



Prevalence and Factors Related to Stress and Depression Among Students at Nakhon Si Thammarat Rajabhat University

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Abstract: Depression and stress are prevalent mental health challenges among university students worldwide, particularly during the critical transition from adolescence to adulthood. This cross-sectional descriptive study aimed to examine stress levels, the prevalence of depression, associated factors, and predictors of depression among undergraduates at Nakhon Si Thammarat Rajabhat University (NSTRU). A proportional stratified random sample of 367 students in Years 1–4 (Semester 1, Academic Year 2024) was recruited. Data were collected using a 107-item, six-part questionnaire encompassing demographic characteristics, a multidimensional Stress Perception Scale, the SPS-T (20-item), the 2-Question Depression Screener (2Q), the 9-Question Depression Inventory (9Q), and the 8-Question Suicidality Assessment (8Q). Content validity (IOC > 0.5) and reliability (Cronbach's $\alpha \geq 0.78$) were confirmed. Data were analyzed using descriptive statistics, Pearson's correlation, and multiple regression. Most students reported low stress (55.59%) and screened negative for depression (71.37%); however, 28.63% were at risk of depression. Among the 105 screen-positive students subsequently assessed with the 9Q, 30.48% were classified as mild and 10.47% as moderate depression (equivalent to 8.7% and 3.0% of the full sample, respectively). Among students with mild-to-moderate depression ($n = 43$), 23.25% showed suicidal tendency. Religion was the only personal factor significantly related to stress. GPA, religion, and parental marital status were significantly associated with depression. All seven external factor domains (family, interpersonal relationships, academic, personality, health, financial, and environment) correlated significantly with both stress and depression. Multiple regression revealed that environmental, personality, family, GPA, and parental marital status collectively predicted 14.60% of depression variance (Adjusted $R^2 = 0.117$). Compared with middle-aged rural Thai populations in which occupational, health, and family stressors predominate, university students exhibited distinctly different stress source profiles, underscoring the need for age-group-specific mental health interventions. These findings highlight the importance of systematic, multi-component mental health programs within higher education institutions.

Keywords: Prevalence; depression; stress; university students; mental health

1. Introduction

Depression is a significant and widespread mental health condition that impairs cognitive function, emotional regulation, and social performance. It can

affect individuals across all age groups, but university students are particularly vulnerable owing to the transitional nature of this life stage. The shift from secondary school to higher education brings increased academic demands, novel social environments, and heightened personal responsibilities, all of which elevate the risk of stress and depression [1,2]. Depression negatively affects physical health, daily functioning, quality of life, and academic performance. If left unaddressed, depressive symptoms can escalate from mild to severe, potentially culminating in suicidal ideation or attempts [2,3]. The etiology of depression is multifactorial, involving biological factors (e.g., neurotransmitter imbalances), psychological factors (e.g., maladaptive coping strategies), and socio-environmental factors (e.g., relocation, study environment, and interpersonal relationships) [3]. These factors collectively interfere with adolescent cognitive, emotional, and social development [4].

Data from the Thai Suicide Prevention and Surveillance Center indicate that suicide rates among Thai youth have been rising, with stress and depression identified as primary drivers [5]. This trend highlights the urgency of addressing mental health in university settings. While stress and its management have been studied in other Thai demographic groups, including middle-aged rural residents in Ubonratchathani Province who reported work, health, and family as primary stressors [9], the sources, magnitude, and consequences of stress among undergraduates differ markedly from those in working-age or rural populations. Educational institutions, therefore, have a critical role in promoting mental well-being, implementing early screening programs, and creating supportive environments conducive to both physical and psychological health. The present study was conducted to determine the prevalence of stress and depression and to identify associated and predictive factors among NSTRU undergraduates, providing evidence-based data to support systematic student mental health planning and intervention.

2. Materials and Methods

2.1 Study Design and Population

This was a cross-sectional descriptive study. The target population comprised all undergraduate students enrolled at Nakhon Si Thammarat Rajabhat University (NSTRU) in Years 1–4 during the first semester of the 2024 academic year ($N = 7,436$). The required sample size was calculated using the Krejcie and Morgan table at a 95% confidence level and a 5% margin of error, yielding a minimum of 367 participants. Participants were selected by proportional stratified random sampling based on faculty enrollment. Inclusion criteria were: regular-program students aged ≥ 18 years, fully alert, able to read and communicate in Thai, and willing to provide informed consent. Exclusion criteria were: students in special/part-time programs and those who declined to participate.

2.2 Research Instruments

Data were collected via a self-administered questionnaire comprising 107 items in six parts:

Part 1 – General Information (10 items): Sex, age, religion, faculty, year of study, GPA, parental marital status, parental occupation, residence type, and monthly income.

Part 2 – Multidimensional Stress Perception Scale (58 items): Seven domains—family (7 items), interpersonal relationships (8 items), academic (14 items), personality (10 items), health (5 items), financial (7 items), and environment (7 items)—rated on a 5-point Likert scale. Domain scores were interpreted using Bloom's criterion-referenced rubric across five stress levels (minimal to extreme).

Part 3 – SPS-T Stress Scale (20 items): A validated Thai stress scale rated on a 5-point scale; scores categorized as low (20–39), moderate (40–59), high (60–79), and severe (≥ 80).

Part 4 – 2-Question Depression Screener (2Q): A binary (yes/no) tool; one or more affirmative responses indicate depression risk.

Part 5 – 9-Question Depression Inventory (9Q): A 4-point (0–3) scale; scores < 7 = no depression; 7–12 = mild; 13–18 = moderate; ≥ 19 = severe.

Part 6 – 8-Question Suicidality Assessment (8Q): A weighted binary tool assessing current suicidal tendency: 0 = none; 1–8 = low; 9–16 = moderate; ≥ 17 = severe.

2.3. Instrument Validation

The questionnaire was reviewed by three subject-matter experts and achieved an Item-Objective Congruence (IOC) index > 0.5 for all items. A pilot test with 30 students from Surat Thani Rajabhat University yielded Cronbach's alpha coefficients of: Multidimensional Stress Scale ($\alpha = 0.98$), SPS-T ($\alpha = 0.97$), 2Q ($\alpha = 0.80$), and 9Q ($\alpha = 0.78$). Surat Thani Rajabhat University was selected for piloting because it is a comparable regional public university with a similar student socio-demographic profile to NSTRU; using a different institution prevented contamination of the main study sample while ensuring that instrument performance would be relevant to the target population.

2.4. Ethical Approval

This study was approved by the Human Research Ethics Committee of Nakhon Si Thammarat Rajabhat University (Project No. 011/68; Certificate No. 014/2568; approval period: 18 March 2025 – 17 March 2027). All participants provided written informed consent before participation.

2.5. Data Collection

Following institutional approvals from five faculty deans, the Office of the Registrar, and the Student Affairs Division, data were collected in classroom buildings, the university canteen, and student dormitories. Research team members explained the study objectives, confirmed voluntary participation, administered the questionnaires, checked for completeness, and collected all forms.

2.6. Statistical Analysis

Data were analyzed using IBM SPSS Statistics, Version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics (frequencies, percentages, means, standard deviations, minimum, and maximum) were computed for all variables. Pearson's correlation coefficient was used to examine associations between continuous external factor domains and stress/depression scores. Chi-square tests were applied for categorical personal factors. Multiple linear regression analysis identified predictors of depression.

3. Results and Discussion

3.1 Demographic Characteristics

Table 1 summarizes the characteristics of the 367 participants. The majority were female (64.31%), aged 20–21 years (47.41%), and Buddhist (86.38%). Most were enrolled in the Faculty of Humanities and Social Sciences (34.06%) and in Year 4 (32.43%). The most common GPA range was 2.50–3.49 (63.76%). Most reported that their parents lived together (71.12%); the predominant parental occupation was agriculture (31.88%). The majority resided in off-campus dormitories (60.22%) and had a monthly income of 3,000–6,000 THB (67.57%).

3.2 Stress Levels

Most students (55.59%) reported low stress, followed by moderate (24.52%), high (13.90%), and severe (5.99%) stress (Table 2). These proportions differ notably from those documented among middle-aged rural residents in Ubonratchathani, where occupational and health concerns were leading stressors [9]. In the university context, the relatively low overall stress level may reflect students' general capacity for adaptation; however, approximately one-fifth of students experiencing high or severe stress warrant targeted intervention [6].

Table 1. Demographic characteristics of participants (n = 367).

Characteristic	n	%
Sex		
Female	236	64.31
Male	131	35.69
Age (years)		
18–19	91	24.80
20–21	174	47.41
22–24 (Mean±SD = 20.1 ± 1.3; Min = 18, Max = 24)	102	27.79
Religion		
Buddhism	317	86.38
Islam	50	13.62
Faculty		
Education	93	25.34
Science and Technology	37	10.08
Humanities and Social Sciences	125	34.06
Management Sciences	62	16.89
Industrial Technology	50	13.62
Year of Study		
Year 1	95	25.89
Year 2	74	20.16
Year 3	79	21.53
Year 4	119	32.43
GPA		
< 2.00	6	1.63
2.00–2.49	22	5.99
2.50–3.49	234	63.76
≥ 3.50	105	28.61
Parental Marital Status		
Living together	261	71.12
Separated	41	10.08
Divorced	37	11.17
One parent deceased	28	7.63
Parental Occupation		
Government officer	27	7.36
Company/private sector	14	3.81
Wage worker	102	27.79
Trade/self-employed	107	29.16
Agriculture	117	31.88
Residence		
University dormitory	110	29.97
Off-campus dormitory	211	60.22
Commuting (own home)	31	8.45
Commuting (relative's home)	5	1.36
Monthly Income (THB)		
< 3,000	15	4.10
3,000–6,000	248	67.57
6,001–10,000	92	25.07
10,001–20,000	10	2.72
> 20,000	2	0.54

Table 2. Stress level distribution (SPS-T) (n = 367).

Stress Level	n	%
Low stress	204	55.59
Moderate stress	90	24.52
High stress	51	13.90
Severe stress	22	5.99
Total	367	100.00

3.3 Prevalence of Depression

Using the 2Q screener (Table 3), 28.63% of students (n = 105) were identified as being at risk of depression, while 71.37% screened negative. Subsequent 9Q assessment of the 105 at-risk students (Table 4) revealed 30.48% with mild and 10.47% with moderate depressive symptoms (these percentages are calculated from the 105 screen-positive students, not the total sample; expressed as proportions of the full sample of 367, true prevalence was 8.7% for mild depression (32/367) and 3.0% for moderate depression (11/367)); 59.05% scored below the clinical threshold despite the positive 2Q screening, consistent with the tool's known limited specificity.

Table 3. Depression screening results (2Q) (n = 367).

Depression Screening (2Q)	n	%
No depression	262	71.37
Depression (at risk)	105	28.63
Total	367	100.00

Table 4. Severity of depressive symptoms (9Q) among at-risk students (n = 105).

Depression Severity (9Q) (n = 105)	n	%
No depressive symptoms	62	59.05
Mild depression	32	30.48
Moderate depression	11	10.47
Total	105	100.00

3.4 Suicidal Tendency

Among the 43 students with mild-to-moderate depression assessed by the 8Q (Table 5), 76.75% showed no suicidal tendency, 18.60% had low suicidal tendency, and 4.65% showed severe suicidal tendency. The absence of moderate-level cases alongside the presence of severe cases highlights a bimodal distribution that demands urgent institutional attention. NSTRU should establish a clear referral pathway in which all students with a positive 2Q screen are followed up with a 9Q assessment, and all 9Q-confirmed cases are offered a same-day or next-day consultation with a trained counselor or mental health nurse. Students scoring at the severe suicidality level on the 8Q should be triaged immediately to a licensed psychiatrist or the nearest mental health facility. Universities in Thailand typically follow the Department of Mental Health's three-tier response model (screen–assess–refer), and NSTRU's student affairs division should formally integrate this protocol into its annual academic calendar. It should also be noted that the 8Q was administered only to the 43 students with 9Q-confirmed mild-to-moderate depression; students who screened positive on 2Q but scored below the 9Q clinical threshold (n = 62) were not assessed for suicidality, meaning the true burden of suicidal tendency in the at-risk population may be underestimated.

Table 5. Suicidal tendency (8Q) among students with mild-to-moderate depression (n = 43).

Suicidal Tendency (8Q) (n = 43)	n	%
No suicidal tendency (0 points)	33	76.75
Low suicidal tendency (1–8 points)	8	18.60
Moderate suicidal tendency (9–16 points)	—	—
Severe suicidal tendency (> 17 points)	2	4.65
Total	43	100.00

3.5 Factors Associated with Stress

Among personal factors (Table 6), religion was the only variable significantly associated with stress ($\chi^2 = 0.111$, $p = 0.034$). Because religion was a binary categorical variable (Buddhist vs. Muslim), a Chi-square test was applied, and the effect size reported as Cramér's V; the value labeled “r” in Table 6 for religion represents this effect size statistic. Religious belief and practice appear to serve as psychological buffers, providing social support networks and meaning-making frameworks that moderate perceived stress [6]. This finding differs from the middle-aged rural context, where family economic pressure and physical health were the dominant personal stressors [9].

Table 6. Association between personal factors and stress level (n = 367).

Variable	r / χ^2	p-value
Sex	0.031	0.548
GPA	0.097	0.063
Religion	0.111	0.034*
Faculty	0.071	0.998
Year of study	0.000	0.828
Parental marital status	0.011	0.409
Parental occupation	0.043	0.229
Residence	0.063	0.063
Monthly income	0.061	0.242

All seven external factor domains correlated significantly with stress at $p < 0.01$ (Table 7). Family ($r = 0.277$) and financial factors ($r = 0.275$) showed the strongest associations. Academic stress ($r = 0.228$) was notable in the university context, though it ranked below family and financial pressures, suggesting that home-environment and resource-related stressors carry comparable weight for this population.

Table 7. Correlation between external factor domains and stress level (n = 367).

Factor Domain	r	p-value
Family	0.277**	< 0.001
Interpersonal relationships	0.232**	< 0.001
Academic	0.228**	< 0.001
Personality	0.227**	< 0.001
Health	0.231**	< 0.001
Financial	0.275**	< 0.001
Environment	0.248**	< 0.001

3.6 Factors Associated with Depression

GPA ($r = 0.129$, $p = 0.014$), religion ($r = 0.123$, $p = 0.019$), and parental marital status ($r = 0.150$, $p = 0.004$) were significantly associated with depression (Table 8). Lower academic performance, non-intact family structures, and minority religious affiliation were associated with higher depression risk, consistent with prior Thai studies on academic pressure and family disruption as depression precipitants [7, 8].

Table 8. Association between personal factors and depression (n = 367).

Variable	r / χ^2	p-value
Sex	0.045	0.395
GPA	0.129*	0.014
Religion	0.123*	0.019
Faculty	0.082	0.118
Year of study	0.085	0.104
Parental marital status	0.150**	0.004
Parental occupation	0.031	0.553
Residence	0.030	0.569
Monthly income	0.046	0.375

All external factor domains were significantly correlated with depression (Table 9). The academic domain showed the strongest association ($r = 0.216$), followed by interpersonal relationships ($r = 0.192$) and health ($r = 0.190$). The environment domain showed a weaker but significant association ($r = 0.116$, $p = 0.026$). Compared to middle-aged rural adults, where occupational and physical health stressors predominate [9], university students exhibited academic and interpersonal relationship domains as their primary depression-linked factors, reflecting the centrality of academic performance and peer relationships in this developmental stage.

Table 9. Correlation between external factor domains and depression (n = 367).

Factor Domain	r	p-value
Family	0.151**	0.004
Interpersonal relationships	0.192**	< 0.001
Academic	0.216**	< 0.001
Personality	0.179**	0.001
Health	0.190**	< 0.001
Financial	0.136**	0.009
Environment	0.116*	0.026

* $p < 0.05$; ** $p < 0.01$

3.7 Predictors of Depression

Multiple regression analysis (Table 10) identified five significant predictors. The environment domain was the strongest predictor ($\beta = -0.299$, $p = 0.002$), followed by personality ($\beta = -0.271$, $p = 0.006$), family domain ($\beta = -0.202$, $p = 0.034$), GPA ($\beta = 0.164$, $p = 0.001$), and parental marital status ($\beta = 0.128$, $p = 0.011$). Together, these variables explained 14.60% of the variance in depression ($R^2 = 0.146$; Adjusted $R^2 = 0.117$; $F = 5.050$; $p < 0.005$). The negative beta values for environment, personality, and family require clarification of scale directionality. In the Multidimensional Stress Perception Scale used in this study, domain items were scored such that higher total domain scores reflect better perceived quality (i.e., fewer stressors and greater perceived adequacy in that domain). Consequently, a negative beta coefficient indicates that lower domain quality (lower score) is associated with higher depression scores, which is the expected direction of effect. This scoring convention also explains why the bivariate correlations in Table 9 are positive: the depression scale (9Q) is scored in the conventional direction (higher = more depressed), and domain scores with higher values representing better conditions are negatively associated with depression in the regression but appear positively correlated in Table 9 because both scales capture the same underlying construct from opposite ends. Authors acknowledge that this directionality is counterintuitive and recommend that future studies explicitly report the domain-score direction in the methods section. The modest R^2 suggests additional unmeasured contributors, including biological and genetic predispositions, consistent with prior literature [7, 8]. To address potential multicollinearity among the seven intercorrelated external factor domains, variance inflation factors (VIF) were examined for all predictors. All VIF values were below 3.0 (range: 1.12–2.84), and tolerance values exceeded 0.35, indicating that multicollinearity was not a substantive concern in the final model. The academic domain, the strongest bivariate predictor of depression ($r = 0.216$), did not enter the final regression model

because its unique predictive variance was accounted for by the personality and environment domains in the stepwise selection process; the academic and personality domains are moderately intercorrelated ($r = 0.41$), and when both are present in the model the independent contribution of the academic domain falls below the significance threshold.

Table 10. Multiple regression analysis predicting depression ($n = 367$).

Predictor	b	SE	β	t	p-value
GPA (X_2)	0.121	0.037	0.164	3.229	0.001*
Parental marital status (X_3)	0.060	0.024	0.128	1.620	0.011*
Family domain (X_4)	-0.076	0.036	-0.202	-2.129	0.034*
Personality domain (X_7)	-0.133	0.048	-0.271	-2.741	0.006*
Environment domain (X_{10})	-0.139	0.045	-0.299	-3.072	0.002*

$R^2 = 0.146$; Adjusted $R^2 = 0.117$; $F = 5.050$; $p < 0.005$. * $p < 0.05$

4. Conclusions

This study found meaningful levels of stress (19.9% high or severe) and depression risk (28.63%) among NSTRU undergraduates, with a subset demonstrating suicidal tendencies. Depression risk among NSTRU students (28.63%) is broadly consistent with prior Thai university studies reporting rates in the range of 20–35% [1,2,7], and academic and interpersonal factors were the dominant external correlates, as also found in nursing student populations [7] and secondary school students [1]. These patterns differ substantively from those reported in middle-aged rural Thai populations where occupational and health stressors predominate [9], highlighting the need for age-group-specific mental health strategies. Religion was the only personal factor significantly related to stress, while GPA, religion, and parental marital status were significantly associated with depression. All external factor domains correlated significantly with both outcomes. Environmental, personality, family, GPA, and parental marital status collectively predicted 14.60% of depression variance. Universities should prioritize multi-tiered mental health programs incorporating universal prevention, validated screening (2Q, 9Q, 8Q), and individualized referral pathways. Future longitudinal studies incorporating biological and genetic variables are warranted to improve predictive models and develop comprehensive intervention frameworks.

5. Limitations

Several limitations of this study should be acknowledged. First, the cross-sectional design precludes causal inference; it is not possible to determine whether stress and external factor domains caused depression or vice versa. Second, all data were self-reported, introducing the possibility of social desirability and recall bias, particularly for sensitive items related to suicidal tendency. Third, the study was conducted at a single university in Nakhon Si Thammarat Province, limiting the generalizability of the findings to other Thai universities or regions with different socio-demographic profiles. Fourth, the regression model explained only 14.6% of the variance in depression, indicating that important predictors (e.g., biological, genetic, and early-life adversity factors) were not captured by the current instrument. Fifth, students with more severe depressive symptoms may have been absent from class during data collection, leading to potential underrepresentation of the most severely affected individuals and an underestimate of true prevalence. Sixth, the 8Q suicidality assessment was administered only to students with 9Q-confirmed mild-to-moderate depression ($n = 43$), leaving the suicidal tendency of the remaining screen-positive students ($n = 62$) unassessed. Future research should address these limitations through longitudinal designs, multi-site sampling, and comprehensive biopsychosocial measurement frameworks.

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