908
Asthma	30.615
Debility	27.227
Fibrotic-Interstitial Lung Disease	0.125
Heart disease	1.004
Thrombosis	0.125
Sepsis	0.125
Sleepless	11.543
Chronic cough	13.802
Loss of taste	2.384
When coughing, they smell the blood.	0.125
Head ache	0.251
Anorexia	0.125
Forgetful	0.251
Sweating during sleep	0.125
Voice changed	0.251
Sore throat	0.376
Dizzy	0.627
Hair loss	0.753
Loss of smell	0.753
Hay fever	0.125
Rash	0.251
Missed Period	0.125
Level of impact on daily life (1 - 10) (n=420)	
1	2.244
2	6.983
3	13.466
4	11.970
5	13.965
6	13.965
7	15.960
8	10.474
9	3.990
10	6.983

DISCUSSION

In this study, the researcher discussed the research findings in relation to the research objectives as follows: Our study discovered that most COVID-19 patients experienced pain and aches as a result of prolonged quarantine (Table 3). As our study explored, the majority of the surveyed Thai teenagers who received two doses of vaccine (Table 2) were free of allergy to the drugs used to cure coronavirus (Table 2). However, the majority of respondents we surveyed did not know what strain of coronavirus they were infected with (Table 2). The majority of Thai teenagers surveyed had moderate to severe symptoms (Table 2) and had been infected for less than one month (Table 2). They were placed in home isolation (Table 2) and given symptomatic medication (Table 2). The majority of them had difficulty breathing after being infected with COVID-19 (Table 3). The limitations of our study Studies have different methods of collecting data. Answers to online questionnaires may affect the overall outcome of the study. Especially since online questionnaires often overestimate the level of information.

CONCLUSION

This study aims to examine the long-term COVID-19 symptoms that frequently occur

in Thai teenagers. The current research shows that most people have dyspnea, debility, and chronic cough after being infected by COVID-19. Moreover, this study also provides information on the effect of curing by medicine and quarantining: this pandemic usually affects their mental health more than their physical health during the treatment period and after recovering from COVID-19. Importantly, teenagers ranked the level of effect this pandemic has had on their daily lives at 7 out of 10. Therefore, these findings clarify the most common Long COVID-19 symptoms and their effects on people: Physical health and mental health. Being able to correctly treat patients would help the medical field.

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REFERENCE

1. Crook, H., Raza, S., Nowell, J., Young, M., & Edison, P. (2021). Long covid-mechanisms, risk factors, and management. *BMJ*, 374, n1648. doi:10.1136/bmj.n1648
2. Fainardi, V., Meoli, A., Chiopris, G., Motta, M., Skenderaj, K., Grandinetti, R., . . . Esposito, S. (2022). Long COVID in Children and Adolescents. *Life (Basel)*, 12(2). doi:10.3390/life12020285
3. Hammami, A., Harrabi, B., Mohr, M., & Krstrup, P. (2020). Physical activity and coronavirus disease 2019 (COVID-19): specific recommendations for home-based physical training. *Managing Sport and Leisure*, 27(1-2), 26-31. doi:10.1080/23750472.2020.1757494
4. Katewongsa, P., Widyastaria, D. A., Saonuam, P., Haematulin, N., & Wongsingha, N. (2021). The effects of the COVID-19 pandemic on the physical activity of the Thai population: Evidence from Thailand's Surveillance on Physical Activity 2020. *J Sport Health Sci*, 10(3), 341-348. doi:10.1016/j.jshs.2020.10.001
5. Lateh, A., Pasunon, P., Dolah, K., Kongjam, P., Chema, S., Panomwan, P., & Lateh, A. (2021). COVID-19 Preparedness and the Anxiety of Thai Citizens. *Kesmas: National Public Health Journal*, 16(3). doi:10.21109/kesmas.v16i3.4375
6. Prevention, C. f. D. C. a. (2022). COVID-19: Syntoms. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html?fbclid=IwAR2wmmuNnAS4iVT3Ud4RbxIjaHcjo08UJtP6XghzDQcujFIRyGFduoLr-MI>
7. Publishing, H. H. (2022). Symptoms, spread and other essential information about the coronavirus and COVID-19. Retrieved from https://www.health.harvard.edu/diseases-and-conditions/covid-19-basics?fbclid=IwAR2wtu9_uZkIV6XopPZ4hh-xSKftJNiS8mr6MfYa-J-81by01r5SYDSVhck
8. Services, D. o. M. Long Covid: the symptoms and tips for recovery.
9. Sivan, M., & Taylor, S. (2020). NICE guideline on long covid. *BMJ*, 371, m4938. doi:10.1136/bmj.m4938
10. Tang, X., Wu, C., Li, X., Song, Y., Yao, X., Wu, X., . . . Lu, J. (2020). On the origin and continuing evolution of SARS-CoV-2. *Natl Sci Rev*, 7(6), 1012-1023. doi:10.1093/nsr/nwaa036
11. Taribagil, P., Creer, D., & Tahir, H. (2021). 'Long COVID' syndrome. *BMJ Case Rep*, 14(4). doi:10.1136/bcr-2020-241485
12. William Ericson-Neilsen, M. A. D. K., MD, PhD. <Steroids Pharmacology, Complications, and Practice Delivery Issues.pdf>

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