

General

Prevalence of depression and stress among the first year students in Suranaree University of Technology, Thailand

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The objectives of this study were to evaluate the level of depression and stress among the first-year students at Suranaree University of Technology (SUT) and to compare the level of depression and stress among the samples, classified by demographic factors, including gender, domicile, and problem. This research has been approved by the SUT's Research Ethics Committee. The study period was between July and August 2018. The online, self-report questionnaire was used as a research instrument to collect data from the sample of SUT first-year students. The total number of first-year students at SUT was 3,552 and the response rate was 65.15%. The major findings revealed that 7.0% and 51.1% of them were suffering from depression, and pathological stress, respectively. In addition, the prevalence of depression and pathological stress was higher in female samples than in other gender groups. The findings would suggest that related activities should be organized to promote students' awareness of their suffering and self-control in order to prevent further depression and pathological stress.

INTRODUCTION

Daily stress is unavoidable. It can happen to anyone, which helps to raise awareness, promote learning, and make work more successful.¹ Adolescence is a developmental stage that lasts from childhood to adulthood and is associated with a higher risk of mental health problems due to the need to adjust to rapid changes in physical, emotional, and social environments.² Stress, anxiety, depression, and suicide are all common psychological problems in teenagers.³ Teenagers are affected by mental health issues in a variety of ways, including the effects of stress on self-efficacy. Female students who are under a lot of stress have a low sense of self-efficacy.⁴

Excessive stress can have a negative impact on both physical and mental health, as well as self-esteem and the success of learning and self-development.⁵ Simultaneously, it was discovered that stress has an impact on adolescent development. Children who exhibit aggressive behavior, a lack of enthusiasm, isolation from society, and suicidal thoughts are less likely to concentrate on their studies.⁶ University students frequently face a variety of stressful sit-

uations and preoccupations, such as their first contact with the university, and the freedom to organize their schedule.⁷

Approximately 60% of depressed young people report their suicidal thoughts, and 30% have attempted suicide.⁸ According to the World Health Organization (WHO), depression will have the highest global disease burden by 2030, accounting for 6.2% of all diseases (second by ischemic heart disease). According to WHO, depression is the leading cause of lost years of healthy life for women aged 15 to 44.⁹ And one of the leading causes of suicide is depression. The Department of Psychiatry, Faculty of Medicine, Naresuan University, Thailand, surveyed Naresuan university students in 2013 about depression and suicidal behaviors. It was discovered that the lifetime incidence of suicidal attempts and self-injury were 6.4% and 12.1%, respectively.¹⁰

In order to prepare for their careers, university students must adapt to a variety of psychological changes in addition to dealing with academic and social requirements.¹¹ According to a health survey, young people between the ages of 12 and 25 have insufficient mental health problems.¹² When students of the same age were compared, it was discovered that they had more mental health problems than

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the general population.^{13,14} Depression, anxiety, stress, and sleeping disorders were among the issues.^{15–18} In 2018, the study by Bruffaerts et al. on mental health problems in Belgian college freshmen found that freshmen had mental health problems in the previous 12 months, that these problems were directly associated with lower academic performance, and that freshmen are more likely to develop depression because they are in a transition period and face many unexpected situations and problems.¹⁹

The previous research discovered that depression and anxiety scores were significantly higher among older students (20 and above) and those born in rural areas when they studied the correlations between depression, anxiety, and stress among Malaysian university students.²⁰ Higher stress levels, on the other hand, were significantly higher among older students (20 and up), females, Malays, and those from families with either low or high incomes compared to those from middle-income families. Another study found that females had a significantly higher prevalence of three stressful life events than males: relocation, the break-up of a significant relationship, and illness. Females experienced a suicide risk, a relationship break-up, illness, and college relocation, whereas males experienced a similar situation but without the relationship break-up.²¹ According to a meta-analysis, depression is significantly more common among students from rural backgrounds than those from urban backgrounds, and the prevalence varies with the number of siblings in the family.²² In 2016, Deb et al. discovered that 37.7%, 13.1%, and 2.4% of students suffered from moderate, severe, and extremely severe depression, respectively.²³ There was a correlation between semesters, with semester II reporting a higher level of depression than semester III. Furthermore, some researchers discovered that female students had a higher level of depression than male students, and morbidities were higher in females than males, whereas other studies found no significant differences between genders.^{20,23–26} In 2017, Saleh et al. studied stress predictors in French college students and discovered that more than half of the sample had low self-esteem, little optimism, and a low sense of self-efficacy.⁷ They also discovered that the most important predictors of stress were life satisfaction, self-esteem, optimism, self-efficacy, and psychological distress.

To prevent mental health problems and to assist students who are at risk of developing mental health problems. As a result, the researcher is interested in investigating the prevalence of depression and stress among first-year students at the Suranaree University of Technology, the results of which are critical in understanding the level of depression and stress. In addition to bringing results to support and promote activities for students, including ways to prevent and promote student mental health. In this regard, the objectives of this study were 1) to explore the prevalence of depression and stress among first-year students, 2) to examine the possible relationships between depression, stress, and demographic factors including gender, domicile, and their problem, and 3) to explore the correlation between depression and stress.

MATERIALS AND METHODS

PARTICIPANTS

The design was a cross-sectional study. The sample was the first-year students of SUT in 2018. An online questionnaire was used to inquire about data from the sample between July and August 2018, which was during the orientation activity period. Each participant was evaluated at the beginning of the first semester. The response number was 2,314 replies. This study had officially received ethic approval from the Research Ethics Committee of Suranaree University of Technology (Thailand), Approval EC COA No. 57/2561.

ASSESSMENT TOOLS

Demographic information: The first part of the survey contained items about the sociodemographic conditions of the respondents, including gender, age, residence, domicile, and problem. Furthermore, depressive and stress symptoms were assessed using well-established instruments.

Questionnaire for depression assessment: Rodloff's Center for Epidemiologic Studies Depression (CES-D) scale was used to assess depression symptoms.²⁷ The CES-D depression module is a set of self-administered screening instruments. Trangkasombat U et al. in Thailand created a Thai version of this tool.²⁸ Each CES-D item is scored from 0 (rarely or never (less than 1 day)) to 3 (most or all of the time (5–7 days)), with the exception of questions 4, 8, 12, and 16. Scores range from 0 to 60. A score of 22 or higher is considered depressed. The Cronbach's alpha coefficient is 0.86. The study of classification reliability found that samples diagnosed with depression had a significantly higher CES-D score than those who were not.

Questionnaire for stress assessment: Suanprung stress test (SPST-20) from Suanprung Hospital, Thailand was used to assess stress. Each item is scored from 1 (not at all) to 5 (extremely severe). Cronbach's alpha coefficients is 0.7. According to Mahatnirunkul et al., the scores can be interpreted as follows: 0 – 24: mild stress, 25 – 42: moderate stress, 43 – 62: high stress, 63 and above: severe stress.²⁹ We categorized stress levels into 4 groups: low, moderate, high, and severe stress. We also categorized stress levels into 2 groups: normal stress and pathological stress, in which normal stress includes low and moderate stress and pathological stress includes high and severe stress.

DATA ANALYSIS

Statistical analyses were performed using the SPSS Statistics 17 (IBM, Chicago, IL, USA) software. Sociodemographic variables were reported through descriptive statistics. Relationships between variables was analyzed by using the Pearson Chi-Square and Pearson correlation coefficient. Logistic Regression Analysis was performed to understand which variables predict the presence of depression and stress.

Table 3. Results from multivariable analysis with adjusted prevalence odds ratios and 95% Confidence Interval (CI): Depress and Stress Group.

Variables	Depress			Stress		
	OR	(95% CI)	P-value	OR	(95% CI)	P-value
Gender						
LGBT		1.00 (reference)			1.00 (reference)	
Male	0.73	(0.29-1.83)	0.50	0.50	(0.23-1.11)	0.09
Female	0.72	(0.29-1.81)	0.49	0.56	(0.26-1.23)	0.15
Domicile						
West		1.00 (reference)			1.00 (reference)	
North East	0.40	(0.13-1.17)	0.09	0.63	(0.22-1.77)	0.38
Central	0.42	(0.14-1.29)	0.13	0.63	(0.22-1.83)	0.40
North	0.34	(0.10-1.10)	0.07	0.86	(0.29-2.57)	0.78
South	0.56	(0.16-2.00)	0.37	0.68	(0.21-2.19)	0.52
East	0.49	(0.16-1.54)	0.22	0.59	(0.20-1.73)	0.33

RESULT

The total number of first-year students was 3,552 and respondents was 2,314 (the response rate was 65.15 %). The demographic and clinical characteristics of respondents were summarized in [Table 1](#). The majority of respondents came from the North East. Mostly lived in the campus dormitories (98.57%), female (59.98%), and 18-19 years old (97.84%). Our findings revealed that the top 3 problems were learning problems (35.87%), adaptation in university problems (29.47%), and financial problems (21.82%). The score of CES-D was evaluated. The prevalence of depression was 17.03%. The severity of stress was evaluated. The data showed that 3.59%, 47.54%, 37.81%, and 11.06% of the students were low, moderate, high, and severe stress, respectively.

The analytic results of the relationship between various risk factors that affect depression and stress showed that factors affecting the participants were their problems as shown in [Table 2](#). When considering all factors studied (gender, domicile, and problem), we found that problems were the most influential factor affecting the participants' depression and stress. The analysis was conducted by using multivariable and binary logistic regression analysis with a significant level ($p = 0.05$). Results were significant as shown in [Tables 3](#) and [4](#). Correlations of depression and stress did not show any association as shown in [Figure 1](#).

DISCUSSION

This study examined the prevalence of mental health problems among university students. The prevalence of depression in first-year students at Suranaree University of Technology was 17.03%, which was higher than the rates at other Thai universities (11.5–12.2 %).³⁰ The disparity in results could be attributed to the use of different assessment tools and a different area. This study used the same assessment form as Frerichs et al. who discovered a 19.1% prevalence of depression among adolescents at the university level.³¹ This study, however, focuses on first-year students, whereas

both research studies look at the prevalence of undergraduate students aged 18 to 24. When compared to Southeast Asia statistics, females had higher rates of depression than males, at 5.1% and 3.8%, respectively.³²

This study found that 51.1% of students had normal stress (3.6% had low stress and 47.5% had moderate stress) and 48.9 % had pathological stress (37.8% high stress and 11.1% severe stress). This stress is less prevalent than the 72.9% prevalence in French and the 57.2% prevalence in Chandigarh.⁷ Their study's goal was to evaluate a model of stress vulnerability in college students. They give the word distress a wide range of meanings. However, when we compared this finding to other universities in Thailand, we discovered that it was lower compared to the prevalence of 27.5% severe stress at Navamindradhiraj University.³³ This could be due to the population studying ethnicity, environment, and various courses of study at various universities.

Female students were reported to be more depressed than male students in this study, and the results were consistent with the previous study.^{34–37} We discovered that females were more likely to suffer from depression than males in the CES-D screening test questionnaire for depression assessment, which is consistent with commonly reported depression rates. As a result, the researchers considered the nature of the CES-D questionnaire regarding feelings and emotional expression. Females can express their emotions more effectively than males. However, gender differences in depression were not significant, which is consistent with the findings of Sibnath Deb et al.²³

Dr. Thawabieh's study revealed that university students experienced moderate stress, which contrasts with our findings. The other stress study discovered that female students were more stressed than male students, with the same outcome.^{20,38–40} Females, according to the researchers, have a thoughtful, useless, or overthinking personality. We discovered no association between depression and stress in this study's analyses. However, there was a link between the problem and depression and stress. For example, an academic problem, a family problem, a university adjustment problem, a friend relationship problem, or a physical health problem. Maggie Zgambo et al. discovered that children and

Table 1. Demographic and clinical characteristics of respondents

Characteristics	N	%
Gender		
Female	1,388	59.98
Male	898	38.81
LGBT	28	1.21
Age (Years)		
18-19	2,264	97.84
20-21	45	1.94
> 22	5	0.21
Residence		
Dormitory in University	2,281	98.57
Dormitory/Home out University	33	1.43
Domicile		
North East	1,749	75.58
Central	231	9.98
North	152	6.57
South	117	5.06
East	50	2.16
West	15	0.65
Problems		
Academic	830	35.87
Adjustment in the university	682	29.47
Finance	505	21.82
Relationship with friends	254	10.98
Physical health	201	8.69
Family	175	7.56
Entrance examination system	157	6.78
Relationship with boy-/girl-friend	101	4.36
Depression Level		
Normal	1,920	82.97
Depression	394	17.03
Stress Level (4 Groups)		
Low	83	3.59
Moderate	1,100	47.54
High	875	37.81
Severe	256	11.06
Stress Level (2 Groups)		
Low to Moderate (Normal Stress)	1,183	51.12
High to Severe (Pathological Stress)	1,131	48.88

adolescents who do not live with their parents have higher levels of depressive symptoms than those who do live with their parents.⁴¹ According to Greenberger and colleagues, strong positive family relationships can alleviate depression symptoms.⁴² However, the nature of family problems that cause depression has not yet been investigated in this study. This is an intriguing topic for further investigation. In the future, we should conduct qualitative research to learn about the causes of depression and stress, as well as the coping mechanisms in depression and stress.

Our findings suggest that university students should be monitored and encouraged to be aware of their emotions and negative thoughts, which can lead to symptoms of depression/stress in university life. It is possible to prevent further depression if activities are organized to encourage students to recognize depression and learn to control their temper. Depression in men in its early stages does not correspond to the textbook's description. It is frequently characterized by irritability, anger, hostility, aggression, risk-taking, and substance abuse.⁴³ A major depressive episode is distinguished by "depressed mood" and "loss of interest

Table 2. Analysis of factors affecting depress and stress

Variables	Depress			Stress		
	Normal N (%)	Depress N (%)	P- value	Normal Stress N (%)	Pathological Stress N (%)	P- value
Gender						
Male	745 (38.80)	153 (38.83)	0.82	475 (40.15)	423 (37.40)	0.12
Female	1,153 (60.05)	235 (59.64)		698 (59.00)	690 (61.01)	
LGBT	22 (1.15)	6 (1.52)		10 (0.85)	18 (1.59)	
Domicile						
North East	1,457 (75.92)	291 (73.86)	0.39	900 (76.14)	848 (74.98)	0.58
Central	191 (9.95)	40 (10.15)		119 (10.07)	112 (9.90)	
North	100 (5.21)	17 (4.31)		51 (4.31)	66 (5.84)	
South	39 (2.03)	11 (2.79)		25 (2.12)	25 (2.21)	
East	122 (6.36)	30 (7.61)		81 (6.85)	71 (6.28)	
West	10 (0.52)	5 (1.27)		6 (0.51)	9 (0.80)	
What is your problem						
Academic	562 (67.71)	268 (32.29)	0.00*	264 (31.81)	566 (68.19)	0.00*
Adjustment in the university	452 (66.28)	230 (33.72)	0.00*	213 (31.23)	469 (68.77)	0.00*
Financial	330 (65.35)	175 (34.65)	0.00*	134 (26.53)	371 (73.47)	0.00*
Relationship with friends	125 (49.21)	129 (50.79)	0.00*	58 (22.83)	196 (77.17)	0.00*
Physical health	109 (54.23)	92 (45.77)	0.00*	36 (17.91)	165 (82.09)	0.00*
Family	76 (43.43)	99 (56.57)	0.00*	27 (15.43)	148 (84.57)	0.00*
Entrance examination system	94 (59.87)	63 (40.13)	0.00*	46 (29.30)	111 (70.70)	0.00*
Relationship with boy-/girl- friend	56 (55.45)	45 (44.55)	0.00*	26 (25.74)	75 (74.26)	0.00*

* Statistical significance at the level of 0.05

Table 4. Results from Binary Logistic Regression with adjusted prevalence odds ratios and 95% Confidence Interval (CI): Depress and Stress Group.

Problems	Depress			Stress		
	OR	(95% CI)	P-value	OR	(95% CI)	P-value
Academic	0.47	(0.34-0.64)	0.00*	0.57	(0.45-0.74)	0.00*
Adjustment in the university	0.69	(0.50-0.94)	0.02*	0.76	(0.59-0.99)	0.04*
Finance	0.85	(0.63-1.14)	0.27	0.60	(0.46-0.78)	0.00*
Relationship with friends	0.38	(0.28-0.53)	0.00*	0.66	(0.47-0.94)	0.02*
Physical health	0.57	(0.40-0.82)	0.00*	0.44	(0.30-0.66)	0.00*
Family	0.28	(0.19-0.40)	0.00*	0.36	(0.23-0.56)	0.00*
Entrance examination system	0.72	(0.49-1.07)	0.10	0.91	(0.61-1.36)	0.66
Relationship with boy-/girl-friend	0.80	(0.50-1.29)	0.36	0.96	(0.58-1.58)	0.86

* Statistical significance at the level of 0.05

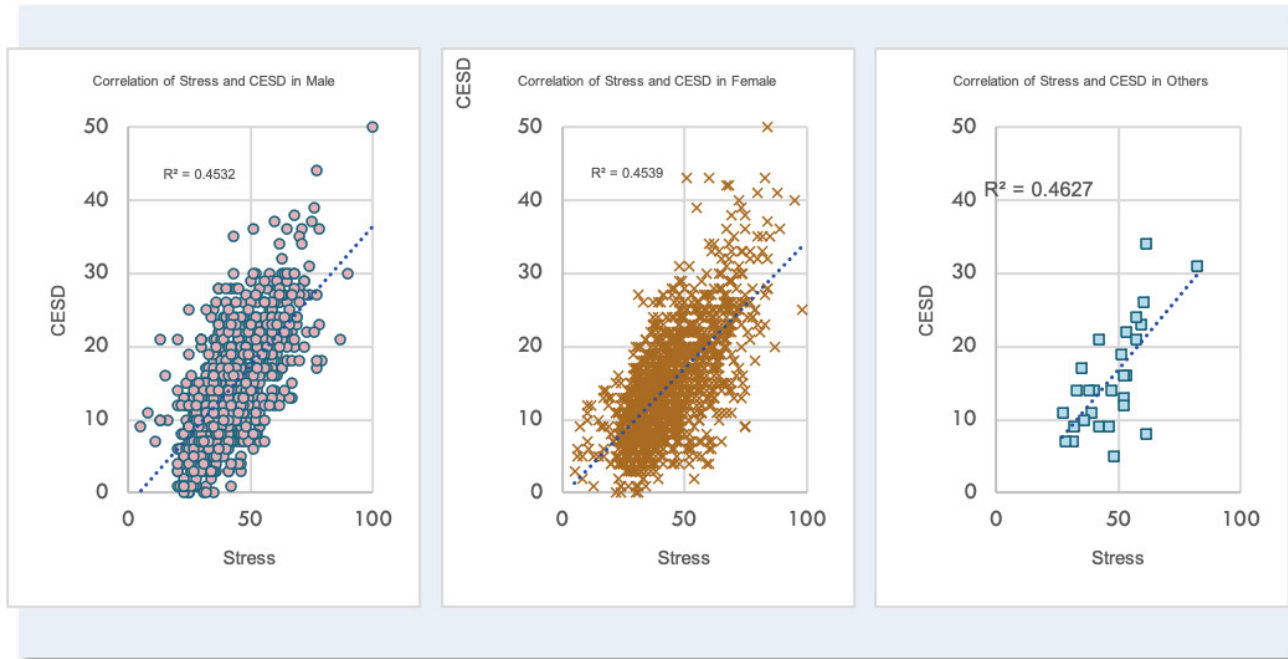


Figure 1. Correlation between depression and stress

or pleasure in nearly all activities”.⁴⁴ A study of “A mindfulness-based intervention to increase resilience to stress in university students” in stress found that mindfulness practice may be an effective component in increasing resilience to stress in university students.⁴⁵

This study is quantitative research. As a result, there is a lack of in-depth information on the subject of understanding the causes of depression and stress. To better understand the environmental factors, future studies should conduct qualitative research. This study did not assess variables that may endanger students, such as suicide risk. Activities should be organized for students who are depressed, whether they are severely stressed or not. To prevent other mental health problems and to organize the health service structure so that students can easily access a consulting service unit in their field of study. Initial advisor skills training for counseling students should be provided. Prior to entering the university, a screening system should be established, as well as a survey of students’ mental health problems. A policy should be formulated to prevent and promote mental health, as well as to monitor mental health issues.

CONCLUSION

Our findings indicated that the risk of depression in freshmen was higher at our university than at other Thai universities. We discovered that prevalence of depression was 17% of the population. However, severe stress in SUT was 11.1%, which was lower than in other Thai universities. It is unavoidable for first-year students to experience stress as they adjust to their new social and educational environment, and this stress is always at risk of leading to depression. In our study, we discovered no association between depression and stress. Future mental health interventions to strengthen cognitive abilities and coping among students are needed to consider gender differences as well as the needs of students with different problems. Our findings would be beneficial as guidelines for psychological providers in identifying new students at risk of depression and providing systematic

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