ORIGINAL ARTICLE

Predictors of depressive symptoms among thai undergraduate students

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ABSTRACT

Depression is a negative cognitive triad that consists of alternating amounts of alienation. In addition, this generally leads to inaction, remorse, lack of focus, societal disengagement, sleep disruptions, and suicidal impulses. The cross-sectional descriptive study intended to analyze depression and ascertain the influences of depression among 439 undergraduate students. These pupils were attending their second semester of the academic year 2020, Nakhon Pathom province, Thailand. Research instruments were self-report questionnaires, the 9-item patient health questionnaire, the Parenting Style Questionnaire, the Rosenberg's Self-Esteem Scale, and the revised Multi-dimensional Scale of Perceived Social Support. The Cronbach's alpha reliabilities comprised .85, .69, .72 and .92, respectively. Descriptive statistics and stepwise multiple regression analysis examined the data gathered. Results revealed that the mean score of depressive symptoms was 6.51 (SD = 4.27), which was minimal depressive symptoms. Authoritarian parenting style was the best significant predictor (β = .316), the second-best was social support (β = -.237), and the third-best was self-esteem (β = .104). The three predictors accounted for 20.7 % ($F3, 435 = 37.837$, $p < .001$) in the prediction of depressive symptoms among undergraduate students. Moreover, the findings recommended that healthcare providers and school workers should plan activities or interventions for undergraduate students. Consequently, they should encourage self-esteem, social support and cultivate appropriate parenting styles. As a result, depressive symptoms would decline.

Key words: authoritarian parenting style, depressive symptoms, undergraduate students

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INTRODUCTION

Depression is the principal cause of illness and disability globally. [1] Based on WHO reports, 264 million individuals from around the world in all age categories suffer from depression. Further, more than 800,000 individuals die every year due to suicide, accounting for 1.5% of all deaths worldwide. Depression is also a common mental health problem, especially in adolescents [2]. University students who are at a particular transitional period in their lives are confronted by significant amounts of psychological pressure. For example, these pupils face mental stress when they must move away from their homes and adjust to the university environment. In addition, educational responsibilities, monetary hurdles, and apprehension about the future can behave as causes for depression symptomatology [3]. In Thailand, 42 – 69.30 % of adolescents reported depression [4]. Furthermore, depression can lead to suicidal thoughts and, ultimately, suicide [3-5]. One study determined that more than half of the students that demonstrated behavioral symptoms of depression were linked to suicide attempts [3]. Depression is grounded in Beck's cognitive model in that the negative cognitive triad perceives negative views of the self, the world, and the future [6,7]. Depression can cause disturbances to daily life activities [3,8], interpersonal relationships, and an increased risk of psychiatric problems [9,10] as well as suicide [3-5,9]. The reviewed works of literature illustrated that there were significant factors relevant to depression, including self-esteem, parenting styles and social support.

In line with Roger's self-theory, self-esteem is a fundamental aspect of three variant elements of self or the self-concept [11]. Furthermore, Roger's self-theory attributes behavior towards oneself in both positive and negative capacities [2,4,11]. Self-esteem is a risk factor for depression among adolescents. Adolescents who have faced behavioral symptoms of depression viewed themselves as insignificant. In addition, depressed adolescents have expressed more negative work experiences when compared to their non-depressed peers[2]. Additionally, research findings discovered that a high level of self-esteem was negatively associated with depression. Likewise, a determination on the decrease of self-esteem was primarily related to growth in depression [2,4]. Moreover, studies focused on public and private school students revealed that high self-esteem had a significantly negative influence on depressive symptoms, while low self-esteem among these individuals demonstrated a positive relationship with depressive symptoms [2].

Parenting styles, diversified parenting styles, and the approaches used by parents to manage their children's behaviors are found in The Parenting Styles Theory of Baumrind [12]. In addition, this theory characterized three parental styles: authoritarian, authoritative, and permissive. Afterwards, a fourth parenting style was added, called the uninvolved parenting style [11]. There were two essential fundamentals of parenting: parental receptivity and parental constraint [12-13]. Consistent with the definition, numerous categories of research illustrated that certain parenting styles were related to depression among students [8,14]. Subsequently, research indicated that some students who experienced depressed behavior had a positive correlation with authoritarian and neglectful parenting styles [14, 15]. More so, these students had a significantly negative correlation with the authoritative and permissive parenting styles [14, 15].

Previous research reported that the level of social support perceived by students was associated with depression

[14,16,17]. Additionally, students who perceived more support tended to report lower levels of depression. A study conducted among Ugandan students demonstrated that support from family, caregivers, and peers was associated with lower levels of depressive symptoms [16]. In addition, a study reported that social support from family and friends was a significant predictor of depressive symptoms. There were significantly negative correlations between the level of depressive symptoms and social support [17].

Empirical evidence indicated that depressive symptoms among students in university did not occur in isolation, but rather was influential within multi-causality. Meanwhile, research on depressive symptoms among Thai undergraduate students tends to be fragmented. An integrative approach to determine the predicting factors of depressive symptoms among undergraduate students is necessary. Its findings would contribute to the knowledge required for developing a program that could prevent the risk of depressive symptoms among undergraduate students. Therefore, this study aimed to examine the depressive symptoms and predictors of depression among university students.

MATERIALS AND METHODS

This predictive correlational study determined the predictors of depressive symptoms among undergraduate students, including self-esteem, parenting style and social support**.**

***Population*:** The target population of this study comprised undergraduate students who were attending an autonomous university in the second semester of the academic year 2020.

Sample size and sampling: The sample size was calculated using G*Power software. A power of 0.95, an alpha value of 0.05, and a small effect size of 0.15 were considered. G*Power software suggested a sample size of 119. However, a sample size of 439 was considered to compensate for missing data and ensure data quality for multiple regression.

Participants: Undergraduate students aged between 18-23 years who were able to read and write in Thai were enrolled. A total sample of 439 students was invited to participate in our survey and agreed to enroll in the present study through the target population selection by utilizing simple sampling.

Instruments: Data were obtained using five self-reporting questionnaires as follows:

1. Demographic characteristics such as age, gender, religion, academic level, parents' marital status, and living arrangements were assessed utilizing a personal information record form.

2. Depressive symptoms were measured using the 9-item patient health questionnaire (PHQ-9) [18]. It consisted of 9 items that measure the severity of depressive symptoms. Respondents indicated (on a scale of 0 = "not at all" to 3 = "every day") how often they experienced depressive symptoms. Scores ranged from 0-27. A higher score indicated a higher level of depression. A total score between 0-6 indicated minimal depressive symptoms, while 7-12 indicated mild depressive symptoms, 13-17 indicated moderate depressive symptoms, and 18-27 indicated severe depressive symptoms. The goal of this research was to identify the students who might need preventative services. Therefore, this method served as a simple way to categorize students as either at-risk or not at-risk. In this study, Cronbach's alpha reliability was .85.

3. Self-esteem was measured using Rosenberg's Self-esteem Scale (RSE- Thai version) [19]. It measured the orientation towards one's self-esteem and consisted of

10 statements with 5-positive and 5-negative determinants. Likert's five-point scale (1–5) was provided with each statement. The total score was calculated by adding the scores on individual readings. The scores ranged from 0-40, with higher scores representing higher self-esteem and vice versa. Cronbach's alpha reliability was .69.

4. Parenting style was measured by using the Parenting Style Questionnaire (PSQ- Thai version) [20]. In addition, it obtained the level of participant's perceived parental caring style. It consisted of 22 items rated on a Likert's five-point scale (1–5) to identify the parenting style, including authoritative, authoritarian, permissive, and neglectful parenting styles. Cronbach's alpha reliability of each style was .72.

5. Social support was measured by using the revised Multi-dimensional Scale of Perceived Social Support (the revised MSPSS-Thai version) [21]. It consisted of 12 items rated on a Likert's five-point scale (1–5) that measured an individual's perception of how much outside social support he or she received. There are three subscales used by the scale: Significant Others (SO) (Items 1, 2, 5, and 10), Family (FA) (Items 3, 4, 8, and 11) and Friends (FR) (Items 6, 7, 9, and 12). The total scores ranged from 1-60, with higher scores representing higher social support and vice versa. Cronbach's alpha reliability was .92.

Ethical Considerations: This study was approved by the Mahidol University Central Institutional Review Board (MU-CIRB) (No. MU-CIRB 2019/319.0912) before administering the questionnaires to participants. Participants were invited to participate and received a full explanation of all aspects of the study. Moreover, the potential risks and benefits related to uncomfortable feelings were disclosed due to the sensitive nature of some of the questions and possible fatigue associated with completing the online forms. Students were informed that their participation was voluntary and they could refuse to participate at any time without penalty.

Data collection: After IRB approval by the MU-CIRB, all the participants were required to scan a QR code to fill in the survey and read an information sheet before completing the survey. Participants were provided with help-seeking information at the end of the survey to acknowledge if they felt distressed. In addition, participants who reported depressive symptoms in their survey responses were provided with contact information for crisis services. Data collection in a given academic setting took approximately 1 hour to complete.

***Data Analysis*:** Descriptive statistics were utilized to describe the demographic characteristics and study variables in terms of frequency, percent, mean, standard deviation and range. Stepwise multiple regression determined the association and prediction of self-esteem, parenting style, and social support to depressive symptoms.

RESULTS

There were a total of 439 participants, with about 83% being female. Their ages ranged from 18-25 years, with a mean age of 19.97 (SD = 1.31). Most participants were Buddhist. Approximately 50% of the participants were first-year students. More than half of the participants (53.30%) lived with their families, and 76.10% of their parents were still married (Table 1).

Table 1 Socio-demographic characteristics of participants (N = 439)

Variables		Depression – n (%)		P
		Minimal/Mild	Moderate/Severe	
Age (years)	M = 19.97, SD = 1.31			
18-19		107(43.0)	82(43.2)	0.22
20-22		134(53.8)	105(55.3)	
23-25		8(3.2)	3(1.5)	
Gender				
Male		46(18.5)	33(17.4)	0.53
Female		203(81.5)	157(82.6)	
Religion				
Buddhism		232(93.2)	176(92.6)	0.96
Christianity		11(4.4)	4(2.1)	
Islam		6(2.4)	7(3.7)	
Others*		-	3(1.6)	
Level of education				
1		115(46.2)	90(47.4)	<0.001
2		54(21.7)	43(22.6)	
3		30(12.0)	28(14.7)	
4		50(20.1)	29(15.3)	
Living with				
Family		135(54.2)	98(51.6)	0.79
Relatives		13(5.2)	4(2.1)	
Alone		99(39.8)	85(44.7)	
Friends		2(0.8)	3(1.6)	
Marital status of parents				
Live together		195(78.3)	138(72.6)	0.98
Others**		54(21.7)	52(27.4)	

** Non-Religious People and other Religions*
*** Divorced, Widowed and Separated*

The total score for depressive symptoms ranged from 0 to 25 (*M* = 6.51, *SD* = 4.27). The mean score of 6.51 implied minimal depressive symptoms among the sample. There were four parenting styles with a rating scale from 1 to 5. The total score for authoritarian parenting style ranged from 6 to 30 (*M = 25.07, SD* = 4.58), authoritative parenting style ranged from 6 to 30 (*M = 10.63, SD* = 3.90), while neglectful parenting style ranged from 6 to 30 (*M = 24.70, SD* = 4.10), and indulgent parenting style ranged from 4 to 20 (*M = 10.74, SD* = 2.72). The total actual score for self-esteem ranged from 10 to 20, with a mean of 14.61 (*SD* = 1.50). The mean total score for social support was 60.66 (*SD* = 12.51), and ranged from 15 to 81 (Table 2).

Table 2 Descriptive statistics of study variables (n = 439)

Variable	Mean	SD	Range
Depression	6.51	4.27	0 - 25
Authoritarian parenting style	25.07	4.58	6-30
Authoritative parenting style	10.63	3.90	6-30
Neglectful parenting style	24.70	4.10	6-30
Indulgent parenting style	10.74	2.72	4-20
Self-esteem	14.61	1.50	10 - 20
Social support	60.66	12.51	15 - 81

The general assumptions of multivariate analysis included were tests for missing data, outliers, normality, linearity, and multicollinearity [22] before data analyses to decrease the potential distortion and bias in the results. Next, a correlation matrix of Pearson's correlation coefficients of variables predicting depression is presented in Table 3 to examine these associations in a multivariate context.

Table 3 Correlation matrix of variables predicting depression (n = 439)

Variable	1	2	3	4	5	6
Authoritarian	-					
Authoritative	-.499**					
Neglectful	.600**	-.582**				
Indulgent	-.210**	.302**	-.085 ns			
Self-esteem	.079 ns	-.029 ns	.411**	.027 ns		
Social support	.331**	-.333**	.012ns	-.076ns	.080ns	-

** p<.01, **p <.001*

Stepwise multiple regression analysis identified the significance and the best predictor of depression among undergraduate students. It was determined that the authoritarian parenting style was significant and the best predictor. It accounted for 14.9% in variance explained ($\beta = .316$, $t = 6.968$, $p < .001$). The second-best significant predictor was social support, which increasingly accounted for 4.7 % in the prediction ($\beta = -.237$, $t = -5.223$, $p < .001$) . The third and last significant predictor was self-esteem. It increasingly accounted for 1.1% ($\beta = .104$, $t = 2.433$, $p < .01$). These three predictors accounted for 20.7 % ($F_{3, 435} = 37.837$, $p < .001$) in the prediction of depressive symptoms among undergraduate students (Table 4).

Table 4 Stepwise multiple regression statistics of variables predicting depression (n = 439)

Variables	ΔR^2	b	SE-b	β	t
Constant		14.439	2.045		7.062**
Authoritarian parenting style	.149	.294	.042	.316	6.968**
Social support	.047	-.081	.015	-.237	-5.223**
Self-esteem	.011	.298	.122	.104	2.433*
$F_{3, 435} = 37.837$**					
$R^2 = .207$					
Adjust $R^2 = .201$					

** p<.01, **p <.001*

DISCUSSION

Studies of depression among adolescents are important because depressive symptoms cause illness and disability. The results demonstrated that the average of depressive symptoms among undergraduate students was 6.51 (SD = 4.27, range = 0 - 25) in the past two months, which appears to be less than in previous studies in Thailand [4] and other countries[3-5,16]. The lower rate of depressive symptoms may result from individuals living with their families. This study revealed that approximately half of all students lived at home. Living with family may be a key protective factor influencing the existence of depression and anxiety among adolescents.

Authoritarian parenting style, social support, and self-esteem were statistically associated with depression (p< .001). These three predictors accounted for 20.7 % ($F_{3, 435}$ = 37.837, p < .001) in the prediction of depression among these students. The Authoritarian parenting style was statistically associated with depression (p< .001) and the best predictor, accounting for 14.9 % (β = .316, t = 6.968, p < .001). This seemed to show that individuals perceived highly demanding and directive styles, but not responsive by their parents, associated with depression. Consistently, previous studies have shown that adolescents with the authoritarian parenting style had a significant correlation with measures of negative outcomes throughout development, including depression and anxiety[14,16]. For example, Romero Acosta and colleagues [15] conducted a correlational study of 710 students in Columbia. Their results determined that parenting styles had a significant influence on depressive symptoms. Likewise, students who perceived that their parents used the authoritarian parenting style reported more depressive symptoms than those whose parents used the authoritative parenting style. Meanwhile, parents who used an authoritative or permissive parenting style reported lower depressive symptoms than those whose parents used the authoritarian parenting style. Likewise, Teacher & Pradesh[14] showed that there was a positive correlation between the authoritarian parenting style and depression among adolescents in India.

Social support was statistically associated with depression (p< .001). This finding indicated that students who perceive more support tend to have lower reported levels of depression. This is consistent with several other types of research that illustrated social support was related to depression among adolescents[9,16-

[17]. In a cross-sectional study among 461 university students [17], the results determined a significantly negative correlation between social support and depressive symptoms. Additionally, social support from family and friends was a significant predictor of depressive symptoms. Moreover, a study of 1260 adolescents in Uganda [16] showed that the association between the level of social support and family relationships were risk factors for depressive symptoms. Subsequently, the results determined that perceived child-caregiver support, social support from a parent/caregiver, and social support from a friend/peer were significant predictors of lower depressive symptoms.

Self-esteem was also statistically associated with depression ($p< .01$), which appeared to show that students who had low self-esteem tended to develop depression. The clarification of this determination originated from the self – concept theory [11]. Based on this model, self-esteem indicates both negative and positive views of the self when students interact with their environments. Students might have distress about negative self-perceptions or feel low self-esteem, which could cause depression. This intention was supported by several studies conducted in the past [2,16]. For instance, a cross-sectional study of 600 students in the United Arab Emirates [2] demonstrated a significant relationship between the level of self-esteem and depressive symptoms. As a result, there was a positive relationship determined among these factors. Nevertheless, a study was conducted on 1260 adolescents [16] to examine the predictors of depressive symptoms. Consequently, the results determined self-esteem was a psychological wellbeing factor associated with lower levels of depressive symptoms among adolescents. To sum up, the association between self-esteem and depression has been determined to be significant for the aforementioned reasons.

Based on the cognitive model of depression, the overall findings revealed that psychosocial factors, including cognitive aspects such as self-esteem, as well as social factors such as appropriate family and social support, were considered causative factors of depressive symptoms among undergraduate students. This finding is consistent with prior studies among Western adolescents [7,14]. A systematic review of twelve studies involving 1,641 participants was conducted. The included studies revealed that most of the interventions aimed to build cognitive skills by peer groups or family members. Evidence also suggests that several preventive activities are now required [7]. As a result, prevention programs for adolescents should focus on developing cognitive abilities in adolescents, such as self-esteem, as well as increasing family and social support.

RECOMMENDATION

The findings suggest a new direction for healthcare professionals working in communities, particularly in schools and other settings. For example, both school administrators and teachers should encourage self-esteem and social support. This would likely prevent depressive symptoms as a result. Cultivating appropriate parenting styles among families is also important. Moreover, a prevention program would seem to be appropriate so that undergraduate students' depressive symptoms could be reduced by improving self-perception and guiding them to change their negative feelings into positive ones.

In terms of future research, there are three recommendations. First, experimental studies should be conducted by developing

a program to reduce depressive symptoms among undergraduate students. Second, cognitive-based preventive intervention should be studied among high-risk groups. Finally, a longitudinal and qualitative design should also be used to better understand depressive symptoms among undergraduate students.

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