Factors Predicting Depression, Anxiety, and Stress of Undergraduate Students in the Eastern Region of Thailand*

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Abstract

Purpose: This study aimed to exploring prevalence and predictive factors of depression, anxiety, and stress among undergraduate students in a university, in the eastern region of Thailand.

Design: Correlational predictive design.

Methods: The study samples consisted of 400 undergraduate students from a university in the eastern region were recruited. Groups of disciplines and affiliated faculties were stratified; and six faculties were randomly selected. Eligible students were recruited using convenience sampling. Data were collected by using three self-report questionnaires including socio-demographic data, Depression Anxiety and Stress Scale (DASS-21), and Difficulties in Emotion Regulation Scale - short form (DERS-SF). The collected data were analyzed by binary logistic regression.

Main findings: The results showed that the prevalence rates of depression, anxiety, and stress were in a range of variation from severe to extremely severe levels, percentage of 20.7%, 32.2%, and 15.4% respectively. A factor associated with depression was the difficulties in emotion regulation ($p < .001$). Factors predicting anxiety were the difficulties in emotion regulation ($p < .001$) and a history of physical illness ($p < .05$). Factors predicting stress were the difficulties in emotion regulation ($p < .001$), a history of mental illness ($p < .05$), and experienced stressful events ($p < .001$).

Conclusions and recommendations: The result suggests that more than 15 percent of the students had experienced severe negative emotions including depression, anxiety, and stress. The factor that could predict such negative mood was difficulties in emotion regulation. This study recommended that educational institutions should conduct periodic screening for students' mental health and provide effective counseling services to assist students in dealing with emotional distress and adjust to university life.

Keywords: anxiety, depression, difficulties in emotion regulation, stress, university student

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ปัจจัยทำนายภาวะซึมเศร้า วิตกกังวล และความเครียดของนักศึกษาระดับปริญญาตรีในภาคตะวันออกของประเทศไทย*

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บทคัดย่อ

วัตถุประสงค์: เพื่อศึกษาความชุกและปัจจัยทำนายภาวะซึมเศร้า วิตกกังวล และความเครียด ของนักศึกษาระดับปริญญาตรีในภาคตะวันออกของประเทศไทย

รูปแบบการวิจัย: การศึกษาความสัมพันธ์เชิงทำนาย

วิธีดำเนินการวิจัย: กลุ่มตัวอย่างเป็นนักศึกษาระดับปริญญาตรี จำนวน 400 คน จากมหาวิทยาลัยแห่งหนึ่งในภาคตะวันออกของประเทศไทย กลุ่มของสาขาวิชาและคณะภายใต้กลุ่มสาขาวิชาถูกจัดแบ่งเป็นชั้นภูมิและสุ่มเลือกมา 6 คณะ นักศึกษาที่มีคุณสมบัติเป็นกลุ่มตัวอย่างถูกเลือกเข้ามาด้วยวิธีการเลือกแบบสะดวก เครื่องมือวิจัยประกอบด้วย 1) แบบสอบถามข้อมูลส่วนบุคคล 2) แบบสอบถามภาวะซึมเศร้า วิตกกังวล และความเครียด และ 3) แบบสอบถามความยากในการกำกับอารมณ์ วิเคราะห์ข้อมูลโดยใช้การวิเคราะห์ถดถอยโลจิสติคทวิ

ผลการวิจัย: พบว่านักศึกษามีภาวะซึมเศร้า วิตกกังวล เครียด ในระดับรุนแรงถึงรุนแรงมากคิดเป็นร้อยละ 20.7, 32.2 และ 15.4 ตามลำดับ ปัจจัยที่ทำนายภาวะซึมเศร้าอย่างมีนัยสำคัญทางสถิติ ได้แก่ ความยากในการกำกับอารมณ์ ($p < .001$) ปัจจัยที่ทำนายภาวะวิตกกังวลอย่างมีนัยสำคัญทางสถิติ ได้แก่ ความยากในการกำกับอารมณ์ ($p < .001$) และการมีประวัติการเจ็บป่วยทางกาย ($p < .05$) และปัจจัยที่ทำนายภาวะเครียดอย่างมีนัยสำคัญทางสถิติ ได้แก่ ความยากในการกำกับอารมณ์ ($p < .001$) การมีประวัติการเจ็บป่วยด้านจิตใจ ($p < .05$) และการมีเหตุการณ์ที่ก่อให้เกิดความเครียด ($p < .001$)

สรุปและข้อเสนอแนะ: นักศึกษามากกว่าร้อยละ 15 ของจำนวนนักศึกษาทั้งหมด ประสบกับภาวะอารมณ์ทางลบ ได้แก่ ซึมเศร้า วิตกกังวล และความเครียดในระดับรุนแรง ซึ่งปัจจัยที่สามารถทำนายภาวะอารมณ์ทางลบดังกล่าวอย่างมีนัยสำคัญทางสถิติ คือ ความยากในการกำกับอารมณ์ ผลการวิจัยมีข้อเสนอแนะให้สถาบันการศึกษาควรมีการคัดกรองภาวะสุขภาพจิตของนักศึกษาเป็นระยะๆ และมีบริการการให้คำปรึกษาที่มีประสิทธิภาพ เพื่อช่วยเหลือนักศึกษาในการจัดการกับภาวะทุกข์ทางอารมณ์ และการปรับตัวในการดำเนินชีวิตในรั้วมหาวิทยาลัย

คำสำคัญ: ภาวะวิตกกังวล ภาวะซึมเศร้า ความยากในการกำกับอารมณ์ ความเครียด นักศึกษามหาวิทยาลัย

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Background and Significance

Stepping into the higher education is another life event that exposes students to new challenges in several aspects. Students will have more freedom to make decisions on a variety of issues, such as studying, taking care of themselves, making friends, and interacting with many people from different cultures. Many students must detach themselves from families or social supports for the first time in their lives. These challenges can affect students' mental health. If students are unable to adjust themselves, it may result in mental health problems such as depression, anxiety and stress.[1] An epidemiological study through meta-analysis revealed that the onset of mental illness was most common before age of 14 years and would increase at the highest level in the early adulthood or before age of 25 years.[2] That is, university students were one of the groups who were most vulnerable to mental health problems. A survey of the prevalence of mental health conditions among undergraduate students in the South of Thailand in indicated that the students in academic year 2019 had moderate to very severe depression, anxiety and stress with 45%, 53.9% and 35.4%, respectively.[3] The results were consistent with a study in Hong Kong which found that approximately 68.5% of students had mild to severe depression.[4]

Causal factors of depression, anxiety, and stress among university students result from combination of several biopsychosocial related factor.[5] Biological risk factors included a history of pre-university physical illness, gender, and age.[5] Psychological factors were self-confidence and low self-esteem, history of mental illness before entering university, feeling of loneliness, and difficulties in emotion regulation.[6] Social factors were related to adjustments in learning, such as the amount of work assigned, learning expectation, years of study, relationships with teachers and peers, and university life (such as lack of exercise, substance abuse, alcohol, cigarettes, and inadequate sleep and rest). In addition, a lack of social support in terms of social networks, finances, and income was found as related factor too.[4,7-8] Moreover, the sudden and rapid environmental changes, caused by the COVID-19 outbreak, had affected the increase in mental health problems of students. In China, it was found that 24 percent of students had anxiety disorders; and students who had the COVID-19 infected relatives would have three times more likely to increase their risk of anxiety than those without the COVID-19 infected relatives.[9] A multi-site and cross-sectional survey among 5 public university students from 3 countries (Indonesia, Taiwan, and Thailand) revealed that Thai university students had the highest levels of anxiety during the COVID-19 pandemic.[10] Therefore, early screening for mental health problems and risk management should be performed to reduce students' risk of mental illness during university life.

Although a number of studies have examined the mental health of students at an eastern university, such studies were only surveys within faculties or groups of health sciences and only focused on depression,[11-12] which might have reference limitations to the population. In addition, these studies were conducted before the outbreak of COVID-19, an important accelerating factor to change the mental health of students. Therefore, there is a great need to explore the epidemiological data on mental health among undergraduate students. Literature review regarding biopsychosocial factors was applied as the study framework; accordingly, gender, history of physical illness, history of drinking alcohol, smoking, mental illness, difficulties in emotional control, income insufficiency, experienced stressful events, and average grade were investigated if they could predict depression, anxiety and stress. The results of this study would be helpful in planning and implementing preventive nursing interventions to take a very good care of undergraduate students' mental health.

Objectives

1. To explore the prevalence of depression, anxiety, and stress among undergraduate students.

2. To identify the factors predicting depression, anxiety, and stress among undergraduate students.

Research Questions

1. To what extent was the prevalence of depression, anxiety, and stress among undergraduate students in the eastern region of Thailand?

2. Could the factors including gender, a history of physical illness, a history of drinking alcohol, smoking, a history of mental illness, difficulties in emotion regulation, income insufficiency, experienced stressful events, and cumulative GPA predict undergraduate students' depression, anxiety, and stress?

Methodology

This research was a descriptive cross-sectional study. Its objective was to study the prevalence and factors predicting depression, anxiety, and stress of undergraduate students in the eastern region of Thailand. The sample students were aged 18-25 years, studying at a bachelor's degree level in a university, eastern region of Thailand. The inclusion criteria for participation in the research project were as follows: 1) having Thai nationality, 2) having access to internet services, 3) being able to read and write Thai language well, and 4) willing to participate in the research project.

Population and Sampling

Hair, et al.[13] suggested that the sample size of 400 was sufficient to estimate the model parameters by Maximum Likelihood Estimation. In this study, the sample size was 400.

Educational disciplines were divided into three groups consisting of 23 faculties as follows: 1) Humanities and Social Sciences, 7 faculties, 2) Health Sciences, 7 faculties, and 3) Science and Technology, 9 faculties. Simple random sampling with replacement was used to select 2 faculties from each discipline; that is, 6 faculties were recruited. Then, students from each study faculties were recruited using convenience sampling. Finally, 400 students were included (i.e., Faculty of Humanities and Social Sciences, 133 students; Business school, 30 students; Faculty of science, 83 students; Faculty of Allied Health Sciences, 43 students; Faculty of Pharmacy, 28 students; and Faculty of engineering, 83 students).

Research Instrument

The questionnaire comprised 3 parts as follows:

1. Personal Data Questionnaire was developed by the researchers, which was based on literature review relevant to difficulties in emotion regulation, consisting of gender, age, hometown, religion, educational level, cumulative GPA (GPA), marital status, monthly income, underlying disease, history of mental illness, history of drinking alcohol, history of smoking, and experiencing stressful events in the past 6 months.

2. Difficulties in Emotion Regulation-Short form (DERS-SF) was developed by Kaufman, et al.[14] and translated into Thai by using guidelines for the process of cross-cultural adaptation of self-report measures[15] and validated for structural conformity by using a confirmation model analysis.[16] This questionnaire consisted of 6 components: 1) not accepting or denying one's own emotional response, 2) difficulty in adjusting behavior to achieve set goals, 3) difficulty in controlling impulses, and 4) lack of awareness of one's own emotional state; 5) lack of strategies for regulating emotions; and 6) lack of clarity in identifying emotional states. There were 18 questions in total. The participants were asked how often they had difficulty in controlling their emotions over the past two weeks. Response characteristics include 5 rating estimators: 1 is never or infrequently (0-10%), 2 is sometimes (11-35%), 3 is quite often (35-65%), 4 is often (66-90%), and 5 is almost always or consistently (91-100%). Interpretation of score is taken into account as a whole. The score ranges from 18 to 90 points. The higher the score, the more difficult is to regulate emotions. In this study, Cronbach's alpha coefficient was .85.

3. Depression Anxiety Stress Scale (DASS-21) was developed from the DASS-42 assessment form.[17] It was used to assess emotional distress, including depression, anxiety, and stress that occurred within the past two weeks. Translated into Thai version was used.[18] The questionnaire consists of 21 items with 4-point rating scale indicating how often such emotional distress happened: 0 - never happens, 1 - sometimes, 2 - often, and 3 - very often. Interpretation of scores is calculated separately for each aspect. Each area consists of seven questions, and the score

for each item is multiplied by 2 to make the score consistent with the original DASS-42. Therefore, the score range for each section is between 0 and 42 points.[17] Interpretation of the scores showed in Table 1. In this study, Cronbach's alpha coefficient for depression was .86, anxiety was .79, and stress was .80.

Table 1 Interpretation of DASS-21 score for depression, anxiety, and stress

Interpretation	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild level	10-13	8-9	15-18
Moderate level	14-20	10-14	19-25
Severe level	21-27	15-19	26-33
Very severe level	≥28	≥20	≥34

Ethical Consideration

This research was reviewed and approved by the Human Research Ethics Committee, Burapha University, according to the certificate number IRB1-043/5-2522 dated April 22, 2022. After the project was certified, the researchers conducted data collection on a voluntary basis. The consent of the sample was important. During participating in the research, the sample group had the right to refuse or request to stop participating in the research without having to explain the reason and such termination would not have any effect to the sample. Information obtained from this research would be presented as an overview and used only for academic purposes.

Data Collection

After being approved by the Human Research Ethics Committee and granted permission to begin collecting data, the researchers and a research assistant publicized the project via email and brochures, attracting those who met requirements and wished to participate in the project could apply through a link or by scanning a QR code. After that, the research assistant submitted a document explaining the information about step-by-step instructions for completing the online questionnaire with the link to the participants in the research project. When a research participant clicked in the opt-in box. It would be considered as an automatic consent to participate in the research project. In answering the questionnaire, no name-surname and student identification number were specified in the questionnaires. It took about 30 minutes to complete a survey questionnaire. By completing the survey and clicking on the (Submit Answers) button, the participant could complete participation in this research project. After receiving information from the online questionnaire, the researchers checked the completeness of the data before taking the data for further analysis. Data collection was conducted between May and July 2022.

Data Analysis

The researcher used SPSS version 26 software package to analyze the data as follows: 1) the general data of the sample group used descriptive statistics and presented as number, percentage, mean and standard deviation, and 2) analysis of factors associated with depression, anxiety, and stress among students by using binary logistic regression. In the first step, the researchers adjusted the dependent variables as dummy variables as following: 0 was "no depression, anxiety, and stress," and 1 was "depression, anxiety, and stress" at a mild to very severe level. After that, the investigators used the simple logistic regression analysis to test the pairwise correlation between independent variables: including gender, a history of physical illness, a history of drinking alcohol, smoking, history of mental illness, difficulties in emotion regulation, income insufficiency, experienced stressful life events in the past 6 months, and cumulative GPA, and dependent variables including depression, anxiety, and stress. The independent variables with statistically significant correlation to the dependent variable ($p < .05$) were taken into the analysis by multivariable logistic regression with enter method.

Finding

1. General Information

Most of the samples were female (77.9%) with average age 20.57 years (SD = 1.37). There were 163 samples from the Humanities and Social Sciences group (40.8%), followed by 166 samples from Science and Technology group (41.5%), and 71 samples from Health Sciences group (17.7%). Most of the samples had a good GPA; its mean was 3.16 (SD = .42). Most of the main income came from parents (86.3%); and 68% of the samples had enough income. Fourteen percent of the samples had a history of physical illness; and 5 % reported having a history of mental illness, including depression, anxiety, obsessive-compulsive disorder, panic disorder, and others. Apparently, 91.3 % of the samples experienced stressful events in the past six months. The most common problem was related to education, followed by financial problems and problems related to family relationships, respectively. Regarding the smoking, 83.3% of the samples had never used cigarettes, while 11.3% had a history of smoking and 5.4% still smoked. In terms of alcohol consumption, 30.5% of the samples had never drunk alcohol, while 43% had a history of alcohol abuse and 26.5% continued to drink alcohol.

2. Prevalence of Depression, Anxiety, and Stress

The samples had depression in a range from mild to very severe depression, accounted for 70.7%, the samples had mild to very severe anxiety, 70.7%, and the samples had mild to very severe stress 57.2 %. The prevalence of depression, anxiety, and stress was shown in Table 2.

Table 2 Prevalence of depression, anxiety, and stress (N = 400)

Score Level	Depression n (%)	Anxiety n (%)	Stress n (%)
Normal	117 (29.3)	117 (29.3)	171 (42.8)
Mild	78 (19.5)	42 (10.5)	80 (20)
Moderate	122 (30.5)	112 (28)	87 (21.8)
Severe	45 (11.2)	50 (12.5)	49 (12.2)
Very severe	38 (9.5)	79 (19.7)	13 (3.2)

3. The results of the study of factors related to depression, anxiety, and stress among students

Associations between independent variables and depression using simple logistic regression was showed in Table 3 The result showed that experienced insufficient income, experienced stressful event, and difficulties in emotion regulation were associated with depression. When multivariate analysis was performed, the result presented that only difficulties in emotion regulation could predict depression as showed in Table 4.

Table 3 Logistic regression between independent variables and depression (N = 400)

Variable	BB	SE	p-value	OR	95%CI	
					Lower	Upper
Gender	- .37	.28	.185	.69	.40	1.19
History of physical illness	.60	.36	.092	1.82	.91	3.66
Used to drink alcohol	.36	.26	.157	1.44	.87	2.38
Still drinking alcohol	.33	.29	.251	1.39	.79	2.46
Used to smoking	- .08	.34	.817	.92	.47	1.81
Still smoking	.35	.52	.504	1.42	.51	3.95
History of mental illness	.89	.64	.163	2.43	.70	8.45
Cumulative GPA	- .29	.27	.278	.75	.44	1.26
Insufficiency of income	.69	.24	.004	1.99	1.25	3.16
Experienced stressful life events	1.17	.36	.001	3.24	1.60	6.54
Difficulties in emotion regulation	.13	.02	< .001	1.14	1.10	1.17

Table 4 Multivariate analysis between independent variables and depression (N = 400)

Variable	B	SE	p-value	Adjusted OR	95%CI	
					Lower	Upper
Insufficiency of income	.37	.27	.163	1.45	.86	2.46
Experienced stressful life events	.58	.41	.160	1.79	.80	4.03
Difficulties in emotion regulation	.12	.02	< .001	1.13	1.09	1.17

- 2 log likelihood = 385.87, chi-square (df = 3) = 97.63 (p < .001), Nagelkerke R^2 = .31

Associations between independent variables and anxiety using simple logistic regression was showed in Table 5. The results showed that gender, history of physical illness, experienced stressful event, and difficulties in emotion regulation were associated with anxiety. When multivariate analysis was performed, the result presented that history of physical illness and difficulties in emotion regulation could predict anxiety as showed in Table 6.

Table 5 Logistic regression for associated between independent variables and anxiety (N = 400)

Variable	B	SE	p-value	OR	95%CI	
					Lower	Upper
Gender	.61	.29	.036	1.84	1.04	3.26
History of physical illness	-1.02	.40	.010	.36	.16	.79
Used to drink alcohol	.10	.26	.702	1.10	.67	1.83
Still drinking alcohol	.18	.29	.531	1.20	.68	2.13
Used to smoking	- .34	.33	.311	.71	.37	1.37
Still smoking	- .17	.47	.718	.84	.33	2.13
History of mental illness	1.36	.75	.071	3.91	.89	17.11
Cumulative GPA	.19	.26	.469	1.21	.72	2.03
Insufficiency of income	.36	.23	.120	1.43	.91	2.25
Experienced stressful events	.79	.36	.028	2.20	1.09	4.45
Difficulties in emotion regulation	.10	.01	< .001	1.11	1.07	1.14

Table 6 Multivariate analysis between independent variables and anxiety (n = 400)

Variable	B	SE	P value	OR	95%CI	
					Lower	Upper
Gender	- .51	.31	.103	.60	.32	1.11
History of physical illness	1.04	.43	.017	2.82	1.21	6.56
Experienced stressful events	.29	.40	.467	1.34	.61	2.95
Difficulties in emotion regulation	.10	.02	< .001	1.10	1.07	1.13

- 2 log likelihood = 408.193, chi-square (df = 4) = 75.307 ($p < .001$), Nagelkerke $R^2 = .25$

Associations between independent variables and anxiety using simple logistic regression was showed in Table 7. The results showed that used to drink alcohol, still drinking alcohol, history of mental illness, insufficiency of income, experienced stressful event, and difficulties in emotion regulation were associated with stress. When multivariate analysis was performed, the result presented that only experienced stressful events and difficulties in emotion regulation could predict stress as show in Table 8.

Table 7 Logistic regression between independent variables and stress (N = 400)

Variable	B	SE	p-value	OR	95%CI	
					Lower	Upper
Gender	- .12	.24	.619	.89	.55	1.43
History of physical illness	.53	.31	.086	1.69	.93	3.08
Used to drink alcohol	.47	.24	.051	1.59	1.00	2.55
Still drinking alcohol	.61	.27	.025	1.83	1.08	3.12
Used to smoking	.24	.33	.464	1.27	.67	2.41
Still smoking	.11	.45	.809	1.11	.46	2.68
History of mental illness	1.98	.75	.009	7.21	1.65	31.50
Cumulative GPA	.04	.24	.867	1.04	.65	1.68
Insufficiency of income	.75	.21	< .001	2.12	1.40	3.23
Experienced stressful events	2.03	.46	< .001	7.59	3.07	18.74
Difficulties in emotion regulation	.13	.02	< .001	1.14	1.10	1.17

Table 8 Multivariate analysis between independent variables and stress (N = 400)

	B	SE	P value	Adjusted OR	95%CI	
					Lower	Upper
Still drinking alcohol	.23	.28	.409	1.26	.73	2.17
History of mental illness	1.62	.83	.052	5.06	.99	25.94
Insufficiency of income	.38	.25	.131	1.46	.89	2.40
Experienced stressful events	1.66	.53	.002	5.24	1.87	14.73
Difficulties in emotion regulation	.12	.02	< .001	1.13	1.10	1.17

- 2 log likelihood = 409.60, chi-square (df = 5) = 136.48 ($p < .001$), Nagelkerke $R^2 = .39$

Discussions

From the study of the prevalence of depression and anxiety among undergraduate students of a university in the eastern region of Thailand, it was found that the percentages of the students who had mild to very severe depression, anxiety and stress, were 70.75, 70.75 and 57.25, respectively. In comparison, undergraduate students in the present study had higher rates than those from a university in the south of Thailand,[3] which found that students had depression, anxiety, and stress in the range of moderate to very severe, as percentage of 45, 63.4, and 35.2 respectively. It could be explained that this study was a survey of mental health during the

post-COVID-19 pandemic, in which students needed to adjust to a new normal course of action in various issues including learning approach, from online-learning to onsite-learning, and building relationships between friends after a long-time home quarantine. It included the increased expense of living cost that caused students financial difficulties. From this study, it was found that most students had experienced stressful events in the past 6 months. The most common problems were study problems subsequently followed by financial problems and family relationship problems, respectively. In similar trend was the study in Bangladesh where data were collected during the same period. The Bangladesh study found that college students had depression, anxiety, and stress accounted for 69.6, 56.7 and 52.6 percent, respectively.[19]

The study of factors influencing depression, anxiety and stress among students found that the difficulty in mood regulation was associated with depression, anxiety, and stress, with statistical significance. The finding emphasized that emotion regulation, which is the individual ability to regulate emotion using internal and external processes in response to which negative emotions they encounter, has a crucial role in mental health and social functions. Individuals who can regulate their emotions by means of monitoring, evaluating, and regulating in adaptive ways, are able to maintain their mental health function and decrease the risks of mental health problems resulting in the achievement of their desired goals.[20] On the other hand, those who have difficulties in emotion regulation are likely to lack cognitive awareness, understanding, and accepting their current emotional state, and the ability to inhibit inappropriate behavior while experiencing negative emotions; and they are also unable to use flexible and situational emotional regulation strategies to achieve their own goals. People who have difficulty in regulating their emotions or having inappropriate mood regulation patterns might affect their social functions such as building relationships in society, emotional expression, and might lead to develop a group of psychological ailments, such as depression, anxiety disorders, borderline personality disorder, eating disorder, substance abuse behavior, self-harm behavior, and aggressive behavior.[21-23]

From this study, it was also found that the personal factors that were statistically related to mental health status were the history of physical illness. Students with history of physical illness were more likely to develop anxiety than those without illness history. When other factors were kept constant like college students with a history of mental illness and having stressful events were more likely to experience stress than those with no history of mental illness and no stressful events in the past six months. The findings of this study were consistent with a systematic review of international literature which reported that a history of physical illness before

entering university, a history of mental illness before entering university, adaptability in learning, relationships with teachers and friends during university life, lack of social support sources including both social networks and income insufficiency were important for increasing the risk of depression, stress and anxiety.[7]

The results of this study reflect that bio-psychosocial factors are important factors that may increase a person's vulnerability in adaptation and coping with problems in everyday life, which can contribute to development of emotional distress, such as depression, anxiety, and stress among students.

Conclusion and Recommendations

This study had explored the prevalence and the associated factors of depression, anxiety, and stress among undergraduate students in the eastern region of Thailand. The study found that more than half of the students had experienced negative emotional states, including depression, anxiety, and stress. The study also found that there were statistically different factors influencing these negative emotions including difficulties in emotion regulation, a history of physical illness, a history of mental illness, and experiencing stressful events. Moreover, difficulty in emotion regulation was the only factor that could significantly predict all three negative mood states.

Suggestions and Recommendations

Educational institutions should regularly screen students for mental health conditions, both at the entry into a program and during study periods. They should also establish mental health service centers for providing efficient consultancy with easily accessible and quick service. The purposes of the service were to assist students to deal with emotional suffering and to adjust themselves to have better lives in university. They should provide students with supportive resources including educational funds, and extra-curriculum activities, promoting relationship between students and faculties.

Suggestion for Further Study

To contribute to the emotional development and mitigate long-term mental health problems among students, the researchers would suggest that emotional regulation program for undergraduate students be developed and tested its effectiveness using an experimental research study.

Limitations of the Study

This study was a survey of the prevalence of depression, anxiety, and stress among undergraduate students in the eastern region of Thailand, between May and July 2022, which the period of the Covid-19 situation was unraveling. During this time, students needed to adjust themselves to a new normal lifestyle that was different from the past (New Normal) after having been confined to home and studying online for an extensive period. In addition, the study used the Depression, Anxiety and Stress Scale (DASS-21);

the tool was designed for, not disease classification but assessing negative mood in general population. Thus, interpretation and application of the research results should be cautious with a concern of such limitations.

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