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Prevalence of and Factors Associated with Depressive Symptoms Among Students in a Life Science Program in Northern Thailand

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ABSTRACT

Introduction: Depressive symptoms is a sign of a mental health problem that causes a persistent feeling of sadness and a loss of interest in activities, and it can cause emotional, functional and physical problems and progress to severe depression. **Objectives:** This study aimed to estimate the prevalence of and identify the factors associated with depressive symptoms among students attending a life science program at a university located in Chiang Rai Province, Thailand. **Methods:** An analytic cross-sectional study was conducted from September to December 2019. A random method was used to select the participants. A validated questionnaire was used to collect socioeconomic information about the participants, and a health questionnaire (PHQ-9) was used to assess the participants' depressive symptoms. Logistic regression was applied to determine the association between the variables at a significance level of α=0.05. **Results:** Of 270 students, 160 participants were recruited for the study; 87.5% were female, 43.8% reported that they did not have enough money to support their daily life, 10.0% had a family conflict, 30.6% had been subjected to bullying, and 15.6% reported that they did not consult anyone when facing a problem. The prevalence of depressive symptoms was 20.6%. After controlling for sex and age, two variables were found to be associated with depressive symptoms: family conflicts and having experienced being bullied by peers. Those who had a family conflict were more likely to have depressive symptoms than those who did not (AOR = 4.90, 95% CI = 1.46–16.38), and those who had been bullied were more likely to have depressive symptoms that those who had not (AOR = 3.24, 95% CI = 1.39–7.54). **Conclusion:** Improvements in family member relationships and minimizing bullying among peers at the university are urgently required interventions for preventing depressive symptoms among university students in Thailand.

Keywords:*Depression symptoms, Prevalence, University students, Family conflict, Bullied experience*

Introduction

Depressive symptoms is a common illness worldwide, with more than 264 million people affected [1]. Depressive symptoms is different from the usual mood fluctuations and short-lived emotional responses to the challenges in everyday life. Especially when it is long-lasting and has a moderate or severe intensity, depressive symptoms e may become a serious health condition and progress into severe depression. Depressive symptoms and depression can cause people to suffer in their daily lives, function poorly at work, and have difficulties at school and it can develop into domestic violence in the family. At its worst, depression can lead to suicide. Approximately 800,000 deaths due to suicide from depression are reported every year. Moreover, suicide is the second leading cause of death among people aged 15–29 years [2].

Nearly one-half of people living with depression are currently residing in the South-East Asia Region and Western Pacific Region [3]. The Department of Mental Health in Thailand reported that the prevalence of suicide in 2019 was 15.1% among people aged 20–29 years, which correlated with depression [4]. Depression and depression symptoms are clearly defined as a critical mental health problem in Thailand, leading to lost human capacity and lives from suicide, particularly among young adults who are placed under high stress in their daily lives. Among young adults aged 18–22 years in Thailand, most are studying in the university with chaotic class schedules every day. Students who attend

life science programs are much more likely to be faced with difficult classes while in this basic life stage, and they need to explore the world and participate in outdoor activities. However, due to the educational system of Thailand, most people aged 18–22 years are attending classes at a university. Some university students have a difficult time coping with stress due to their class schedule, and they might eventually develop depressive symptoms and/or depression.

In a study of depression among some at-risk populations in Chiang Rai Province, Thailand, a high prevalence of depressive symptoms (38.9%) was found, particularly among people aged 18–22 years [5]. Moreover, in a study of university students in northern Thailand, it was reported that the prevalence of depression was 31.0%, and some specific characteristics of the study population were detected as influencing factors of depression development such as the year of the study, having underlying diseases, and residency region [6]. Therefore, this study aimed to estimate the prevalence of and to identify factors associated with depressive symptoms among students attending life science classes in a university located in northern Thailand.

Methods

Study design and study setting

An analytic cross-sectional study design was used to obtain information from participants to estimate the prevalence and to determine the factors associated with depressive symptoms among students who were attending a life science program at a university located in northern Thailand. The duration of this study was 4 months, from September to December in 2019.

Study population

The study population were all students attending one of the life science programs in the 2019 cohort at a selected university.

Study sample

Table 1 General characteristics and depression of participants

Characteristics	n	%
Total	**160**	**100.0**
Sex		
Male	20	12.5
Female	140	87.5
Age (years)		
≤ 19	42	26.3
≥ 20	118	73.8
Mean = 20.3, SD = 1.2, Min =17, Max =23		
GPAX		
≤ 1.99	12	7.5
≥ 2.00	148	92.5
Sufficiency of monthly allowance		
Yes	90	56.3
No	70	43.8
Parents' marital status		
Married	110	68.8
Ever married	50	31.3
Having a conflict within family		
Yes	16	10.0
No	144	90.0
Having a conflict with friends		
Yes	27	16.9
No	133	83.1
Being bullied from peers		
Yes	49	30.6
No	111	69.4
Having a counselor while facing problem		
Yes	135	84.4
No	25	15.6
Depressive symptoms (PHQ9)		
Yes	33	20.6
No	127	79.4

Table 2 Univariate analysis in identifying the factors associated with depression symptoms among the participants

Variable	Depression present (N = 33) N (%)	Depression absent (N = 127) N (%)	Total	Crude OR (95% CI)	*P*-value
Gender					
Male	5 (25.0%)	15 (75.0%)	20	1.33 (0.44-3.98)	0.606
Female	28 (20.0%)	112 (80.0%)	140	1	
Age					
≤ 19	10 (23.8%)	32 (76.2%)	42	1.29 (0.55-3.00)	0.553
≥ 20	23 (19.5%)	95 (80.5%)	118	1	
GPAX					
≤ 1.99	5 (41.7%)	7 (58.3%)	12	3.06 (0.90-10.36)	0.072
≥ 2.00	28 (18.9%)	120 (81.1%)	148	1	
Income sufficiency					
Not enough	16 (22.9%)	54 (77.1%)	70	0.78 (0.36-1.69)	0.539
Enough	17 (18.9%)	73 (81.1%)	90	1	
Parent marital status					
Single/ Divorce/ Widow	15 (30.0%)	35 (70.0%)	50	2.19 (0.99-4.81)	0.051
Married	18 (16.4%)	92 (83.6%)	110	1	
Family conflict					
Yes	8 (50.0%)	8 (50.0%)	16	4.76 (1.63-13.88)	0.004*
No	25 (17.4%)	119 (82.6%)	144	1	
Being bullied					
Yes	17 (34.7%)	32 (65.3%)	49	3.14 (1.42-6.96)	0.004*
No	16 (14.4%)	95 (85.6%)	111	1	
Counselor					
No	10 (40.0%)	15 (60.0%)	25	0.20 (1.29-8.12)	≤0.001*
Yes	23 (17.0%)	112 (83.0%)	135	1	

* Significant level at $\alpha \leq 0.05$

In 2019, there were 273 students attending a life sciences program at the selected university. Considering the prevalence of depression reported in a previous study to be 31.0% [6], this study attempted to collect information from at least 50.0% of the available cohort.

Research instruments

A questionnaire was used to collect information on sex, age, the accumulated grade point average (GPAX), sufficiency of the student's monthly allowance, parents' marital status, status of having a counselor, history of being bullied, and having a family conflict. The questionnaire was tested for reliability and validity by piloting it among 30 subjects who were similar with the study population, and the Cronbach's alpha coefficient was 0.86.

Detection of depressive symptoms among the participants was assessed by the Thai version of the patient health questionnaire (PHQ-9), which is a commonly used and well-validated nine-item screening tool for depression based on the DSM diagnostic criteria for major depression. This instrument contained 9 items and asked about the frequency of depressive symptoms over the past two weeks. Questionnaire items were scored on a 4-point scale from 0 (symptom absent) to 3 (severe symptoms). Then, those who scored ≥ 7 or higher were defined as having depression [7]. The Thai version of the PHQ-9 had satisfactory internal consistency with Cronbach's alpha = 0.79 [8].

Results

A total of 160 students participated in this study; 87.5% were female, and 73.8% were aged ≥ 20 years. Twelve people (7.5%) had a GPAX ≤ 1.99, 43.8% reported that their monthly allowance was not sufficient, and 31.3% reported their parents were or had been married. Sixteen persons (10.0%) had family conflicts, 30.6% had been bullied by peers, 15.6% did not consult anyone when facing a problem, and 20.6% had depressive symptoms (Table 1).

In the univariate analysis, three variables were found to be significantly associated with having depressive symptoms: family conflict (OR = 4.7; 95% CI = 1.63–13.88), being bullied (OR = 3.14; 95% CI = 1.42–6.96), and not having a counselor (OR = 0.20; 95% CI = 1.29–8.12) while the other variables did not show any association with depressive symptoms (Table 2).

After controlling for sex and age in the multivariate analysis, two variables were found to be associated with depressive symptoms: being bullied and family conflicts. Students who had family conflicts were more likely to have depressive symptoms than those who did not (AOR = 4.90, 95% CI = 1.46–16.38), and those who had been bullied by their peers were more likely to have

depressive symptoms that those who had not (AOR= 3.24; 95% CI=1.39–7.54), respectively (Table 3).

Table 3 Multivariate analysis in identifying factors associated with depressive symptoms among the participants.

Factor	AOR (95% CI)	p-value
Having a family conflict		
Yes	4.90 (1.46-16.38)	0.004*
No	1.00	
Being bullied from peers		
Yes	3.24 (1.39-7.54)	0.006*
No	1.00	

** Significant level at α= 0.05 after controlling for sex and age.*

Discussion

In this study, it was found that the prevalence of depressive symptoms among the students attending a life science program in northern Thailand was 20.6%. This prevalence is different from that reported in a study conducted by Ruanjai et al. [6], which was 31.0% for a similar population. This difference may be due to some new public health interventions have been implemented, particularly the new counseling system implemented for university students after completion of a previous study. Many universities in Thailand have developed a good protocol and guidelines to support mental health services among their students. In a study conducted in India, counsellor-delivered interventions were found to be suitable first-line interventions in a stepped care approach for students with diverse mental health problems [9].

In this study, it was found that family conflict was associated with depressive symptoms among students attending a life science program. Several previous studies showed a similar result: having high family conflicts was associated with depressive symptoms among people aged 22–25 years [10, 11]. In another study, it was clearly demonstrated that having family conflicts or having a poor relationship with parents can result in a child experiencing sadness, fear, guilt, shame, worry and other physiological reactions [12]. It has been reported that having a poor relationship with a parent had a more serious impact on the child than undergoing divorce or separation [13]. Therefore, the findings of this study are consistent with previous research and supports the idea that the parental relationship has a profound impact on youth depressive symptoms development under the Thai family structure and culture.

Moreover, this study also found that students who had experienced bullying by their peers were more likely to have depressive symptoms that those who did not. Obviously, many previous studies have shown a strong association between bullying and depressive symptoms and depression development among young adults, particularly those college students who have critical experiences in emotional loneliness, difficulties in maintaining friendships, lower self-esteem, more fearful attachments, lower health-related quality of life, less friendship quality, shyness, and lower levels of trust [14-17]. Bullying is a form of abuse, causing conflict and frustration [17]. One study reported that having been bullied included other relationship problems with their peers, such as experiencing traumatic events related to peer relationships, which can lead to depressive symptoms and depression development [18]. There are some limitations in this study. First, the participants were recruited from one program in a university, and the results might not be generalizable to all students at the university. Second, this study is cross-sectional, since its primary aim was to estimate the magnitude and then identify the causal relationships between variables that are not clearly explained. The findings of this study need to be validated in a study with a more robust design. In addition, some potentially significant variables, such as a family history of depression and risk-taking behavior, were not considered in this analysis and should be included in future studies.

Conclusions

A large proportion of students attending a life science program at a university in northern Thailand is facing depressive symptoms. This problem might interfere with student functioning, particularly with their studies, and therefore, the university should develop a program of regular screening for depressive symptoms and closely monitor those who present with some major signs of depression. Minimizing or eliminating bullying behaviors among the students is one of the most important approaches for reducing depressive symptoms and depression problems among university students in Thailand. Additional health interventions should be focused on reducing the problem of having poor parental relationships in the Thai culture.

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