Health Impact of Long Covid among Student Teachers, Kasetsart University

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Abstract

This study employed a mixed methods approach, consisting of two distinct phases. Phase 1 aimed to investigate the health consequences of long Covid among student teachers who had been diagnosed with SARS-CoV-2 infection, as well as the factors linked with long Covid problems. The data collection process involved utilizing the Taro Yamane, (1973) formula to determine the sample size, which was conducted with a 95% confidence level. The population under consideration consisted of student teachers in their first to fourth year of study, as specified in the Yamane table. The total sample size was determined to be n=286, and the sampling procedure employed stratification based on the relative proportions of student teachers in each of the four academic levels. Phase 2 refers to the second stage in a process. In order to gain further insights into the enduring health consequences of instructing student teachers at Kasetsart University, this study aims to employ comprehensive interviews with a sample population. The objective is to scrutinize intricate details pertaining to the health ramifications of long Covid, while also explore the adverse effects of long Covid on student teachers at Kasetsart University. Based on the findings, seven categories of symptoms can be explored.

Keywords: long Covid, COVID-19, student teacher

1. Introduction

The global outbreak of the COVID-19 pandemic has had a significant impact on the overall health and well-being of persons across the globe, including the population of Thailand. The report issued by the Department of Disease Control, Ministry of Public Health, (2023) covers the period from April 1, 2021 to July 29, 2023. The current status of COVID-19 in Thailand reveals that the cumulative number of infections stands at 4,726,154, while the cumulative number of deaths is reported to be 34,331. Moreover, the vaccination efforts have reached a significant milestone, with 144,951,341 individuals having received at least one dose of the vaccine. Among them, 57,233,919 people have completed the recommended two-dose regimen, and 53,797,348 individuals have received at least three doses. Notably, a total of 33,987,047 people has been fully vaccinated. Based on the available data provided by the World Health Organization (WHO), (2022) it may be inferred that a notable proportion, ranging from 10% to 20%, of individuals diagnosed with COVID-19 will experience various intermediate and long-term consequences, when the primary illness has been resolved. The combined intermediate and long-term consequences are commonly known as "long Covid" or "post-COVID-19". It is advisable to use caution and implement preventive measures during the period of recuperation from an acute sickness. The human body will persist in displaying some symptoms. The duration of these symptoms persists for a minimum of six to seven months. The phenomenon known as long-term post-infection residual syndrome of COVID-19 pertains to the presence of physical or mental symptoms that endure for a period beyond 12 weeks subsequent to the initiation of acute disease (Thangkratok et al., 2022).

The persistence of symptoms following COVID-19 infection, commonly referred to as long Covid, can be attributed to the creation of specific antibodies by the body during the course of the illness. Furthermore, the process of caulescence is characterized by the binding of certain protein cells to certain organs inside the human body, resulting in the detrimental destruction of many organ systems. This condition exhibits a range of traits that may differ or be distinct for each individual. The lingering impacts of long Covid are observed across several bodily systems, encompassing the respiratory system, brain system, digestive system, cardiovascular

system, and vascular system. The reintegration of certain recovered individuals into their former lifestyles is impeded. The probability of occurrence, ranging from 30% to 50%, is associated with the number of individuals who have achieved recovery from COVID-19. The demographic group most susceptible to experiencing long-term symptoms of COVID-19, sometimes referred to as long Covid, comprises older individuals, individuals with obesity, individuals with congenital diseases, and those with compromised immune systems. Individuals who have contracted COVID-19 display significant symptoms. The likelihood of developing long Covid is expected to be higher among those belonging to this particular group compared to those who are infected but remain asymptomatic. However, for the cohort of patients exhibiting moderate symptoms or subclinical infection, the mortality rate was shown to be comparatively lower. Furthermore, it is worth noting that there exists a potential for the development of a chronic condition known as long Covid (Melina et al., 2021).

The primary physical manifestations of long Covid involve coughing during speaking, weariness, dyspnea, myalgia, cephalalgia, arthralgia, and impaired olfactory perception, which collectively represent the most notable symptoms. The research conducted by Raveendran et al., (2021) investigated the relationship between changes in flavour perception and the occurrence of diarrhea. The presence of prolonged coughing during speech may be ascribed to physiological manifestations occurring within the body, encompassing. Hong, Kim, & Park., (2021) found that persons who are affected by long Covid demonstrate increased levels of anxiety in relation to their environment and the economic conditions when they cough in public. The diminished capacity to continue work at optimal levels upon re-entering the workforce may lead to a decline in work productivity and output, so negatively impacting the local economy and increasing the COVID-19 crisis. The influence goes beyond the territorial boundaries of Thailand, encompassing numerous global areas.

Department of Medical Services, Ministry of Public Health, (2022) in Thailand conducted a long-term health impact survey on individuals who have experienced illness from COVID-19. The purpose of this survey was to gather information regarding the care planning for patients with long Covid, particularly those who present with atypical symptoms or whose post-treatment health outcomes are compromised. The Department of Medical Services has published survey findings on its official website. During the period spanning from September 12 to October 7, 2021, a notable occurrence was the identification of persons who had infected the COVID-19 virus. Among the respondents, it was observed that 74.66% identified as female, while 25.31% identified as male. The average age of the respondents was determined to be 35.51 years. Furthermore, it was observed that the majority of these individuals had mild to moderate symptoms associated with COVID-19. Based on the findings of the survey, the seven most prevalent symptoms associated with long Covid were fatigue, dyspnea/ shortness of breath, sleeplessness, cough, headache, hair loss, and muscle discomfort. These symptoms were ranked in ascending order from minor to moderate severity. A significant proportion of individuals will manifest symptoms associated with long Covid. According to the Institute of Medical Research & Technology Assessment, (2022) it is observed that, on average, more than seven symptoms tend to persist without resolution.

Therefore, this demonstrates that the long-term repercussions of the long Covid condition are more widespread than was anticipated and will hinder their capacity to live their daily lives, maintain relationships, and work, in addition to increasing the financial burden on the patient, their family, and the nation over the long run. As a consequence, the researcher is interested in studying the effects of long Covid and was able to collect data that will be used in the future to promote the health of student teachers.

2. Methodology

2.1 Study Design

This study employs a combination of techniques consisting of both qualitative and quantitative research (Mixed method).

The two phases of this research objective are as follows;

Phase 1: Survey study, the participants selected based on the inclusion and exclusion criteria set for the study. Once the participants have been selected for the study, the investigator follows the study to assess the exposure and the outcomes (Setia, 2016). A survey was conducted employing a questionnaire to get information from student teachers regarding the health implications associated with long Covid.

Phase 2: This study aims to investigate the impact of student teachers at Kasetsart University on their long-term health outcomes in relation to long Covid. Conducting in-depth interviews with the selected participants in order to gain further insights into the impact of long Covid on individuals' health.

2.2 Study Population and Sampling

Phase 1: The population in general consists of student teachers. Faculty of Education at Kasetsart University is comprised of 281 first-year students, 295 second-year students, 231 third-year students, and 205 fourth-year students, for a total of 1,012.

A sample was drawn from the calculation using the Taro Yamane formula (Yamane, 1973) with a 95% confidence level, the population is the 1st to 4th year student teachers from the Yamane table, totalling 1,012 individuals. The total sample size is 286 individuals, and sampling was stratified according to the proportion of students in each of the four grade levels. First year population of 281 = 28% = 80 individuals, second year population of 295 = 29% = 83 individuals, third year population of 231 students = 23% = 66 individuals and fourth year population of 205 = 20% = 57 individuals.

Phase 2: The study sample consisted of student teacher who represented undergraduate students in each Faculty of Education, Kasetsart University. Thirty people who had COVID-19 were selected by a stratified sampling. Student teachers in the bachelor's degree program, three courses, and three departments are divided, including the Department of Physical Education, Department of Education and Department of Vocational Education. Purposive sampling according to volunteer inclusion criteria. Data were collected by using in-depth interviews to collect data with teacher students, who had COVID-19 (n=30), divided into 10 people per department, took about 30-45 minutes by face-to-face interview, where the sample group was not the same group as phase 1.

2.3 Data Collection/ Data Collection Tools

After obtaining sanction from the Kasetsart University Research Ethics Committee, the researcher contacted the willing participants who met the necessary qualifications. Before the activity was conducted participant information documents and informed consent forms were distributed to each participant and collected from each participant. The responses to the questionnaire for this study were collected using Google forms.

The data gathering instruments were;

Phase 1:

1) Section 1: Personal information questionnaire of the sample group, including gender, age, academic year level, place of residence, who do you live with, personal income, and how many times have you been infected with COVID-19. The questionnaires utilized a checklist format.

2) Section 2: The sample group's questionnaire concerning the health effects of chronic conditions was as follows: The questionnaire consisted of an enumeration. The general condition was comprised of fatigue and fever. Symptoms of the cardiovascular system include chest pain, palpitation. Symptoms of the upper respiratory system include difficulty breathing, cough, sore throat and phlegm. Symptoms of the digestive system include nausea/ vomiting, diarrhea, weight loss, poor appetite, and abdominal pain. Among the musculoskeletal symptoms are muscle and joint pain. Symptoms of the brain and sensory system, such as headaches, dizziness, impaired taste, impair the sense of smell and disturbed ability to see. Mental health, including anxiety, depression, insomnia, and mood swings. Short memory is a symptom of the nervous system. Among the skin symptoms are skin rash and hair loss and another symptom (if available). This section of the questionnaire was developed based on a review of relevant research literature.

Phase 2: The data gathering instruments were;

1) Section 3: In-depth interview personal information questionnaire inquiries about the gender, age, level of education, department of study, and department of the sample.

2) Section 4: An in-depth interview on health impacts of long Covid to obtain content and activities to develop a health education program to promote health and reduce the health effects of long Covid in the next step by interviewing respondents directly (face-to-face interview) for approximately 30-45 minutes, where the sample group is different from phase one, data were extracted and analyzed using qualitative data analysis resulting from the interview.

2.4 Data Analysis

Quantitative data;

Mean, minimum, maximum, and percentage were used to analyze quantitative descriptive statistics, while count frequency and percentage were used to analyze categorical variables.

Qualitative data;

In-depth interviews were transcribed. CAQDAS analyzed qualitative research data. The researcher analyzed

qualitative data with QDA Miner Lite. Data analysis was fast, easy, and accurate using this tool (Joungtrakul, 2019). The researcher employed typological analysis to classify and organize the data. Keyword and taxonomy analysis micro classified this data. Keyword analysis includes categorizing terms by association (Lincharoen, 2012). Generic content analysis was used to split the data analysis procedure into 8 steps: (1) prepare the data; (2) establish the unit of analysis; (3) design categories and a coding scheme; (4) test the scheme on a sample of text; (5) code all text; (6) check coding consistency; (7) derive inferences from the coded data; and (8) present methods and findings (Kuckartz, 2019).

2.5 Ethics Consideration

The Kasetsart University Research Ethics Committee (KUREC) approved this study on April 25, 2023, with the code number COE66/046. The purpose of the committee was to evaluate research proposals involving humans to ensure compliance with the University's ethical standards.

2.6 Results

Table 1. This table showed the socio-demographic characteristics of participants involved in phase 1 of the research on the health impact of long Covid among student teachers at Kasetsart University. The total sample size for this phase was 286 individuals

Characteristic	Criterion	Frequency	Percentage (%)
Gender	Male	107	37.41
	Female	175	61.19
	Other	4	1.40
Age	18 years	51	17.83
	19 years	80	27.97
	20 years	70	24.47
	21 years	56	19.59
	22 years	22	7.70
	23 years	7	2.44
Academic year level	1	80	27.97
	2	83	29.02
	3	66	23.08
	4	57	19.93
Place of residence	House	78	27.27
	Condo/ apartment	44	15.39
	Dormitory	164	57.34
With whom do you reside?	Family (parents, grandparents)	94	32.86
	Friend	102	35.67
	Alone	88	30.77
	Boyfriend/ girlfriend	2	0.70
Personal income	2,500-5,500 THB	110	38.46
	5,501-8,500 THB	75	26.22
	8,501-11,500 THB	59	20.63
	11,501-14,500 THB	26	9.09
	14,501-17,500 THB	9	3.15
	17,501-20,500 THB	3	1.05
	> 20,500 THB	4	1.40
How many times have you been infected with COVID-19	1 time	216	75.52
	2 time	58	20.28
	≥3 time	12	4.20

The data shown in Table 1 illustrates the outcome;

The study included undergraduate student teachers from Kasetsart University who were in their first through fourth year of studies. The study found that a significant proportion of the participants were female (61.19%). Furthermore, a considerable percentage of the participants were 19 years old (27.97%) and were primarily second-year students (29.02%). Additionally, a majority of the participants resided in dormitories (57.34%) and shared their living space with friends (35.67%). The mean value of personal income falls between the range of 2,500-5,500 THB, constituting 38.46% of the total. The majority of individuals contracted COVID-19 on a

single occasion, accounting for 75.52% of cases.

Table 2. To explore the health impact of long Covid of student teachers, Kasetsart University (n=286)

No	Question	Has symptom	No symptom
	General symptom		
1.	Fatigue	228 (79.72)	58 (20.28)
2.	Fever	221 (77.27)	65 (22.73)
	Cardiovascular system		
3.	Chest pain	44 (15.38)	242 (84.62)
4.	Palpitation	47 (16.43)	239 (83.57)
	Upper respiratory system		
5.	Difficulty breathing	170 (59.44)	116 (40.56)
6.	Cough	239 (83.57)	47 (16.43)
7.	Sore throat	221 (77.27)	65 (22.73)
8.	Phlegm	208 (72.73)	78 (27.27)
	Digestive system		
9.	Nausea/ vomiting	49 (17.13)	237 (82.87)
10.	Diarrhea	71 (24.83)	215 (75.17)
11.	Weight loss	92 (32.17)	194 (67.83)
12.	Poor appetite	41 (14.34)	245 (85.66)
13.	Abdominal pain	33 (11.54)	253 (88.46)
	Musculoskeletal symptoms		
14.	Muscle pain	162 (56.64)	124 (43.36)
15.	Joint pain	100 (34.97)	186 (65.03)
	Brain and sensory system		
16.	Headache	194 (67.83)	92 (32.17)
17.	Dizziness	161 (56.29)	125 (43.71)
18.	Impaired taste	107 (37.41)	179 (62.59)
19.	Impair the sense of smell	104 (36.36)	182 (63.64)
20.	Disturbed ability to see	17 (5.94)	269 (94.06)
	Mental health		
21.	Anxiety	97 (33.92)	189 (66.08)
22.	Depression	32 (11.19)	254 (88.81)
23.	Insomnia	84 (29.37)	202 (70.63)
24.	Mood swing	67 (23.43)	219 (76.57)
	Nervous system		
25.	Short memory	53 (18.53)	233 (81.47)
	Dermatological manifestations		
26.	Skin rash	25 (8.74)	261 (91.26)
27.	Hair loss	77 (26.92)	209 (73.08)
	Another symptom		
28.	Sexual dysfunction: Lack of sexual desire or interest in sex	1 (0.35)	285 (99.65)
29.	Loss of voice (temporary)	1 (0.35)	285 (99.65)

The data shown in Table 2 illustrates the outcome;

The manifestation of discernible signs and symptoms across several bodily systems can be categorized and observed in student teachers who are experiencing the prolonged effects of Covid-19. The present investigation revealed that 1). The prevalence of general condition symptoms such as fatigue was found to be 79.72%, whereas fever was reported by 77.27% of the participants. The most commonly reported symptoms of the cardiovascular system were chest pain, accounting for 15.38% of cases, and palpitation, accounting for 16.43% of cases. The analysis of symptoms pertaining to the upper respiratory system revealed that a majority of individuals experienced coughing (83.57%), sore throat (77.27%), production of phlegm (72.73%), and difficulty breathing (59.44%), in that order. The symptoms associated with the digestive system encompass a range of manifestations. These include nausea and vomiting, which are reported in about 17.13% of cases. Diarrhea, on

the other hand, is observed in approximately 24.83% of cases. Weight loss is a prevalent symptom, affecting a substantial 32.17% of individuals. Poor appetite is reported in around 14.34% of cases, while abdominal pain is experienced by approximately 11.54% of individuals. The prevalence of musculoskeletal symptoms includes muscle pain (56.64%) and joint pain (34.97%). The prevalence rates of headaches, dizziness, impaired taste, impaired sense of smell, and disturbed ability to see as symptoms of the brain and sensory system are 67.83%, 56.29%, 37.41%, 36.36%, and 5.94% respectively. The prevalence rates of several mental health conditions are as follows: anxiety (33.92%), depression (11.19%), insomnia (29.37%), and mood swings (23.43%). The manifestation of a reduced capacity for memory retention, commonly referred to as short memory, is recognized as a symptom within the domain of the nervous system. Among the observed dermatological manifestations, skin rash was reported in 8.74% of cases, while hair loss was observed in 26.92% of cases. Additionally, there were other symptoms reported as well. Sexual dysfunction (0.35%) refers to lack of sexual desire or interest in sex as well as a corresponding manifestation of loss of voice (temporary), also accounting for 0.35% of cases, have been observed.

Table 3. To investigate health impact data of long Covid among student teachers at Kasetsart University. Through in-depth interviews with key informants, (n=30)

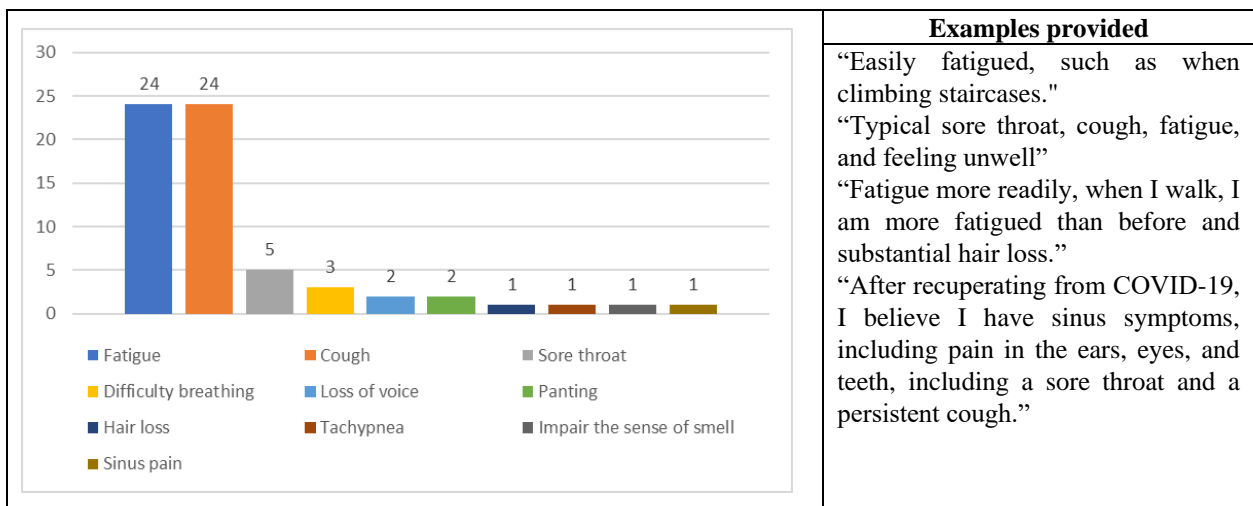Table 3.1 What Health Effects does long Covid have?

	Examples provided
	"Easily fatigued, such as when climbing staircases." "Typical sore throat, cough, fatigue, and feeling unwell" "Fatigue more readily, when I walk, I am more fatigued than before and substantial hair loss." "After recuperating from COVID-19, I believe I have sinus symptoms, including pain in the ears, eyes, and teeth, including a sore throat and a persistent cough."

Table 3.2 From item 1, what method do you possess? in order to regulate the health consequences of these long Covid conditions

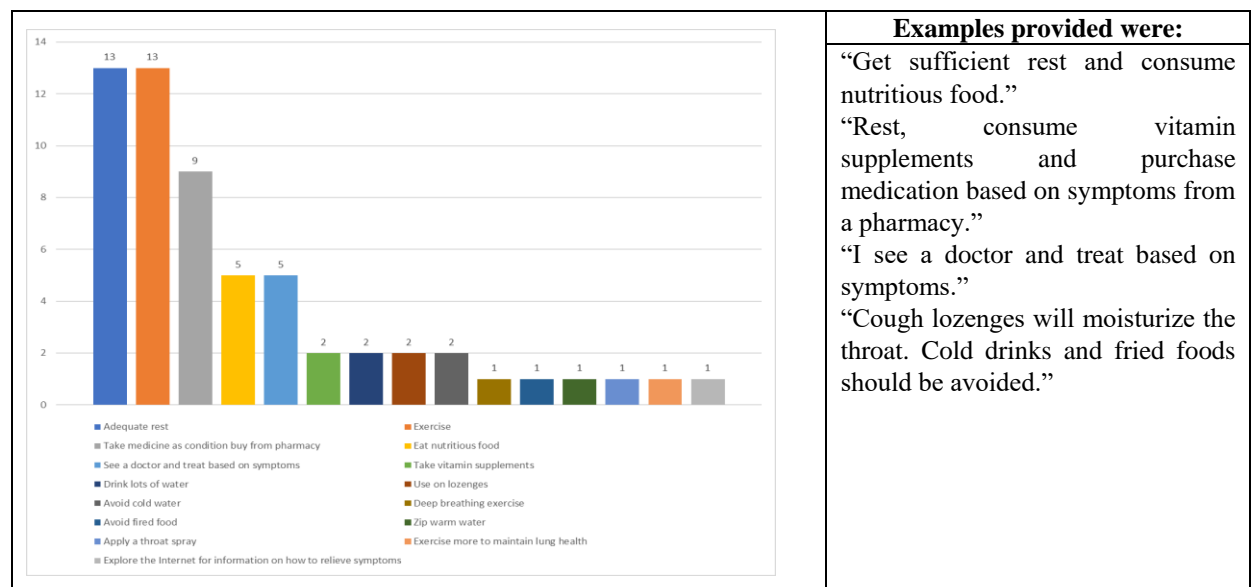|	Examples provided were:
	"Get sufficient rest and consume nutritious food." "Rest, consume vitamin supplements and purchase medication based on symptoms from a pharmacy." "I see a doctor and treat based on symptoms." "Cough lozenges will moisturize the throat. Cold drinks and fried foods should be avoided."

Table 3.3 Do you think that your health will be affected in the future as a result of your experience with long Covid? Why?

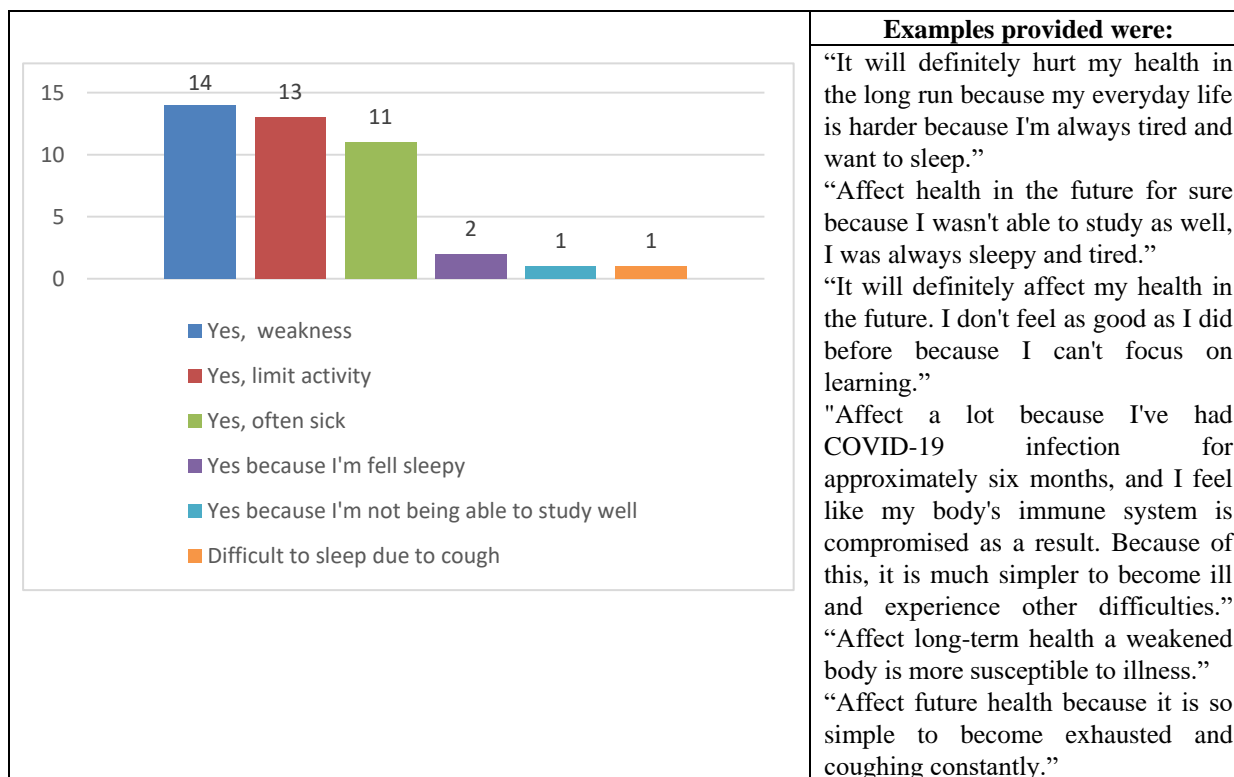|	Examples provided were:
Bar chart values: 14, 13, 11, 2, 1, 1. Legend: ■ Yes, weakness ■ Yes, limit activity ■ Yes, often sick ■ Yes because I'm fell sleepy ■ Yes because I'm not being able to study well ■ Difficult to sleep due to cough	"It will definitely hurt my health in the long run because my everyday life is harder because I'm always tired and want to sleep." "Affect health in the future for sure because I wasn't able to study as well, I was always sleepy and tired." "It will definitely affect my health in the future. I don't feel as good as I did before because I can't focus on learning." "Affect a lot because I've had COVID-19 infection for approximately six months, and I feel like my body's immune system is compromised as a result. Because of this, it is much simpler to become ill and experience other difficulties." "Affect long-term health a weakened body is more susceptible to illness." "Affect future health because it is so simple to become exhausted and coughing constantly."

Table 3.4 Do you believe that organizing a health education program to promote health and reduce the health effects of long Covid is essential, and if so, why?

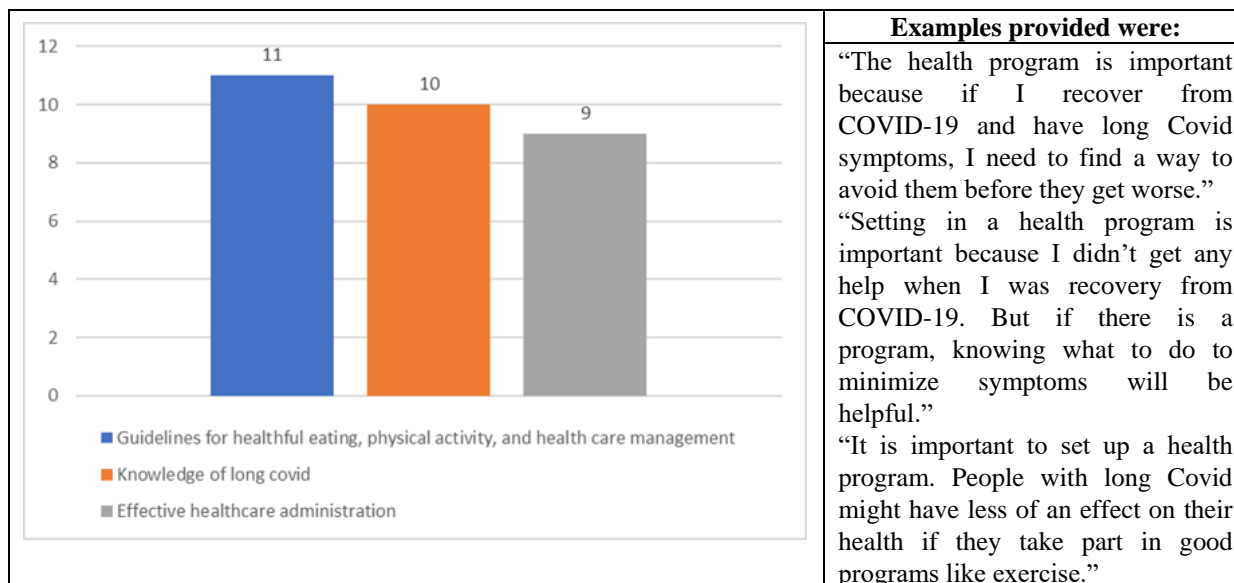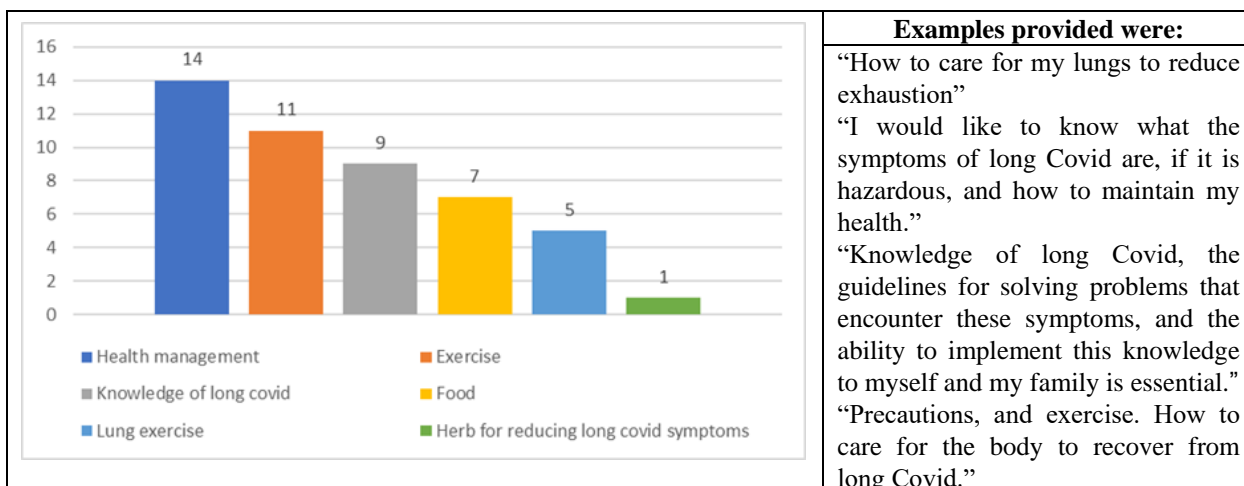|	Examples provided were:
Bar chart values: 11, 10, 9. Legend: ■ Guidelines for healthful eating, physical activity, and health care management ■ Knowledge of long covid ■ Effective healthcare administration	"The health program is important because if I recover from COVID-19 and have long Covid symptoms, I need to find a way to avoid them before they get worse." "Setting in a health program is important because I didn't get any help when I was recovery from COVID-19. But if there is a program, knowing what to do to minimize symptoms will be helpful." "It is important to set up a health program. People with long Covid might have less of an effect on their health if they take part in good programs like exercise."

Table 3.5 If you are mandated to participate in a health education program to promote health and reduce the health impact of long Covid, you must complete the program. What information is necessary to effectively mitigate the health effects of long Covid?

	Examples provided were:
	"How to care for my lungs to reduce exhaustion"
	"I would like to know what the symptoms of long Covid are, if it is hazardous, and how to maintain my health."
	"Knowledge of long Covid, the guidelines for solving problems that encounter these symptoms, and the ability to implement this knowledge to myself and my family is essential."
	"Precautions, and exercise. How to care for the body to recover from long Covid."

3. Discussion

3.1 Health Impact from Long Covid (Sign and Symptom)

This study collected data from May 29, 2023 to August 1, 2023 on who was infected with COVID-19. According to this study, the COVID-19 outbreak was widespread and caused by three distinct strains, Beta, Delta, and Omicron, with variable symptoms and severity. The prevalence of long Covid symptoms ranged from 14% to 64%, most likely due to unclear classifications, a lack of comprehension of pathophysiology, identifying risk factors, and evaluating abnormal symptoms. Consequently, the prevalence of COVID-19 may vary. However, the pandemic status of each country is unique (Wongsermsin, Chinoraso & Yeekian., 2022). The incidence of long Covid conditions was reported variably in each study. It was determined that the incidence of long Covid conditions is proportional to the number of patients infected with COVID-19 in each country.

According to the findings of phase 1, the most common symptoms of long Covid were cough, fatigue and fever. These findings were consistent with those of Chopra et al., (2021) and Martimbianco et al., (2021) who stated that the most atypical symptoms after 60 days of Corona 2019 (SARS-CoV-2) infection were fatigue, chest pain, dyspnea, cough, and alterations in smell or taste. In addition, Arnold et al., (2021) discovered that the incidence of persistent or recurring abnormal symptoms after 90 days of recovery from COVID-19 included difficulties breathing and sleep disturbances, chest pain, and a chronic cough. After 6 months of recovery from COVID-19, the incidence of chronic or recurring symptoms was 50% with at least one of these symptoms. The majority of people who were infected with COVID-19 had fatigue, movement difficulty due to muscular weariness or joint discomfort, sleeplessness, palpitations, chest pain, anxiety or depression, and hair loss. Several studies have claimed complete recovery in less than a year. Adults had a higher prevalence of symptoms than children, according to Huang et al., (2021). The age range was 35-69 years, with 59 being the median. Females outnumbered males.

Nevertheless, the risk factors for long Covid condition are unknown. However, there is evidence that it is caused by a variety of circumstances. People who have recovered from COVID-19 and have had lung issues or pre-existing pulmonary illnesses, as well as those who are elderly and obese, are at a higher risk (Halpin, O'Connor & Sivan., 2021). Black, Asian, and Minority Ethnic (BAME) Americans had a 42.1% incidence, whereas white Americans had a 25% incidence. There is a larger probability of the long Covid condition (Huang et al., 2021 and Halpin et al., 2021). Some studies have not identified a link between the degree of COVID-19 infection and the severity of the long Covid condition (Tantipasawasin & Tantipasawasin., 2022).

3.2 Long Covid in Thailand

Wangchalabovorn, Weerametachai & Leesri., (2022) conducted a clinical evaluation of the prevalence of long Covid disorders and the factors associated with these conditions in patients diagnosed with SARS-COV-2 infection. The evaluation was carried out using tele-follow-up during the middle of 2021. The results of the study indicated that 50.5% of the 202 patients infected with SARS-CoV-2 were female. Furthermore, there was a

prevalence of 64.87% of protracted COVID symptoms among these patients. The most prevalent clinical problems reported by individuals were alopecia (32.53%), post-exertional malaise (PEM) (32.02%), dyspnea (21.59%), fatigue (16.46%), and insomnia (13.77%). The aforementioned discovery was associated with the work of Wonghiranrat, (2023) who did an analytical cross-sectional study in Tak Bai District, Narathiwat Province, during the year 2019. The objective of the study was to evaluate the prevalence of long Covid conditions and identify the factors that influence its occurrence among a sample of 325 individuals who had previously contracted the corona virus. It Regardless of gender, the most common symptoms of COVID-19 infection were fatigue (80.92%), insomnia (42.77%), hair loss (39.38%), and headache (37.2%).

3.3 Long Covid Prevention

According to WHO, (2023) the declaration of the end of the Public Health Emergency of International Concern (PHEIC) for COVID-19 has been made as a result of the observed decline in mortality rates. This declaration signifies the conclusion of a period spanning over three years during which the PHEIC was in effect. Consequently, individuals are now transitioning back to their regular routines and resuming normalcy in their daily lives. Nevertheless, it is imperative to closely monitor the emerging COVID-19 variant which presents a significant risk to worldwide public health.

Thailand continues to have the same COVID-19 preventive measures in place. When attending a major event or visiting a public venue, people are recommended to take precautions such as washing their hands and wearing a mask. as well as vaccinations the importance of hypodermic immunization cannot be overstated. The "608" population, in particular the frail or at-risk population, will benefit from reduced severe symptoms and mortality (Department of Medical Sciences, Ministry of Public Health, (2023)). If this group of 608 people becomes infected with COVID-19, they should be immunized against COVID-19 and the most regularly used medications. The symptoms are severe and extremely dangerous, and they are classified into three categories. Group 1 is made up of seniors aged 60 and up. Individuals in group 2 have seven underlying diseases, including persistent respiratory sickness, coronary artery disease, chronic kidney failure, ischemic stroke, obesity, cancer, and diabetes are all risks. Pregnant women (group 3) (Permpanya & Burakorn., 2022).

Department of disease control, Ministry of Public Health, (2023) recommends that the best strategy for long Covid prevention is to protect yourself from catching COVID-19 through immunization against COVID-19 and intensive vaccines to boost immunity put on a disguise Maintain social distance by keeping a space of 1-2 meters between yourself and others, avoiding crowded and poorly ventilated areas, often washing your hands, taking care of your physical health, and indulging in regular exercise. Get enough sleep, and if you notice any unusual symptoms, consult a doctor as soon as possible for an accurate diagnosis and fast treatment. Wangchalabovorn, Weerametachai & Leesri., (2022) stated that the prevalence of COVID-19 may differ. However, the findings of this study may not be directly comparable to those of other investigations. Because the epidemic scenario in each country is distinct.

4. Conclusion

Long Covid has been documented and individuals may have recovery from this illness. In cases where patients exhibit little symptoms, the need for medical treatment and subsequent physical examination may be deemed unnecessary. Nevertheless, individuals who fall into high-risk categories, such as the elderly, those with obesity, and individuals with chronic conditions, may opt to seek medical consultation. The fall in the prevalence of the disease has prompted the introduction of less stringent regulations, necessitating a re-evaluation of the situation. Nevertheless, it is crucial to avoid underestimating the profound consequences of long Covid, since it greatly amplifies the difficulties that persons have in their day-to-day existence. Wearing a facial covering in public contexts is widely regarded as the most efficacious measure for safeguarding personal well-being. Maintaining continuous hand hygiene through regular handwashing is of utmost importance. It is expected that compliance with the prescribed preventive measures will aid in mitigating the likelihood of acquiring the COVID-19 virus. Moreover, it is imperative to undertake an inquiry into the ramifications and possible remedies pertaining to the COVID-19 pandemic.

Limitation

This study did not inquire about the date of infection recovery.

Competing Interests Statement

The author affirms the absence of any conflicting or potential conflicts of interest.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

Open access

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Reference

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