

Factors Affecting Stress of Online Learning due to the COVID-19 Situation at Faculty of Education, Thailand National Sports University Chonburi Campus

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Abstract

The purpose of this research was to study factors affecting stress of online learning due to the COVID-19 situation at the Faculty of Education, Thailand National Sport University Chonburi Campus, and to create equations to predict the stress of students. The samples consisted of 280 students in the Faculty of Education, Thailand National Sport University Chonburi Campus. The research instruments were the Suanprung Stress Test and a questionnaire gauging emotional and mental status, perceived severity of stress, opportunity for risk of stress, perceived usefulness of stress management, university policies that promote stress management, environment, and social support. The data were analyzed in terms of frequency, percentage, mean, standard deviation and Stepwise Multiple Regression Analysis. The results indicated that 1) study stress levels during the COVID-19 situation were at a moderate level: subjects had a mild level of stress 8.93 percent, moderate level of stress 56.78 percent, high level of stress 33.93 percent and severe level of stress 0.36 percent; 2) The subjects' emotional and mental well-being, perceived severity of stress, perceived usefulness of stress management, University policies that promote stress management, environment, social support were at a high level, and Opportunity for risk of stress moderate level. 3) The factors that related to the stress of online learning due to the COVID-19 situation comprised were 4 variables: achievement perceived usefulness of stress management, opportunity for risk of stress, university policies that promote stress management, and social support. There was a statistically significantly difference at the 0.1 level. These 4 factors could predict the Stress about percentage of 70.50. The significantly predicted equations were as follows:

In term of raw scores:

$$Y' = 75.425 + (-5.180) (X_4) + 3.816 (X_3) + (-3.465) (X_5) + (-2.689) (X_7)$$

In term of standard scores:

$$Z'_Y = (-0.324) (Z X_4) + 0.280 (Z X_3) + (-0.225) (Z X_5) + (-0.165) (Z X_7)$$

Keywords: stress, online learning, COVID-19

1. Introduction

Mental health is a condition of those who feel fresh, energized, and able to manage their emotions. Those who are mentally healthy can adapt themselves to changes in society and environment without conflict or confusion. In order for an individual to be mentally healthy, they need to have positive mental health behaviors, which is a part of a good quality of life. This agrees with the 1st National Plan to Improve Mental Health, which mentioned in Strategy 1 (Promotion of Mental Health and Prevention of Lifetime Mental Health Problems) that Thai people receive wide mental health promotion and prevention of mental health problems, covering all population age groups. This policy emphasizes thought, emotions, behavior, and social skill development as well as develops the family institution in regards to parenting potential for children with normal and high degrees of intelligence and emotional intelligence.

This will lead to a mentally healthy Thai society (Department of Mental Health, 2017). In 2019, it is found that Thai people's happiness ranks 52nd worldwide. It went down six ranks and continued to decline for a second consecutive year. The World Health Organization reports that someone commits suicide every 40 seconds on average. Suicide is the most common cause of death among young adults (15-29 years old). The main reasons are stress and depression. Some students with high levels of stress might contemplate suicide. Undergraduate education is a transitional period from high school. Thought and learning processes are being developed, especially new abstract knowledge. Students need to adapt to an age of changes. This results in individual stress. Students need to adapt in many aspects of life. They need adapt to a self-learning system, a new group of friends. Many move far from their parents and need to learn how to manage their expenses. All of these are critical points of life, which can happen to anyone of any gender and any age. Regardless of their physical health, a person will naturally adapt to a balanced condition when stressed. Stress levels depend on the nature of problems and an individual's thoughts and evaluation. If they see that the problem they are facing is severe, cannot be solved, and no one can help them, their level of stress will be high, especially if prolonged. This will result in both mental and physical and mental problems. Their stress can be caused by professors, academic results, expenses, circumstantial problems, and conflicts with family, neighbor, or peers. Stress is a quiet disaster that causes damage both physically and mentally and can lead to further losses (Arin, 2017; Chaitiang, 2016; International day of happiness, 2019; Pamornpol, & Wattradul, 2010).

Physical and mental health are important and necessary for quality of life. Keeping a healthy body and a mind will help achieve happiness and good quality of life. Maintaining good physical and mental health is essential and can be achieved by exercising. This agrees with Chidduan & Unaromlert (2013) who found that movements in nine-cell matrixes and yoga exercises can relieve stress in children and juveniles, since regular exercises increase the level of norepinephrine, which has anti-stress properties. In addition, exercises help with level of endorphins, which is an opioid substance that promotes good mood and relieve pain. It also reduces negative emotions and promotes positive ones. The result is a decrease in sadness, stress, pressure, mental fatigue, frustration, and tense muscles. When stressed, one tend to be obsessed with oneself, one's conditions, and the effects of fatigue when contemplating solutions. Exercises distract one's mind from problems, reduces negative thoughts, and helps one discover new things and meet people (Khrukaew et al., 2017). In Thailand, since April 2021, the government has promulgated the Royal Decree (Royal Decree) on public administration in emergency situations to control the situation of the epidemic of COVID-19, and there are lockdown measures in many areas along with orders to everyone to social distance and self-quarantine. The Ministries of Higher Education Research and Innovation have ordered the closure of educational institutions and ordered them to work from home to reduce the spread of COVID-19. People have to change their behavior (forging a "new normal") and change their learning style. Therefore, this is an online study. Many universities in Thailand have used various resources in the Internet to design and organize a system to create a teaching and learning system. The lesson content includes text, images, audio, video and multimedia. Sukdee & Chankuna (2021) Thailand's education sector in adjustments in-class learning has switched to online platforms to which students can log in from their homes. However, learning from home not only affects the effectiveness of class management and adds burden on parents, but it also affects learners' social lifestyles and learning. As these online learning platforms are untested, there are limitations on student assessment and evaluation. Many items in the evaluation list were canceled. More importantly, the effects of COVID-19 pandemic appear to be long-latsing, and they are likely to contribute to the disparity in education, especially for physical education, since it is held outdoors. Physical-education students need to move a great deal and they are quite close to each other, so the very nature of this field makes it nearly impossible to maintain social distancing measures. Doyumğaç, Tanhan & Kiyimaz (2021) reported that the five most reported barriers were lacks of technological resources, internet, appropriate learning, environments, learning

The Faculty of Education, Thailand National Sports University, Chon Buri Campus is charged with the duty of producing quality teachers in the field of Physical Education and Health Education at the bachelors-degree level. They have to be knowledgeable and skillful experts with a good attitude toward their profession. They must also have ethics and morality and be able to work and live helpfully in society. Mental readiness is crucial for effective learning. All courses must use online format. And often encounter problems that not familiar with online learning methods the place of residence is not conducive to online learning. The internet signal at home is not strong. The signal is easily dropped affect the stress. This is consistent with Moawad (2020) the closure of schools, universities and educational institutions across Saudi Arabia, and maintaining social distancing as a preventive and precautionary measure against COVID-19, have all changed the mode of teaching from a conventional standard system to a virtual and online framework. Such a quick and sudden shift in the educational system can cause intense stress on students. The results show that the issue with the highest percentage of stress among students is their uncertainty over the end

of semester exams and assessments. Lazarevic & Bentz (2021) stress can have both a positive and negative affect on student outcomes. Congruently, learning online brings unique challenges to students. The overall results show a significant difference in the perceived level of stress associated with student learning in disparate learning environments. The fact that students live in an environment and learning atmosphere that is different from high school, which affects their living, activities, socializing and, befriending fellow students who come from different backgrounds and have different thought processes and behaviors. Not reaching the target set by their families and competition in both education and sports affects the quality of learning. Therefore, it is important that universities give priority to their learning and extracurricular activity systems, their environment, and their facilities in order to produce graduates who are mentally ready (Hasin, Khantreejitranon, & Protadavit, 2016; Sonpaveerawong, et al, 2016).

For reasons mentioned above, the researchers are interested in factors affecting stress of online learning due to the COVID-19 situation at Faculty of Education, Thailand National Sports University Chonburi Campus. Factors of emotional and mental, perceived severity of stress, opportunity for risk of stress, perceived usefulness of stress management, university policies that promote stress management, environment, and social support are studied and used as information to plan the development of stress management and relieve for students.

2. Method

2.1 Objectives

- 1) To study the stress of online learning due to COVID-19 at Faculty of Education, Thailand National Sport University Chonburi Campus.
- 2) To create an equation to predict the stress of online learning due to COVID-19 in the Faculty of Education, Thailand National Sport University Chonburi Campus.

2.2 Sample

The population consisted of 525 undergraduate students of Thailand National Sports University Chonburi Campus in the 2021 academic year. The sample consisted of 280 undergraduate students from Thailand National Sports University Chonburi Campus in the 2019 academic year. The sample size needed to be considerably large, per the rule of thumb suggested by Hair et al. (2013) and Schumacker & Lomax (2010) that factor analysis should set the groups to variables ratio at no less than 10:1. This research determined the sample size of 40:1 and according to Krejcie and Morgan, (1970) the sample size table, which received 226 samples, selected a sample for the study by using a stratified random sampling. Every individual in the sample group were informed of terms and conditions and agreed to participate.

2.3 Variables

Predict variables

Internal factors 1) The emotional and mental (X1) 2) Opportunity for risk of stress (X2) 3) Perceived severity of stress (X3) 4) Perceived Usefulness of stress management (X4)

External factors 1) University policies that promote stress management (X5) 2) Environment (X6) 3) Social support (X7)

Dependent variable: The stress of online learning due to COVID-19 in the Faculty of Education, Thailand National Sport University Chonburi Campus.

2.4 Research Tools

1) The questionnaire for factors affecting stress of online learning due COVID-19 in the Faculty of Education, Thailand National Sport University Chonburi Campus, consisting of 7 items, with a rating scale of 5 levels as follows

- (1) Emotional and mental: IOC index of 0.60 - 1.00, $\alpha = 0.87$
- (2) The risk of stress: IOC index of 0.80 - 1.00, $\alpha = 0.85$
- (3) Perceived severity of stress: IOC index of 0.60 - 1.00, $\alpha = 0.91$
- (4) Perceived usefulness of stress management: IOC index of 0.60 - 1.00, $\alpha = 0.90$
- (5) The University policies that promote stress management: IOC index of 0.60 - 1.00, $\alpha = 0.88$

(6) Environment: IOC index of 0.80 - 1.00, $\alpha = 0.89$

(7) Social support: IOC index of 0.80 - 1.00, $\alpha = 0.90$

2) The researcher used the Suanprung Stress Test 20 [SPST-20] form at Suan Prung Hospital, which was the standardized stress assessment, amount 20 questions (Department of Mental Health, 2010) By the rating scale 5 levels, the rating level for stress was divided into 4 levels of stress according to the score range: 0 - 23 points, low level stress; 24 - 41, moderate stress; 42 - 61, high level stress; 62 points or more, severe stress. The stress assessment was tested with undergraduate students of Thailand National Sports University Chonburi Campus in Academic Years 2021, consisting of 30 students found reliable by using coefficient Cronbach's alpha coefficient, which had a reliability of 0.90.

2.5 Data Analysis

The data were then analyzed in terms of mean, standard deviation and stepwise multiple regression analysis to test the hypothesis by statistical significance at the level of .01

2.6 Hypothesis

At least one variable can predict the stress of online learning due to COVID-19 in the Faculty of Education, Thailand National Sport University Chonburi Campus.

3. Results

1) The stress of online learning due to COVID-19 in the Faculty of Education, Thailand National Sport University Chonburi Campus was at a moderate level.

Table 1. The Stress of Online Learning due to COVID-19 in the Faculty of Education, Thailand National Sport University Chonburi Campus (n = 280)

level	f	%
Mild level of stress	25	8.93
Moderate level of stress	159	56.78
High level of stress	95	33.93
Severe level of stress	1	0.36
The stress was at a moderate level. ($\bar{X} = 40.61, S = 9.30$)		

2) The emotional and mental well-being, perceived severity of stress, perceived usefulness of stress management, university policies that promote stress management, environment, and social support was at a high level, and opportunity for risk of stress moderate level.

Table 2. Mean, Standard Deviation of the Emotional and Mental, Opportunity for Risk of Stress, Perceived Severity of Stress, Perceived Usefulness of Stress Management, University Policies that Promote Stress Management, Environment, and Social Support (n = 280)

factors	\bar{X}	S	level
1. The emotional and mental (X_1)	4.01	0.32	high
2. Opportunity for risk of stress (X_2)	2.40	0.68	moderate
3. Perceived severity of stress (X_3)	4.08	0.35	high
4. Perceived Usefulness of stress management (X_4)	3.88	0.58	high
5. University policies that promote stress management (X_5)	3.90	0.60	high
6. Environment (X_6)	3.86	0.45	high
7. Social support (X_7)	3.85	0.57	high

3) The result of the analysis of the variance found that there are 4 factors affecting stress of online learning due to COVID-19 in the Faculty of Education, Thailand National Sport University Chonburi Campus, with statistical significance at the level of .01

Table 3. Analysis of Variance of Factors Affecting Stress of Online Learning due to the COVID-19 Situation at Faculty of Education, Thailand National Sport University Chonburi Campus

Anova	SS	df	MS	F	p
Regression	17127.169	4	4281.792	167.727**	.000
Residual	7020.287	275	25.528		
Total	24147.456	279			

**p < .01

4) There were 4 factors related to the factors affecting stress of online learning due to COVID-19 in the Faculty of Education, Thailand National Sport University Chonburi Campus: the achievement received usefulness of stress management, opportunity for risk of stress, university policies that promote stress management, and social support. They were statistically significantly difference at the 0.1 level. These 4 factors could predict the stress about percentage of 70.50.

Table 4. Factors Affecting Stress of Online Learning due to the COVID-19 Situation at Faculty of Education, Thailand National Sport University Chonburi Campus

Predictors	b	Std. Error	β	t	p
Constant	75.425	4.026	-	18.736	.000
1. Perceived Usefulness of stress management (X4)	-5.180	1.042	-.324	-4.970**	.000
2. Opportunity for risk of stress (X3)	3.816	.585	.280	6.526**	.000
3. University policies that promote stress management (X5)	-3.465	.632	-.225	-5.483**	.000
4. Social support (X7)	-2.689	1.025	-.165	-2.622**	.009
Adjusted R2 0.705					

**p < .01

The significantly predicted equations were as follows:

In terms of raw scores:

$$Y' = 75.425 + (-5.180) (X_4) + 3.816 (X_3) + (-3.465) (X_5) + (-2.689) (X_7)$$

Linear regression shows that the constant of affecting stress of online learning due to COVID-19 was 75.425. If the factor of perceived usefulness of stress management increases by 1, it is expected that stress will reduce by 5.180. If Opportunity for risk of stress increases by 1, it is expected that stress will increase by 3.816. If university policies that promote stress management increases by 1, it is expected that stress will reduce by 3.465. Lastly, if social support increases by 1, it is expected that stress will reduce by 2.689.

In term of standard scores:

$$Z/Y = (-0.324) (Z X_4) + 0.280 (Z X_3) + (-0.225) (Z X_5) + (-0.165) Z X_7$$

Standard linear regression shows that if perceived usefulness of stress management increase by 1 standard score, it is expected that stress will decline by 0.324 standard score. If opportunity for risk of stress increases by 1 standard score, it is expected that stress will increase by 0.280 standard score. If university policies that promote stress management increases by 1 standard score, it is expected that stress will decline by 0.225 standard score. Lastly, if social support increases by standard score, it is expected that stress will decline by 0.165 standard score.

4. Discussion and Conclusions

It is found that for factors affecting stress of online learning due to the COVID-19 situation with a significance level of .01. Those factors, ranked in order of severity of effect, are: perceived usefulness of stress management, opportunity for risk of stress, university policies that promote stress management, and social support. These four factors are able to cooperatively predict 70.50 percent of stress, as hypothesized. Each of the factor are discussed below.

1) Perceived usefulness of stress management is the most important factor in predicting stress levels among students in the Faculty of Education, Thailand National Sports University, Chon Buri Campus. Being aware of the usefulness

of stress management helps students gain knowledge, ideas, and strategies to relieve stress properly. It can also help prevent stress. Stress management is able to relieve and even prevent stress through activities such as exercises, relaxing massage, eating meals (especially with others), promoting sense of humor, positive thinking, recreation, laughing, deep breathing, and meditation. This agrees with Tantanakul & Pramote (2017) who found that stress among students is a problem greatly affecting the students themselves as well as their families, academy, and society at large. Khamwong, Plangpongpan & Yamboonruang (2016) found stress management activities that are significantly related to severity of stress; stress management by expressing our emotions ($r=0.16$) and listening to music ($r=0.11$). This is consistent with Altın (2018). It can be said that leisure-time strategies may differ according to school type. Furthermore, the vocational education students were more optimistic than the students of other school types in terms of determining leisure-time strategies. It is thought that extending the scope of studies for coping with stress through leisure-time activities in different age groups, teaching levels, departments and areas is important in terms of creating an awareness of recreational consciousness. Oducado, Rabacal, Moralista & Tamdang (2021) demonstrated that more than half of teachers experienced moderate COVID-19 stress. Women experienced significantly higher COVID-19 stress compared to men. A negative correlation was noted between self-rated health and COVID-19 stress, while a positive correlation was found between the perceived risk of getting COVID-19 infection and COVID-19 stress. This study highlights that steps must be undertaken to help teachers deal with the stress of the COVID-19 crisis; they must also be provided with or taught stress management interventions during this pandemic. Oducado & Estoque (2021) found that the undergraduate nursing students considered online learning during the COVID-19 outbreak to be stressful (44.4%) and very stressful (47.2%). The students' academic performance were affected by the COVID-19 pandemic: online learning stress had a significant and inverse correlation with online learning satisfaction ($p=0.000$) and academic performance ($p=0.012$). From this we can conclude that stress negatively impacts the undergraduate nursing students' satisfaction and academic performance.

2) Opportunity for risk of stress is the second factor in predicting stress level among students in the Faculty of Education, Thailand National Sports University, Chon Buri Campus. This is due to the fact that insufficient rest, lack of exercise, and addiction to alcohol, cigarettes, drugs, and gambling contribute to bad health. They can also lead to financial problems, anxiety, and isolation. Obsession with learning and a bad environment are causes of stress. This agrees with Vatanasin (2010) who found that health conditions were the cause of 33% of stress, citing lack of rest as the most important. Chaiwond (2018) also found that finance issues, relationships with professors, and health conditions are causes of stress for students in the Faculty of Nursing, Western Buriram University. Mofatteh (2020).

It is well-known that prevalence of stress, anxiety, and depression is high among university undergraduate students in developed and developing countries. Six different themes of risk factors were identified: psychological, academic, biological, lifestyle, social and financial. Different risk factor groups can have different degrees of impact on students' stress, anxiety, and depression. Each theme of risk factor was further divided into multiple subthemes. Risk factors associated with stress, depression and anxiety among university students should be identified early in university to provide them with additional mental health support and prevent exacerbation of risk factors.

3) University policies that promote stress management is the third factor in predicting stress level among students in the Faculty of Education, Thailand National Sports University, Chon Buri Campus. This is because the university appropriately manages learning and free-time schedules and regularly holds stress-relief activities. This agrees with Thitirattanachot et al, (2014), who studied mental health and stress among students of Ubon Ratchathani University. They found that students are generally mentally healthy. The university implemented guidelines to help with stress relief and mental health problems by creating an environment suitable for relaxing and providing exercise activities and mental health care in case of problems. Aungsawat, Yimsakul, & Labmala, (2015) also found correlations between academy management and stress in the operation of Primary Educational Service Area 1, Samut Prakan. Serdar (2019) also found negative correlations between organization management and stress. This is consistent with Lyken-Segosebe (2017), whose findings reveal that students experienced lowered self-confidence and acculturative stress as a result of challenges encountered during their first year, language barriers, different teaching styles and teaching environments, and their interactions with professors. Raising faculty sensitivity to cultural differences among international students, early-adjustment counseling, and obtaining regular feedback are recommended. Ramnarain, Pieters & Wu's (2021) findings teacher makes use of ICTs to guide learners to self-explore and independently construct their science knowledge. Executives should review their teacher development programmes for pre-service science teacher preparedness in harnessing the affordances of ICT in their teaching. Executives should review their teacher development programmes for pre-service science teacher preparedness in harnessing the affordances of ICT in their teaching. Coker (2020) states that the policies operate on the notion of a progressive curriculum, with the values of equity, access, and adaptations driving the planning process. There are five variables

national policies utilized to operationalize the progressive curriculum and values: organizing, staffing, scheduling, envisioning, and vulnerabilities. A case study using an individual school district examined the impact on learning within the framework of the policies. Recommendations to improve online and remote learning follow.

4) Social support is the fourth factor in predicting stress level among students in the Faculty of Education, Thailand National Sports University, Chon Buri Campus. This is due to the fact that love, understanding, and support from families, parents, professors, and friends can help relieve stress among students. This agrees with Wongprach (2018), who found that high levels of social support have a statistically significant negative correlation to stress among students. Fukfon, Sriwichai, Chairinkhom, & Tanyapansin (2018) also found that relationship factors between professors and students has a negative correlation to stress, with a significance level of .01. Acuña & López-Aymes (2016) found that the condition with social regulatory support promoted higher quality concept maps; however, the social regulatory support had a significant effect on the levels of collaboration perceived by the team members. In the conclusions are pointed the reach of these results for the design and implementation of collaborative interventions, based on the use of multimedia materials. Yang & Huang (2021) also found that with a vision of a community with a shared future for mankind, society can join hands to defeat COVID-19 and embrace a bright future. Colleges and universities should bravely shoulder their responsibilities, be open to a new pattern of higher education under the unprecedented changes, and play a greater role in promoting the economic and social development and resolving the common challenges experienced by mankind.

In conclusion, those involved need to focus on student stress. By having a university policy that promotes stress management, avoiding Opportunity for risk of stress. Organize recreational activities between teaching so that students can study happily and have a quality of life in learning. This research suggests that measures should be performed to reduce stress and improve the online teaching-learning processes during the COVID-19.

5. Recommendations

The research found that perceived usefulness of stress management, opportunity for risk of stress, university policies that promote stress management, and social support can work in combination to relieve stress among students in the Faculty of Education, Thailand National Sports University, Chon Buri Campus. The results of this research can serve as a guideline for stakeholders including administration staff, professors, and university employees. They can use this information to plan policies on stress management to promote healthy living in Thailand National Sports University, Chon Buri Campus. Therefore, priority should be given to development of these factors.

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