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Correlation of learning engagement and social support affecting the academic stress of Thai high school students

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ABSTRACT

High school students face an elevated risk of psychological problems, with multiple determinants contributing to this vulnerability. This cross-sectional study aimed to investigate the relationship between academic stress, social support, and learning engagement among Thai high school students. A total of 109 high school students were recruited from one school located in Bangkok, Thailand. The academic stress, social support questionnaires, and learning engagement questionnaires were completed and analyzed for the correlation using Pearson's and Spearman's analysis. Multiple linear regression was done to determine variables influencing on academic stress. Medium level of academic stress was found (mean±SD=3.21±0.73). Academic stress was significantly correlated with social support ($r=0.252$, $p<0.01$) in a positive direction; however, the negative correlation with learning engagement did not reach statistical significance ($rho=-0.108$, $p>0.05$). Positive influence on academic stress was also found in social support ($B=0.119$, $p<0.007$), but not the learning engagement ($B=-0.089$, $p=0.393$). Thai high school students had medium level of academic stress, which correlated with and be positively influenced by social support. Our findings emphasize the importance of appropriate social support system to reduce stress and promote well-being among Thai high school students.

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1. INTRODUCTION

High school students are at higher risk of experiencing psychological problems due to the significant physical and mental changes thy undergo during this period, compared to other populations [1]. According to the mental health surveillance among Thai populations in 2020, children and adolescents below the age of 20 have a 29.9% higher mental health issues than the general population [2]. Particularly among individuals aged 15 to 19 or at the high school age, financial difficulties within families rank as the most prominent concern (82%), followed by academic issues (learning and examination) and higher educational opportunities (57.1%). These findings align with previous studies enphasising the significant impact of academic stress on the mental health of high school students [3].

Various studies have highlighted the physical and psychological effects of academic stress, including early awakening and a sense of academic pressure, particularly among students who struggle to cope with these challenges [4]. Additionally, high school students face other risk factors for mental health problems, such as those resulting from the COVID pandemic, which have contributed to increased rates of stress and depression [5]. Moreover, certain coping strategies commonly employed by high school students, such as internet addiction and substance use (alcohol or smoking), can further exacerbate their mental health issues [6], [7].

Protective factors against academic stress have also been identified, including social support [8], defined as the care and support people feel from others, emotional support, material help or services, and providing good advice to assist others in problem resolution [9]. Learning engagement, which encompasses positive feelings towards learning and the interests in learning, is another significant factor [10]. It refers to perseverance to learn, which can be reflected by their motivation, behaviour in schools, and their continuity that push them to achieve academic success [11].

Considering the complex interplay between academic stress, social support, and learning engagement, understanding their correlation is essential for the well-being of high school students. However, research on these dimensions in specific contexts, such as Thailand, is limited, and the relationship between these factors remains unclear. Therefore, our study aimed to investigate the levels of academic stress, their correlation with social support and learning engagement among Thai high school students.

2. METHOD

2.1. Study design and participants

This cross-sectional study was conducted in a high school in Bangkok, Thailand, between January and May 2023. We distributed the information sheet and questionnaires to all students. Students interested in participating provided written informed consent from either themselves or their parents. We included only students who were proficient in both Thai and English as some questionnaires were in English. Students with a school dropout of more than one month were excluded. The sample size calculation was based on the correlation between academic stress, social support, and learning engagement from previous studies [12], [13] and required the minimum sample size of 48 participants. To ensure reliability and compensate for potential data loss during collection, we aimed to collect at least twice the minimum sample size (n=96). This study received the ethical approval from the Human Research Ethics committee of Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand (COA No. 0012/2023) (IRB No. 0771/65). Demographic data, including age, gender, academic performance, academic program, and current residential status, were collected.

2.2. Measurements

2.2.1. Learning engagement questionnaire

We utilised the modified student course engagement questionnaire (SCEQ-M) in this study. It consists of 23 items and can be rated on 5 Likert scale ranging from 1 (not at all characteristic of me) to 6 (very characteristic of me). The test was designed to compare students' level of engagement in classrooms using four dimensions of learning engagement: skills, participation/interaction, emotional, and performance engagement. Higher scores indicate higher engagement. This test has been assessed for its psychometric properties and showed the good results. In this study, the questionnaire was administered to a total of 276 students across various grade levels. The quality of the instrument was assessed using exploratory factor analysis (EFA) to examine its internal consistency. The results indicated that the values of internal consistency fell within the range of 71 to 81 [14]. In this research study, the measurement instrument's reliability, specifically the measure of academic engagement, was found to exhibit a high level of internal consistency, with a Cronbach's Alpha coefficient of 937.

2.2.2. Social support questionnaire

The multidimensional scale of perceived social support (MSPSS) was used in this study. This self-rated questionnaire consists of 12 items, rated on a Likert scale of 7 levels ranging from 1 (very strongly disagree) to 7 (very strongly agree) [15]. It assessed participants' perception of support from friends, family, and other important figures. The total score is positively correlated with the levels of social support. The MSPSS has been validated and demonstrated good psychometric properties. In this research, the measurement instrument's reliability, specifically the measure of social support, was found to exhibit a high level of internal consistency, with a Cronbach's Alpha coefficient of .973.

2.2.3. Academic stress questionnaire

Academic stress was rated using the educational stress scale (ESS), a self-rated 16-item questionnaire. Each item had 5 levels of answers, ranging from 1 (strongly disagree) to 5 (strongly agree) and responders with higher scores employ higher levels of academic stress. This tool was developed under the context of Chinese

education, where seems to be similar with our study's, and revealed good psychometric properties. Validation of the test was examined in a sample of 2,000 Chinese students using EFA. The assessment of internal consistency reliability, measured by Cronbach's alpha was .70, which is considered acceptable. To assess test-retest reliability over a two-week interval, the interclass correlation (ICC) was calculated. The results showed that the ICC values ranged from .44 to .67, indicating moderate to good reliability. Furthermore, concurrent validity was evaluated by comparing the instrument with the academic expectation stress inventory (AESI) using Pearson correlation. The analysis revealed a statistically significant positive correlation (rp=51, p<01), indicating a meaningful relationship between the two measures [16]. In this research, the measurement instrument's reliability, specifically the measure of academic engagement, was found to exhibit a high level of internal consistency, with a Cronbach's Alpha coefficient of 898.

2.3. Statistical analysis

Descriptive statistics were used to report demographic data and studied factors. Categorical variables were presented as counts and percentages, and continuous variables were shown, in mean with standard deviation or median with interquartile range as appropriate. To investigate correlation between each factor, we utilized Pearson's correlation and Spearman's correlation due to the contribution of the data. Multiple linear regression was analyzed to identify influences of social support and learning engagement on academic stress. A p-value of <0.05 was considered statistically significant and statistical package for the social sciences (SPSS) version 22.0 was used for the statistical analysis.

3. RESULTS AND DISCUSSION

3.1. Result

One hundred and nine students participated this study. Female participants were slightly outnumbered males, comprising 54.13% of the total. Most participants were aged between 16 and 17 years (79.81%). The mathematics-science program was the most prevalent among students (88.07%), and the majority reported currently living with their family (88.99%). Table 1 shows demographic data of the participants.

Table 1. Demographic data of the participants (N=109)

Characteristics		N	%
Age (years)	14 or below	1	0.92
	15	8	7.34
	16	30	27.52
	17	57	52.29
	18	9	8.26
	19 or above	4	3.67
	Median [IQR]	17 [1]	
Gender	Female	59	54.13
	Male	48	44.04
	Prefer not to say	2	1.83
GPAX	2.00-2.99	2	1.83
	3.00-3.49	11	10.09
	3.50-3.99	90	82.57
	4.00	6	5.50
Academic program	Mathematics-Science program	96	88.07
	Arts program	8	7.34
	Arts-Mathematics program	4	3.67
	Unspecified	1	0.92
Current residential status	With family	97	88.99
	Alone	7	6.42
	With friend	3	2.75
	With relative	1	0.92
	With family and relative	1	0.92
Total		109	100.00

Note: IQR–interquartile range; GPAX–accumulated grade point average

Table 2 showed the mean scores of academic stress, social support, and learning engagement measured by three questionnaires. The mean score for learning engagement, as assessed by the SCEQ-M, is 3.71±0.66. This score is similar to the mean score of academic stress, assessed using the ESS, which is 3.21±0.7. Additionally, the mean score of social support, assessed by the MSPSS, is 5.08±1.60.

Table 2. Mean, standard deviation, range, skewness and kurtosis of the variables (N=109)

Variables	Mean±SD	Maximum	Minimum	Skewness	Kurtosis
Learning engagement	3.71±0.66	5.00	1.87	-0.389	0.055
Social support	5.08±.1.60	7.00	1.00	-1.032	0.125
Academic stress	3.21±0.73	5.00	1.56	.047	0.053

Note: SD–standard deviation

The correlation between three studied variables was analysed using Pearson's Correlation and Spearman's Correlation Table 3. The analysis of the relationship using Pearson's correlation revealed significant correlations between academic stress and social support (r_p=0.252, p<0.01). Meanwhile, the analysis of the relationship using Spearman's correlation, a negative correlation between academic stress and learning engagement, but it did not reach statistical significance (r_s= -0.108, p>0.05).

Table 3. The correlation among engagement, social support and academic stress using Pearson's Correlation and Spearman's Correlation (N=109)

Variables	1	2	3
1. Learning engagement	1.000		
2. Social support	0.237*	1.000	
3. Academic stress	-0.108	0.252**	1.000

Note: *p<05, ** p<01

The influences of learning engagement and social support on academic stress were further analysed using the multiple linear regression analysis Table 4. According to the model, academic stress can be predicted by 2.937–0.089 x Learning engagement+0.119 x Social support. However, adjusted R^2 for the prediction was 0.052 and the negative influence of learning engagement also did not achieve statistical significance (B=-0.089, p=0.393).

Table 4. Multiple linear regression analysis of effects of learning engagement and social support on academic stress (N=109)

Variables	B	S.E.	t	P
Learning engagement	-0.089	0.104	-0.858	0.393
Social support	0.119	0.043	2.767	0.007
(Constant)	2.937	0.427	6.879	0.000
	R^2 = 0.070, adjusted R^2 = 052, p = 022			

3.2. Discussion

The mental health of students, especially in terms of academic stress and its impact has become a serious issue [17]. The present study revealed that higher secondary students experience academic stress. Learning engagement had a negative, but insignificant influence on academic stress at the level of .05. This assumption is formulated on the prior educational knowledge and the relationship between academic stress and learning engagement within the group of social science students (social science) from Makerere University of Kampala. It was found that there was a lacking amount of statistical correlation between learning engagement and academic stress [18]. An additional study conducted in Indonesia among high school students investigated the insignificant negative correlation between academic stress and student engagement (r=-0.39, p>0.05) [19].

This results however are inconsistent with previous studies, one of which was on the relationship between self-efficacy, student engagement, and academic stress and found the negative relationship between student engagement and academic stress at the level of .05 (r=-267, p<0.01) [20]. This explains the positive enforcement of academic performance, emotional intelligence, self-efficacy [21], and academic satisfaction [22] that could be attributed to student engagement, a result which becomes running factor for students to overcome their stress when they are faced with a problem [23]. Nevertheless, students who are consistently academically engaged are proned to be competitive in their classes, especially for ones with higher grades compared to ones with lower grades [24].

From what has been tested in this project, 82.57% of the subjects have grades between 3.50 and 3.99, thus making the learning environment more competitive and possibly cumilated into anxiety and stress [25]. For another one, social support had a positive influence on academic stress because people around you provide inappropriate or incorrect support, causing pressure or discomfort, which can lead to stress. Additionally,

parents put pressure on their children to achieve out of concern for their wellbeing and awareness of the competition for admission to reputable universities. The overall unemployment situation in Thailand has also provoked parents to put pressure on their children for better performance. Similarly, social support can be negative when it is unwanted, at odds with the needs of the recipient, or when it makes the recipient uncomfortable, which could unintentionally serve as a potential source of stress [26]. Conversely, high level of positive support may cushion the adverse effect of the stressor from negative supports on mental health [27]. Moreover, previous research explained that students with high levels of social support reported low level of academic stress [28]. As the level of academic stress has been linked to mental health status, it is intriguing to conduct further follow up on students experiencing significant stress, given their heightened risk of seeking mental healthcare providers after university admission [29], [30].

3.3. Limitations and future recommendations

This study includes limitations that must be taken into account. One disadvantage is the limited sample size, which restricts the capacity to generalize the findings to a larger population and makes it impossible to do participants analyses based on other factors that may have contributed to variances among the participants. Therefore, additional studies with suitable sample sizes are recommended to give substantial data about academic stress. This study collected the data within one school so the findings might not be generalizable to other schools or students in other years of study or programs. With a cross-sectional methodology, the present study's high predictability findings may not suggest a meaningful causal relationship. Therefore, future research will focus on this topic. Investigating the causal link by use of longitudinal investigations.

4. CONCLUSION

From this study's goal to find an impact of studying intensity and social support on high school students' stress, it is found out that the intensity has no negative impact on academic stress while social support has a distinctive positive impact. Therefore, it is suggested that students' relationships to societies, environment and individuals influence their levels of stress, especially appropriate social support would effectively improve learning atmosphere and academic performances. Consequently, the appropriate social support is expected to relieve the stress in learning. Then, it is supposed that low levels of academic stress will positively impact other learning outcomes.

REFERENCES

[1] M. Matud, A. Díaz, J. Bethencourt, and I. Ibáñez, "Stress and psychological distress in emerging adulthood: A gender analysis," *Journal of Clinical Medicine*, vol. 9, no. 9, Sep. 2020, doi: 10.3390/jcm9092859.

[2] R. Walaiporn and S. Yothin, "Institute for population and social research mahidol University Nakonpathom, Thailand," *Tourism and Hospitality Management*, vol. 28, no. 2, pp. 277–296, 2022.

[3] M. G. Acosta-Gómez *et al.*, "Stress in high school students: A descriptive study," *Journal of Cognitive Behavioral Therapy*, vol. 1, no. 1, pp. 1–10, 2018.

[4] S. Simpson, "Stress triggers, the effects stress has on social, mental and physical behavior in college students, and the coping mechanisms used," *Stress*, 2018, [Online]. Available: https://digitalcommons.murraystate.edu/bis437/215/

[5] G. Pungpapong and R. Kalayasiri, "Depression and anxiety plus levels of stress among secondary school students during the COVID-19 lockdown: An online crosssectional survey," *Journal of Health Science and Medical Research*, vol. 40, no. 2, pp. 157–171, Jan. 2022, doi: 10.31584/jhsmr.2021824.

[6] R. K. Sokhi, "Impact of academic stress on the behavior of the adolescents: A review," *International Journal of Indian Psychology*, vol. 7, no. 1, 2019.

[7] S. Xu, M. Park, U. G. Kang, J.-S. Choi, and J. W. Koo, "Problematic use of alcohol and online gaming as coping strategies during the COVID-19 pandemic: A mini review," *Frontiers in Psychiatry*, vol. 12, Jun. 2021, doi: 10.3389/fpsyt.2021.685964.

[8] M. S. Ullah, S. Akhter, M. A. Aziz, and M. Islam, "Social support: Mediating the emotional intelligence-academic stress link," *Frontiers in Psychology*, vol. 14, Sep. 2023, doi: 10.3389/fpsyg.2023.1218636.

[9] Y. Mai, Y. J. Wu, and Y. Huang, "What type of social support is important for student resilience during COVID-19? A latent profile analysis," *Frontiers in Psychology*, vol. 12, Jun. 2021, doi: 10.3389/fpsyg.2021.646145.

[10] J. Lee, H.-D. Song, and A. Hong, "Exploring factors, and indicators for measuring students' sustainable engagement in e-learning," *Sustainability*, vol. 11, no. 4, Feb. 2019, doi: 10.3390/su11040985.

[11] J. N. Moye, "Learning engagement," in *The Psychophysics of Learning*, Emerald Publishing Limited, 2021, pp. 69–86, doi: 10.1108/978-1-80117-113-720211006.

[12] B. M. Neelima and T. Shruti, "A study on correlation among academic stress and role of social support system in school students," *PalArch's Journal of Archaeology of Egypt/Egyptology*, vol. 17, no. 6, pp. 14143–14156, 2020.

[13] K. N. Siew and L. C. Seeh, "Student engagement and perceived academic stress: Open distance learning in Malaysia," 35th AAOU *Annual Conference, Jeju-do, Korea*, Nov, 2022.

[14] M. A. M. Nasir, T. Janikowski, W. Guyker, and C. C. Wang, "Modifying the student course engagement questionnaire for use with online courses," *Journal of Educators Online*, vol. 17, no. 1, 2020.

[15] G. D. Zimet, "Multidimensional scale of perceived social support (MSPSS)-scale items and scoring information," *Johns Hopkins University Press*, no. December, pp. 50–52, 2016.

[16] J. Sun, M. P. Dunne, X. Hou, and A. Xu, "Educational stress scale for adolescents," *Journal of Psychoeducational Assessment*, vol. 29, no. 6, pp. 534–546, Dec. 2011, doi: 10.1177/0734282910394976.

[17] Y. Deng *et al.*, "Family and academic stress and their impact on students' depression level and academic performance," *Frontiers in Psychiatry*, vol. 13, Jun. 2022, doi: 10.3389/fpsyt.2022.869337.
[18] K. Jane, "Academic stress and student engagement among undergraduate students of school of social sciences at Makerere University Kampala," *Dissertation*, vol. 26, no. 3, pp. 1–4, 2019.
[19] R. N. T. Kusyanti, "The relationship between academic stress and student engagement of high school students during the COVID-19 pandemic," (in Indonesia), *Ideguru: Jurnal Karya Ilmiah Guru*, vol. 6, no. 3, Sep. 2021, doi: 10.51169/ideguru.v6i3.276.
[20] M. K and A. Neethu, "Student engagement in relation to academic stress and self-efficacy," *Guru Journal of Behavioral and Social Sciences*, vol. 6, no. 1, pp. 775–784, 2018.
[21] C. Vizoso, C. Rodríguez, and O. Arias-Gundín, "Coping, academic engagement and performance in University Students," *Higher Education Research & Development*, vol. 37, no. 7, pp. 1515–1529, Nov. 2018, doi: 10.1080/07294360.2018.1504006.
[22] I. Urquijo and N. Extremera, "Academic satisfaction at university: The relationship between emotional intelligence and academic engagement," *Electronic Journal of Research in Educational Psychology*, vol. 15, no. 3, pp. 553–573, Dec. 2017, doi: 10.14204/ejrep.43.16064.
[23] T. Homklin, A. Pontanya, and C. Sakulsriprasert, "Influence of academic stress on academic performance and learning engagement among undergraduate students with psychological capital as a mediator," *Panyapiwat Journal*, vol. 14, no. 2, pp. 277–292, 2021.
[24] D. Pawan, *Hyper education: Why good schools, good grades, and good behavior are not enough*. NYU Press, 2020, doi: 10.1177/23326492221103630.
[25] D. Ogunyemi, C. Clare, Y. M. Astudillo, M. Marseille, E. Manu, and S. Kim, "Microaggressions in the learning environment: A systematic review," *Journal of Diversity in Higher Education*, vol. 13, no. 2, pp. 97–119, Jun. 2020, doi: 10.1037/dhe0000107.
[26] Y. Chandra, "Online education during COVID-19: Perception of academic stress and emotional intelligence coping strategies among college students," *Asian Education and Development Studies*, vol. 10, no. 2, pp. 229–238, Oct. 2020, doi: 10.1108/AEDS-05-2020-0097.
[27] L. Huang and T. Zhang, "Perceived social support, psychological capital, and subjective well-being among college students in the context of online learning during the COVID-19 pandemic," *The Asia-Pacific Education Researcher*, vol. 31, no. 5, pp. 563–574, Oct. 2022, doi: 10.1007/s40299-021-00608-3.
[28] H. A. Prayitno and B. Andayani, "The relationship between peer social support and academic stress among University Students during the COVID-19 pandemic," (in Indonesia), *ANIMA Indonesian Psychological Journal*, vol. 38, no. 1, Jan. 2023, doi: 10.24123/aipj.v38i1.4711.
[29] G. Barbayannis, M. Bandari, X. Zheng, H. Baquerizo, K. W. Pecor, and X. Ming, "Academic stress and mental well-being in college students: Correlations, affected groups, and COVID-19," *Frontiers in Psychology*, vol. 13, May 2022, doi: 10.3389/fpsyg.2022.886344.
[30] M. Chiddaycha and S. Wainipitapong, "Mental health among thai medical students: Preadmission evaluation and service utilization," *Health Science Reports*, vol. 4, no. 4, Dec. 2021, doi: 10.1002/hsr2.416.

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