

## A Study of the Relationship between Stress and Mental Health of Students at Naresuan University During the Spread of the Covid–19

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### ABSTRACT

The purposes of this research were to study the relationship between stress and mental health status of Naresuan University students during the outbreak of the Coronavirus 2019. It was a survey with a sample of 550 students conducted online by using a personal information questionnaire, the Suanprung Stress Test–20 and the Thai General Health Questionnaire. The results showed that most of the students in this study, 207 out of 550, were moderately stressed (average of 34.71) and, 166 out of 550, had mental health problems (average of 12.51). The most students had mental health problems of anxiety and insomnia followed by physical symptoms, severe depression, and social disability. From the study of the differences in stress and mental health classified by personal factors, it was found that different gender, age level and average monthly income had no correlation with stress and mental health. The study also found that stress and mental health problems had a statistically significant positive relationship at the .01 level during the outbreak of the Covid–19. In conclusion, the Covid–19 had an effect on stress and mental health of Naresuan University students with a moderate positive correlation with statistical significance at the .01 level.

**Keywords:** Stress, Mental Health, Covid–19, Students

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## Introduction

Entering the university is a very important change for students starting from a new society, a new way of teaching, taking responsibility for self-learning, becoming more self-reliant, and preparing them for full-fledged adulthood (Terdwongworakul, 2004). As a result, those studying in higher education are exposed to situations that cause mental health stress in many ways including adjusting to life-changing age, the environment, relationships with peers and seniors, financial problems, stress, and taking more responsibility for learning. Mental health problems often develop with teenagers, especially those studying at university or higher education who are considered teenagers to late teenagers facing many changes physically, mentally and socially with living at the university requiring more responsibilities in terms of learning expectations.

Many students are pressured by high competition, causing them to have to adapt to the changing environment, resulting in more stress and psychological problems. At present, students are more likely to have mental health problems and mental illnesses with the highest number of self-harm or suicide behaviors (Trachoo, Kaewpornsawan, & Panyapas, 2013; Pissamorn, 2020).

The outbreak of coronavirus in late 2019 led to the closure of universities in most countries. The results of studies in this field show that the pandemic of COVID-19 and subsequent home quarantine has increased the level of stress, depression among students (Hekmat, Divanbeigi, & Yegane, 2021) and problems of adapting to study. Students also have to adapt to problems from the situation of the spread of the Coronavirus Disease 2019 (COVID-19) that began to spread in December 2019 causing Thailand to have announced the Coronavirus Disease 2019 as a dangerous communicable disease according to the Communicable Diseases Act 2015 that requires strict surveillance, prevention and disease control (Sansupa et al., 2020). Thus the lives of the general public, whether in terms of society, economy and education, were affected. Living life under the change of the epidemic will surely affect the health of the person both physically and mentally (Surakarn & Arin, 2014).

Regarding educational management measures in the situation of COVID-19 for those studying in higher education (Office of the Basic Education Commission, 2020), guidelines were set for teaching and learning during the epidemic situation of the Coronavirus Disease 2019. Significant changes were presented for students by having higher education institutions interrupt the normal style of teaching, learning and refraining from unnecessary activities and organizing teaching and learning in an online format including conference exams to prevent the spread of the COVID-19 virus.

As a result, university students like at Naresuan University, were faced with adapting to a new style and format without the familiar social learning opportunities they were accustomed to for years and this presented new responsibilities in addition to the stress of the COVID-19 itself. This was a challenging issue that needs to be understood because it can cause stress and mental health problems (Moawad, 2020).

Barrot, Llenares and Del Rosario (2021) found that many students had problems adapting to their studies whether it was monthly income problems or not having sufficient tools and equipment to support online learning like computers or online access. New students who had just entered the university at this time had adjustment problems because they had to study online throughout the academic year and lacked the opportunities to develop social skills of normal beginning university students resulting in a lack of healthy activities and opportunities to build relationships with classmates. According to a study by Tantanukul & Wongsawat (2017), students in the Health Science student cluster were more likely to experience stress than students studying in other professions because they had to adapt to teaching and learning conditions about the study of human life where the practical application of human life must be done with great intent and caution as a mistake can endanger the patient's life. Additionally, from data collection through interviews in the Science and Technology student cluster, this group of students had increased anxiety about learning because they did not practice in the laboratory preparing with hands on skills. Because many subjects were taught outside of the normal learning environment,

many students were worried about their academic performance not being as good as could be expected when they actually had to participate in a real hands on situation. They had increased depression from not meeting people and also had increased expenses. These issues were also important for the Social Sciences student cluster where there are problems with learning in some subjects that requires understanding the behavior of people in the social context. Being unable to participate in actual experiences in order to understand the socio-cultural structure results in stress and anxiety among such students if they have no actual experience.

All this contributed to a growing anxiety along with problems adapting to changing learning styles. From the compilation of various data that have been studied, it can be said that the situation of the epidemic of COVID-19 has greatly affected university students in terms of adaptation, lifestyle, study, and mental health (Hekmat, Divanbeigi ,& Yegane, 2021). Therefore, the researcher was interested in studying the relationship between stress and mental health of the students during the epidemic situation of the Coronavirus Disease 2019 in order to determine guidelines and proper strategies to assist students in dealing with and managing stress and thus contributing to mental health.

### **Conceptual framework for research**

The purpose of this research was to study the relationship between stress and mental health of Naresuan University students. This study collected data from the Science and Technology, Social Sciences and Health Science clusters within Naresuan University, academic year 2021. The researcher has defined the scope of study and research in terms of population, content, area and research period as follows:

1. Scope of Population: The population used in this study was undergraduate students in the 1st–6th year studying at Naresuan University, Thailand (Division of human Resource, Naresuan University, n.d.) in several academic clusters.

1.1 Science and Technology cluster which consists of the Faculty of Agriculture, Nature Resources and Environment, Faculty of Science, Faculty of

Engineering, Faculty of Architecture, Faculty of Logistics and Digital Supply Chain.

1.2 Social Sciences cluster which consists of the Faculty of Education, Faculty of Law, Faculty of Humanities, Faculty of Business Economics and Communications, Faculty of Social Sciences and Naresuan University International College.

1.3 Health Science cluster which consists of the Faculty of Pharmaceutical Sciences, Faculty of Medicine, Faculty of Public Health, Faculty of Medical Sciences, Faculty of Nursing, Faculty of Dentistry and Faculty of Allied Health Sciences.

2. The scope of this research was to study the relationship between stress and mental health of students in the Social Sciences, Science and Technology, and Health Sciences clusters at Naresuan University during the situation of corona virus 2019.

3. Time scope for the research was between October 2021 and October 2022.

## **Objectives**

1. To assess the stress and mental health of the Science and Technology, Social Sciences and Health Science clusters at Naresuan University during the COVID-19 pandemic.

2. To compare stress levels and mental health in the Science and Technology, Social Sciences and Health Science clusters at Naresuan University during the COVID-19 pandemic.

3. To examine the relationship between stress levels and mental health of students in the Science and Technology, Social Sciences and Health Science clusters at Naresuan University during the COVID-19 pandemic.

## **Research hypotheses**

Hypothesis 1 a: There are differences in stress and mental health according to gender.

Hypothesis 1 b: There are differences in stress and mental health according to year of study.

Hypothesis 1 c: There are differences in stress and mental health according to average monthly income.

Hypothesis 2: There is relationship between stress and mental health of Naresuan University students during the COVID-19 pandemic.

## **Method of conducting research**

Research in the study of the relationship between stress and mental health of students at Naresuan University during the COVID-19 pandemic was a quantitative research that collected data by online questionnaire among Naresuan University students. The research project has been certified according to the guidelines for human research ethics as an international standard with a standard sample rights protection process from the Human Research Ethics Committee, Naresuan University Research Project Number COA No. 139/2022 IRB No. P2-0458/ 2021.

The population used in the research was students from Naresuan University studying for a bachelor's degree at Naresuan University Academic Year 2021 with an overall student membership of 24,623 people (Education Services Division, Naresuan University, 2021).

The sample group used in the research was 550 Naresuan University students in the academic year 2021 using the Krejcie & Morgan (1970) sample calculation formula.

## **Sampling**

The random sampling method was used to determine the number of samples from academic year 2021 1st–6th year undergraduate students with a backup of 10 students per faculty. Selective sampling was used until the

required number of students in each faculty was obtained with a total of 550 students. Randomly drawn samples from all faculties were combined as follows:

**1. Students from the Health Science cluster 171 people:** Faculty of Medical Sciences (31), Faculty of Pharmaceutical Sciences (22), Faculty of Allied Health Sciences (27), Faculty of Medicine (25), Faculty of Public Health (34), Faculty of Nursing (17) and Faculty of Dentistry (15).

**2. Students from the Science and Technology cluster 160 people:** Faculty of Logistics and Digital Supply Chain (13), Faculty of Science (42), Faculty of Engineering (51), Faculty of Architecture (24), Faculty of Agriculture Nature Resources and Environment (30).

**3. Students from the Social Sciences cluster 219 people:** Faculty of Education (37), Faculty of Social Sciences (34), Faculty of Law (30), Faculty of Humanities (42), Faculty of Business Economics and Communications (62) and Naresuan University International College (15).

### **Inclusion criteria**

1. Students studying bachelor's degree at Naresuan University.
2. There was no illness or disability that was an obstacle to answering the questionnaire.
3. Agree to answer the questionnaire.

### **Exclusion criteria**

1. Participants who did not complete the questionnaire as described.
2. Students who did not register for a bachelor's degree at Naresuan University.

### **Research variables**

From the study, the study variables can be defined as follows:

1. The grouping variables were gender, year class and average monthly income.
2. The correlation variables were the stress scores.

## Research tools

The tools used in this research were stress assessment and mental health assessment and were divided into 4 parts:

Part 1: Requesting consent to be a volunteer to collect data for research.

Part 2: A personal data questionnaire, namely: gender, year level, and average monthly income with 3 items in the form of an answer-check type using a nominal data measurement level.

Part 3: The Suanprung Stress Test-20 (SPST 20) developed by Suanprung Hospital Chiang Mai Province consisted of 20 items with a scale of 5 levels requiring little time for answering and the scores can be divided into 4 levels of stress: low stress, moderate stress, high stress and severe stress obtaining a high internal consistency reliability with a Cronbach's alpha coefficient of 0.94 making it suitable to be used as a research tool at this time. (Department of Mental Health, 2018)

This tool has the following interval scale:

5 points—have the most stress

4 points—very stressed

3 points—moderately stressful

2 points—little stress

1 point—don't feel stressed

0 points—did not answer the question

Interpretation of the 20-item set of Suan Prung Stress Assessment was based on a total possible score of 100. The total score is divided into 4 levels as follows:

0–24 indicates a low level of stress.

25–42 indicates moderate stress.

43–62 indicates high stress.

63 and above—indicates severe stress.

Part 4: General Health Questionnaire (Thai GHQ-28) Thai version, translated by Chaikowit, Sukying & Silapakit which is a standardized tool for surveying mental health problems in the general Thai population and screening

for two major problems: inability to live normally in various areas as it should be and having problems that cause distress by emphasizing problems that are out of the normal state of the person. The GHQ-28 questionnaire has 28 items with an answer rating scale and level of measurement data type reliability values of good credibility ranging from 0.84 to 0.94. The Thai GHQ scoring criteria is (0-0-1-1) and uses a low cut point of 5/6 where a score of 6 and above is considered abnormal and can be divided into sub-scaled GHQ, divided into 4 groups:

- Group 1, items 1–7 are somatic symptoms.
- Group 2, items 8–14 are anxiety and insomnia.
- Group 3 items 15–21 are social dysfunction.
- Group 4, items 22–28 are severe depression.

## **Data collection**

This study was a quantitative research using a survey research method collected from a sample of the population using a single measure using an online questionnaire. The researcher created an online questionnaire by asking volunteers to complete the questionnaire via Google forms. The period of data collection was during December 2021 Until May 2022.

Within the online questionnaire, details of the research data and a request for volunteer consent for research data was provided to the subjects for consideration on the first page of the questionnaire. These were the steps followed:

1. The researchers distributed online questionnaires via various platforms.
2. The researcher checks the completeness and correctness of the questionnaire.
3. The researcher scores the assessment form according to the predetermined criteria.
4. The researcher used the data obtained from checking the questionnaire scores to analyze with a statistical program.

## Data analysis

The statistics used in this research are:

1. Descriptive data analysis used to describe, explain, or summarize the characteristics of a group of numerical data. Statistics used were percentage, mean and standard deviation.
2. Inferential data analysis used to summarize the various statistics that occur in the surveyed sample to the group's population. Statistics used were independent t-test, One-way ANOVA, and Pearson's Correlation with SPSS software used for statistics.

## Results of the study

**Part 1 Results of analyzing personal data of Naresuan University students during the COVID-19 pandemic.**

**Table 1 Demographic characteristics of the study sample (n=550)**

Items	N	Percentage
<b>Gender</b>		
Female	425	77.3
Male	125	22.7
Total	550	100.0
<b>Year of study</b>		
Year 1	107	19.5
Year 2	210	38.2
Year 3	142	25.8
Year 4	75	13.6
Year 5	9	1.6
Year 6	7	1.3
Total	550	100.0

**Table 1 (Continued)**

Item	N	Percentage
<b>Average monthly income</b>		
Less than 4,000 baht per month	181	32.9
4,001–6,000 baht per month	210	38.2
6,001–8,000 baht per month	77	14.0
more than 8,001 baht per month	82	14.9
<b>Total</b>	<b>550</b>	<b>100.0</b>

**Source:** Author's elaboration

From Table 1 showing the personal information of the sample, it was found that most of the respondents were 425 females (77.3%) and 125 males (22.7%) studying in the second year. The highest number of 210 people (38.2%), followed by the third year number of 142 people (25.8%), the first year number of 107 people (19.5%), and the fourth year number of 75 people (13.6%). Year 5, 9 people (1.6%) and Year 6, 7 people (1.3%), respectively. Most of them have an average monthly income of 4,001–6,000 baht per month, 210 people (38.2%), followed by an income of less than 4,000 baht per month, 181 people (32.9%), more than 8,001 baht per month, 82 people (14.9%) and those earning 6,001 –8,000 baht per month, 77 people (14.0%) respectively.

**Part 2: The analysis of stress and mental health data of Naresuan University students during the Covid-19 pandemic.**

**Table 2 Mean and Standard Deviation of Overall Stress Scores.**

Study variables	Mean	S.D.	Level
Stress	48.70	15.98	High stress level

**Source:** Author's elaboration

Table 2 shows the results of the analysis of stress levels of Naresuan University during the COVID-19 pandemic from the Suanprung Stress Test-20 (SPST-20). Overall, it was at a high stress level ( $M=48.70$ ,  $S.D.=15.98$ ).

**Table 3 Mean and standard deviation of stress scores classified by level of stress.**

Stress level	N	Mean	S.D.
Less stressful	19	22.53	1.43
Moderately stressed	207	34.71	4.99
High stress	206	51.73	5.45
Severely stressed	118	72.16	8.59
<b>Total</b>	<b>550</b>	<b>45.28</b>	<b>5.12</b>

**Source:** Author's elaboration

From Table 3, most of the respondents were moderately stressed, 207 people ( $M=34.71$ ,  $S.D.=4.99$ ), followed by high stress, 206 people ( $M=51.73$ ,  $S.D.=5.45$ ), and 118 were severely stressed. people ( $M=72.16$ ,  $S.D.=8.59$ ) and less stress, 19 people ( $M=22.53$ ,  $S.D.=1.43$ ).

**Table 4 Means, and standard deviations of mental health status (N=550).**

Mental health	N	Mean	S.D.
No mental health problems	384	1.25	1.54
Mental health problems*	166	12.51	5.24

\*Mean  $>5$  have mental health problems and are more likely to develop psychiatric disorders. Nilchaikovit, T., Sukying, C., & Silpakit, C. (1996)

**Source:** Author's elaboration

From Table 4, out of 550 respondents, it was found that most of them 384 (76.8%) were without mental health problems ( $M=1.25$ ,  $S.D.=1.54$ ) and 166 (33.2%) had mental health problems ( $M=12.51$ ,  $S.D.=5.24$ ).

**Table 5 Mean and Standard Deviation of Mental Health problems (n=166).**

Mental health problems	Mean	S.D.	Ranking
Physical symptoms	3.01	2.18	2
Anxiety and insomnia	3.72	2.12	1
Social disability	2.78	1.91	4
Severe depression	3.00	2.51	3

**Source:** Author's elaboration

From Table 5, respondents with mental health problems were found primarily with symptoms of anxiety and insomnia ( $M=3.72$ ,  $S.D.=2.12$ ) and secondly with physical symptoms ( $M=3.01$ .,  $S.D.=2.18$ ), and third severe depressive symptoms ( $M=3.00$ ,  $S.D.=2.51$ ). The fourth is a social disability problem ( $M=2.78$ ,  $S.D.=1.91$ ).

**Part 3: Comparative analysis results of the difference between the mean of personal information and the stress of Naresuan University students during the Covid-19 pandemic.**

**Table 6 T-test analysis of differences in stress by gender.**

Variables	N	Mean	S.D.	t	df	Level of significance
Female	425	48.97	16.06			
				0.73	548	.47
Male	125	47.78	15.76			

\*The mean difference is significant at value 0.05

**Source:** Author's elaboration

Table 6 presents the comparative analysis of differences in stress scores among males and females of Naresuan University students during the Covid-19 pandemic. The results indicate that there is no significant difference of mental health between male and female ( $t (548)=0.73$ ,  $p=.47$ ). Thus, the results rejected the Hypothesis 1.

**Table 7 Comparative Analysis of differences in stress according to year of study.**

Variance source	df	SS	MS	F	Level of significance
Between groups	5	962.17	192.43	0.75	.59
Within the group	544	139299.33	256.07		
<b>Total</b>	<b>549</b>	<b>140261.50</b>			

**Source:** Author's elaboration

Table 7 shows the comparative analysis results of the differences of the year studying with the stress scores of Naresuan University students during the Covid-19 pandemic using One Way Analysis of Variance: One-Way ANOVA. It was found that  $F(5, 544)=0.75$ ,  $p=.59$ , indicating that the stress scores of different years of study were not significantly different.

**Table 8 Comparative analysis of differences in mean income and stress scores.**

Variance source	df	SS	MS	F	Level of significance
Between groups	3	1750.17	583.39	2.30	.08
Within the group	546	138511.33	253.68		
<b>Total</b>	<b>549</b>	<b>140261.50</b>			

**Source:** Author's elaboration

Table 8 shows the comparative analysis of differences in average monthly income and stress scores of Naresuan University students during the Covid-19 pandemic using One Way Analysis of Variance: One-Way ANOVA. It was found that  $F (3, 546)=2.30$ ,  $p=.08$ , indicating that different average monthly income had no statistically different stress scores.

**Part 4: Comparative analysis results of the mean differences of personal information and mental health of Naresuan University students during the Covid-19 pandemic.**

**Table 9 Comparative analysis of differences in mental health scores among males and females.**

Variables	N	Mean	S.D.	t	df	Level of significance
Female	425	4.41	5.85			
Male	125	5.46	6.68	-1.72	548	.09

**Source:** Author's elaboration

Table 9 Shows the comparative analysis of the differences in mental health scores among males and females of Naresuan University students during the Covid-19 pandemic. Using an Independent Sample t-test it was found that  $t(548) = -1.72$ ,  $p=.09$  indicating that the mental health of male students was not significantly different.

**Table 10 Comparative analysis of differences in school years and mental health scores.**

Variance source	df	SS	MS	F	Level of significance
Between groups	5	84.16	16.83	0.46	.81
Within the group	544	20069.41	36.89		
Total	549	20153.57			

**Source:** Author's elaboration

Table 10, the comparative analysis results of the difference between the year of study and mental health scores of Naresuan University students during the Covid-19 pandemic by One Way Analysis of Variance: One-Way ANOVA were found, that  $F(5, 544)=0.46$ ,  $p=.81$ , indicating that different years of study had no significant difference in mental health scores.

**Table 11 Comparative analysis of differences in mean income and mental health scores.**

Variance source	df	SS	MS	F	Level of significance
Between groups	3	44.35	14.78	0.40	.75
Within the group	546	20109.22	36.83		
Total	549	20153.57			

**Source:** Author's elaboration

Table 11 shows the comparative analysis results of differences in average monthly income and mental health scores of Naresuan University students during the Covid-19 pandemic. Using One Way Analysis of Variance: One-Way ANOVA found that  $F (3, 546) = 0.40$ ,  $p = .75$ , indicating that different average monthly income had no statistically significant differences in mental health scores.

**Part 5: The analysis of the relationship between stress and mental health of Naresuan University students during the Covid-19 pandemic.**

**Table 12 Pearson Correlation between stress and mental health status.**

Test	Stress Test (SPST-20)		
	Correlation	Level of significance	Relationship level
Mental Health Test (GHQ-28)	0.70**	.00	Moderate relationship

\*\* There was statistical significance at the .01 level.

**Source:** Author's elaboration

Table 12 shows the results of the analysis of the relationship between stress and mental health of Naresuan University students during the Covid-19 pandemic. It was found that stress and mental health were significantly positively correlated ( $r=.70$ ,  $p < .01$ ) the same way. If Naresuan University students in the situation of the Coronavirus Disease 2019 epidemic experience high stress, their mental health will suffer as well.

## Conclusion

This research was a quantitative research using a survey research method. The purpose of this research was to study the stress and mental health of Naresuan University students during the Coronavirus Disease 2019 epidemic classified by individual factors and to study the relationship between stress and mental health. The sample group used in this study were 550 Naresuan University students in the academic year 2021. The tools used in this study consisted of The Suanprung Stress Test-20 (SPST 20) consisted of 20 items and the General Health Questionnaire (THAI GHQ-28) consisted of 28 items. The results can be summarized as follows:

### **1. General characteristics of the sample.**

The majority of the samples used in this research were 425 females (77.3%) and 125 males (22.7%) studying in the second year of study, 210 people (38.2 %) followed by 3rd year 142 people (25.8%), 1st year 107 people (19.5%), 4th year 75 people (13.6%), 5th year 9 people (1.6%) and the 6th year 7 people (1.3%), respectively, and most of them have an average monthly income of 4,001–6,000 baht per month, 210 people (38.2%), followed by low monthly income of more than 4,000 baht per month, 181 people (32.9%), more than 8,001 baht per month, 82 people (14.9%) and earning 6,001–8,000 baht per month, 77 people (14.0%), respectively.

### **2. The stress of the sample group during the COVID-19 pandemic.**

From this study, it was found that Naresuan University students during the Covid-19 pandemic had overall stress at a high stress level on the SPST-20 at 48.70 and when divided into levels, it was found that most of the respondents

were moderately stressed with 207 people having an average of 34.71, followed by high stresses of 206 people with an average of 51.73 with severe stress of 118 people with an average of 72.16 and low stress of 19 people with an average of 22.53.

### **3. Mental health of the sample group during the COVID-19 pandemic.**

From this study, it was found that most Naresuan University students in the situation of the Coronavirus Disease 2019 epidemic, were (384) without mental health problems with an average score of 1.25 and 166 with mental health problems. People had an average of 12.51, and when dividing the problems into sections, it was found that people with mental health problems had problems with anxiety and insomnia. with an average of 3.72 being the first. The second was the problem of physical symptoms. With a mean of 3.01. The third was severe depression. With a mean of 3.00, and the fourth was the problem of social disability with an average of 2.78.

### **4. Comparing stress classified by personal factors of the samples during the Covid-19 pandemic.**

From this study, it was found that as regards the sex factor, year of study and different average monthly income there was no statistically significant difference in stress in the COVID-19 epidemic situation.

### **5. Comparing mental health classified by personal factors of the sample during the COVID-19 pandemic.**

From this study, it was found that in consideration of the sex factor, year of study and different average monthly income there was no significant difference in mental health during the Covid-19 pandemic.

### **6. The relationship between stress and mental health of the subjects during the COVID-19 pandemic.**

From this study, it was found that stress and mental health of Naresuan University students in the situation of the Coronavirus Disease 2019 outbreak had a positive relationship with each other at a moderate level of statistical significance at the .01 level.

## Discussion

The study results can be discussed according to the research objectives as follows:

### **1. The stress of the sample during the outbreak of Coronavirus Disease 2019.**

During the COVID-19 pandemic Naresuan University students had the most stress at the medium level. 207 had a mean score of 34.71 followed by 206 cases with a mean score of 51.73 with a high level of stress. This is consistent with the research of Chantarasena (2012) who studied the stress of 358 first-year undergraduate students at Srinakharinwirot University. The results showed that subjects had moderate levels of stress consistent with the study of Sathirapanya & Hemapan (2013) who conducted a study on the subject of university student stress. The study found that the sample group of university students had a high level of stress at 57.6 percent. This is also in line with the Department of Mental Health, Ministry of Public Health. Anantanatorn (2016) statement that stress is the body's reaction to the environment. Stress is a unique experience for each person in the same situation and can happen at any gender and age. The study found that the sample group of students in Naresuan University had overall stress at the medium and high levels, respectively. Stress at this level affected the use of daily life. This may be caused by conflicting feelings of being unable to deal with the problem or situations that arise. However, students are constantly adapting and coping with changes in their lives, including adapting to online learning, lack of professional practice experience, limited living space, and additional expenses depending on technology such as internet cost and online education equipment. Also included are problems in relationship building, decreased communication skill development and emotional expression. It was observed that individual adaptation depends on the person's experience. If students at Naresuan University are unable to adapt to the problems during the Covid-19 pandemic, there will be increased stress.

## **2. Mental health of the sample during the COVID-19 pandemic.**

Most of Naresuan University students during the Coronavirus Disease 2019 epidemic 384 students (76.8%) had no mental health problems with an average of 1.25, and 166 students (33.2%) with mental health problems had an average of 12.51 which accounted for 1 in 3 of the total sample. This is considered a number that cannot be overlooked due to the outbreak of the Coronavirus Disease 2019 which has resulted in changes in both learning and university life. This may cause students in the group without mental health problems to be more vulnerable to mental health problems in the future. This is consistent with the research of Arsandaux et al. (2021) who studied the mental health status of college students compared to non-students during the COVID-19 pandemic mandatory measures. The results of the study showed that the status of being a student presented a higher risk of mental health problems than people in other statuses. This is consistent with the research of Hekmat, Divanbeigi, & Yegane (2021) who studied effects of COVID-19 on student's mental health: a systematic review. The results of the present study showed that a high percentage of students affected by the COVID-19 pandemic showed mild to severe levels of stress, anxiety and depression. The most important factors affecting the level of mental health of students during home quarantine are student gender, financial status, living with family and educational level.

## **3. The relationship between stress and mental health of the sample during the Covid-19 pandemic.**

Stress was positively correlated with mental health status during the coronavirus disease 2019 epidemic. This is consistent with the research of Ruangkit, Maneerat & Meebunmak (2019) who studied the relationship between mental health and stress among nursing students. The results showed that the mental health status and stress of nursing students at Boromarajonani College of Nursing, Noppharat Wachira were positively correlated. There were moderate and high mental health problems. This may be because when a person has a problem or a threat this results in pressure within the mind when unable to deal with the problems and that can cause stress. When a person is not ready for the

challenge, they will not and cannot manage their emotions and thoughts appropriately and this ultimately leads to mental health problems.

## **Suggestions**

1. The stress and mental health status of the sample should be regularly monitored because over time the stress level and mental health status may change. For example, if there is another world health crisis dealing with a new virus and students have to learn online.
2. There should be a plan to extend the time for collecting sample data due to the outbreak of the Coronavirus Disease 2019 resulting in more complete data collection in each faculty in terms of coordinating with agencies and volunteers.
3. The stress and mental health of university students in a time of no health crisis when students are attending classes rather than participating online should be conducted.

## **Suggestions for further research**

1. The limitations of social distancing and precautions in this study due to the risk of COVID-19 made it difficult to trace back data. It is recommended to use various online channels as multiple channels provide more opportunities to gather data.
2. This study was conducted in an epidemic situation of the corona virus infection 2019 which was considered a critical situation, and thus, the results of this study may be used to prevent stress and mental health problems in various crisis situations that could occur in the future.
3. Samples should be studied in different contexts to compare whether there are different stresses and mental health conditions as compared to private universities, colleges, or with working-age people.

## Reference

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