

# Psychological impacts on patients with COVID-19 in a Thai field hospital

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## Abstract

**Objective:** This study investigates the psychological impacts and their associated factors on patients with COVID-19 at a Thai field hospital. **Methods:** All eligible patients confirmed to have COVID-19 at Thammasat University field hospital completed an online self-reported mental health screening questionnaire which collected sociodemographic data, their clinical characteristics, and used the depression, anxiety, and stress scale (DASS-21). **Results:** A total of 40 patients participated in the study. The depression rate was found to be 22.5%, while the anxiety rate was 30%, and the stress rate was 20%. Having a history of psychiatric disorder alone was significantly associated with a higher DASS-21 score ( $p = 0.001$ ). Meanwhile, gender, age, level of education, occupation, living status, severity of COVID-19, and the number of days admitted to hospital prior to the field hospital were not found to be associated with the DASS-21 scores ( $P > 0.05$ ). **Conclusion:** The depression, anxiety, and stress symptoms in patients with COVID-19 at the field hospital were common. Patients with a history of psychiatric disorder should undergo specific evaluation during the isolation phase.

**Keywords:** Anxiety, COVID-19, depression, mental health, psychological impact, stress

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## Introduction

The novel coronavirus disease 2019 (COVID-19)<sup>1</sup> was designated as a global pandemic in the first trimester of 2020. Besides the effect on physical health, studies including a meta-analysis have reported various mental health issues from previous coronavirus infection<sup>2-5</sup>. As of the 20<sup>th</sup> of June 2020, in Thailand, 3,135 cases had been reported<sup>6</sup>. Thammasat University field hospital was the first field hospital in Thailand to which patients with confirmed COVID-19 were referred. As the effects of COVID-19 on the mental health of patients at the field hospital were unknown, the present study sought to examine the prevalence of depression, anxiety, and stress in addition to their associated factors.

## Methods

The present study is a cross-sectional descriptive research conducted on patients with confirmed COVID-19 who were referred to Thammasat University field hospital between the 26<sup>th</sup> of March 2020 to the 16<sup>th</sup> of May 2020. The purpose of the field hospital was to isolate patients until they were PCR negative for COVID-19. Patients were referred to the field hospital either from Thammasat University Hospital or affiliated hospitals after their physical symptoms had improved and were stable. Patients

with severe medical or psychiatric conditions were not accepted to the field hospital. The inclusion criteria for the present study included being over the age of 18 and able to respond to the online questionnaire.

Within the first day of admission, the patients were required to answer an online self-reported questionnaire which collected sociodemographic and mental health status data. The collected sociodemographic information included gender, age, education level, employment status, living status, history of psychiatric disorder, severity of COVID-19, and the number of days spent admitted in hospital prior to being referred to the field hospital. Mental health status was measured by the self-reporting depression, anxiety, and stress scale - 21 Items (DASS-21)<sup>7</sup>. Each of the three DASS-21 domains contains seven items<sup>8</sup>, and the depression, anxiety, and stress scores are calculated by summing relevant item scores<sup>3-5</sup>.

Data was analysed using STATA version 14. Descriptive statistics were used for the sociodemographic data and the prevalence of depression, anxiety, and stress. Meanwhile, a multivariable linear regression model was used to calculate the association between the sociodemographic characteristics and the total DASS score. A  $p < 0.05$  was considered to be statistically significant. The study was approved by the Human Research Ethics Committee of Thammasat University (No. MTU-EC-PS-0-076/63).

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## Results

The 40 patients had a mean age of 30.4 years old and 57.5% were female. About half of the patients graduated from university, worked full-time, and lived alone. In addition, 12.5% of the patients reported a previous psychiatric disorder diagnosis. On average, prior to being admitted to the field hospital the patients had been previously admitted to hospital for 8.3 days. Table 1 presents the patients' characteristics.

Regarding the prevalence of psychological impacts (Table 2), the depression rate was 22.5%, while 17.5% of the patients reported moderate to extremely severe depression. The anxiety rate was 30%, and 20% suffered from moderate to extremely severe anxiety. The stress rate was 20%, while 12.5% experienced moderate to extremely severe stress. The mean scores (SD) of depression, anxiety, and stress were 3.4 (4.6), 2.6 (2.8), and 4.3 (3.9), respectively.

The results of the multivariable linear regression model evaluating factors associated with depression, anxiety, and stress in the patients (Table 3) show that only a history of psychiatric disorder was significantly associated with a higher total DASS score ( $p = 0.001$ ). Other variables were not associated with the total DASS scores ( $P > 0.05$ ).

## Discussion

The prevalence of depression was 22.5%, anxiety was 30%, and stress was 20% in patients with COVID-19 at the Thammasat University field hospital. Compared to a study of patients with

Table 1. Demographics of patients (N = 40)

Characteristics	N (%)
Gender: female	23 (57.5%)
Age: mean (SD) (min= 20, max =55)	30.4 (9.4)
Education	
- Primary school	3 (7.5%)
- High school	14 (35.0%)
- University	23 (57.5%)
Occupation	
- None	7 (17.5%)
- Part-time	14 (35.0%)
- Full time	19 (47.5%)
Living alone	17 (42.5%)
History of psychiatric disorders	5 (12.5%)
Days in previous hospital: mean (SD)	8.3 (4.4)
Severity of COVID-19	
- No symptom	12 (30%)
- Mild	24 (60%)
- Moderate to severe	4 (10%)

Table 2. Prevalence of depression, anxiety, and stress

Prevalence	Depression	Anxiety	Stress
Normal	31 (77.5%)	28 (70.0%)	32 (80%)
Mild	2 (5.0%)	4 (10%)	3 (7.5%)
Moderate	3 (7.5%)	5 (12.5%)	4 (10%)
Severe-extremely severe	4 (10%)	3 (7.5%)	1 (2.5%)

Table 3. Association between sociodemographic of patients and psychological impact using multivariable linear regression analysis

Factors	Coefficient [95% CI]	p-value
Gender: female	-0.93 (-7.56, 5.69)	0.775
Age (years)	-0.03 (-0.36, 0.3)	0.834
Education		
- Primary school	reference	reference
- High school	-10.46 (-22.62, 1.7)	0.089
- University	-7.18 (-20.77, 6.4)	0.288
Occupation		
- None	reference	reference
- Part-time	4.04 (-4.79, 12.87)	0.357
- Full-time	0.53 (-7.71, 8.77)	0.896
Living alone	1.06 (-6.76, 8.87)	0.784
Days in previous hospital (days)	0.32 (-0.37, 1.01)	0.351
History of psychiatric disorders	17.47 (7.7, 27.23)	0.001
Severity of COVID-19		
- No symptom	reference	reference
- Mild	5.37 (-1.25, 11.99)	0.108
- Moderate to severe	-1.15 (-13.07, 10.77)	0.845

Adjusted R-squared 0.335

COVID-19 in China<sup>3</sup>, the overall psychological impacts on patients from the present study were lower (60.2% vs 22.5% in depression and 55.3% vs 30% in anxiety). The variation in prevalence rates could be due to the different questionnaires, since the present study used DASS while the Chinese study used either PHQ-9 (The Patient Health Questionnaire, 9-item version) or GAD-7 (Generalized Anxiety Disorder Assessment, 7-item version), or differences in the environment. Each patient in the field hospital was provided with an en-suite private room, a mobile phone, and unlimited internet connection. They could freely do their routines within their rooms. The physicians and nurses contacted each patient by phone at least twice per day. Having the ability to control their life and connect with others may have helped to reduce their psychological distress. However, when considering only the subgroup of patients with moderate to severe depression and anxiety, the prevalence of mental health issues in the present study did not significantly differ from the Chinese study (depression, 17.5% in China vs 17.5% in Thailand, and anxiety 6.8% in China vs 20% in Thailand). The prevalence of psychological distress in this study were also similar to another study which reported 26.8% of anxiety or depression in patients with confirmed COVID-19<sup>4</sup>.

The prevalence of psychological distress in this study was lower than those from a meta-analysis of acute psychiatric outcome of severe corona virus infection (SARS and MERS) which revealed

that 32.6% and 35.7% of patients had depression and anxiety, respectively<sup>5</sup>. The lower prevalence rate may result from the patients in field hospital having a mild severity, or COVID-19 was presented with less disease severity compared to SARs and MERs.

In this study, previous history of psychiatric disorder was the only factor that was found to be associated with a higher degree of psychological distress among the sample patients. This could be a useful screening question for predicting psychological distress in patients who have been referred to isolation in field hospitals. Meanwhile, days spent in previous hospital prior to being transferred to the field hospital was not found to be associated with depression, anxiety, or stress. Unlike previous studies<sup>3,5</sup>, female gender was not associated with psychological impacts in this study. This could be due to the small sample size or that the strong effect of history of psychiatric disorder could have masked the effects of the other studied factors.

When comparing the prevalence of psychological distress in patients with COVID-19 from this study to the psychological response from the general population in China<sup>9</sup> and Turkey<sup>2</sup> during COVID-19 epidemic—which have similar participant age and levels of education—the numbers were quite similar. For instance, in China 16.5% had moderate to severe depressive symptoms, 28.8% had moderate to severe anxiety symptoms, and 8.1% had moderate to severe stress level, while in Turkey, 23.6% had depression, and 45.1% had anxiety. The depression rate of patients in the Thammasat University field hospital showed little difference from the general populations' distress during the pandemic situation. However, the patients in the field hospital showed a lower anxiety rate (20%). It is hypothesized that since all the patients at the field hospital had partially recovered and had minimal or no physical symptoms, they may be less anxious and were hopeful regarding their health.

It is noted that although the prevalence of depression and anxiety in patients with COVID-19 were in the same range with the general population during pandemic situation, the rate is still higher than the general population during a normal context. The depression rate in this study was 22.5% compared to 17.3% from the meta-analysis perspective prevalence of depression using self-reporting instruments<sup>10</sup>. Moreover, the anxiety rate found in the present study was 30%, which compares to the global current prevalence of anxiety disorders adjusted for methodological differences of 7.3%<sup>11</sup>.

### Limitations

A small number of patients participated in the present study because the number of new COVID-19 cases in Thailand dropped dramatically after one month of the study. Since the patients who participated in this study had a mild physical condition and no obvious psychiatric symptoms, while patients who were unfamiliar with smartphones and online questionnaires were excluded, the study results may not represent the psychological impact of patients across all ages, educational levels, and severity. Lastly, it is notable that the psychological impacts in this study were assessed by online self-reporting questionnaires, which could reveal a higher prevalence compared to those assessed through psychiatric interviews<sup>12</sup>.

### Conclusion

The depression, anxiety, and stress symptoms in patients with COVID-19 at the Thammasat University field hospital were common, although under 10% of the patients experienced severe psychological impacts. The strongest predictor of a high

psychological effect is found to be a history of previous psychiatric disorder. Subsequently, patients with a history of psychiatric disorder should undergo specific evaluation during the isolation phase.

### Description of authors' roles

All authors designed the study. TL prepared the draft of the manuscript. LK, MP, WN, PT and CT collected the data and reviewed the draft. TC undertook the statistical analysis and prepared the draft. All authors have approved the final manuscript.

### Disclosure statement

The authors report no conflict of interest.

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### Ethical approval

This study was approved by the Human Research Ethics Committee of Thammasat University.

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