Factors associated with stress among high school students preparing for University Admission in Bangkok

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Abstract

Background: Many students' futures are determined by their performance on the university entrance exam. To enter the university, you must achieve good test scores, which might be stressful and possibly exacerbate frustration. Therefore, by gathering this information, I intend to evaluate the problems with the Thai educational system and improve it for students. Objective: To assess level of stress among high school students and analyze factors associated with level of stress.Study Methods: A cross sectional online survey, the data was collected from 172 students from grades 10-12 from Sarasas Ektra School in Bangkok from 15 September to 19 October 2022. The data were collected via Google Forms by using the DASS21 Questions. The data were analyzed for the prevalence and associated factors by using descriptive statistics and IBM SPSS.Results: A total of 172 high school students participated in this study, the results showed that participants had a moderate level of stress (M=3.69, SD=1.20). Male participants (N=111, 64.5%) reported a higher level of stress than female participants' (N=61,35.5%). Grade 12 participants (N=72, 41.9%) had the highest stress level. Participants who enrolled in the Science-Math program (N=107, 62.2%) reported the highest level of stress among other participants who studied in other programs. Majority of the participants who were in a group of GPAX between 3.5 and 4.00 (N=108, 62.8%) had the highest level of stress. Additionally, those who spent monthly tuition expenses more than 10,000 Baht per month (N=13, 7.6%) reported the highest level of stress. Most of the participants spent more than 4 hours on social media (N=85, 49.42%) per day and spent less than 7 hours per week on special tuition(N=112, 65.12%).The vast majority of the participants spent more than 6 hours on leisure activity per week (N=78, 45.35%). The analysis of factors associated with participants' stress level included GPAX (p=0.008), Monthly Tuition Expenses (p=0.007), Be Able to study as planned (p=0.002),Be Able to get admitted into target faculty is important(p=0.000),Future Income Factor(p=0.040),Perception of Parental Conclusion: Most participants reported a moderate level of stress. Factors associated with participants' level of stress contributed from both internal factors and external factors of participants, depending on different individuals.

Keywords: Stress, adolescent, high school, university admissions

Introduction

Exams for entry into universities are crucial because it decides the student's future. Many students' futures are determined by their performance on the university entrance exam. Who will prevail or fall short, and the Thai educational system since kindergarten is therefore primarily focused on the university entrance exam[1]. Furthermore,the culture of Thai People believe that university graduation is a ticket to success in life and they will have decent work to accomplish, a high income, and a secure future so that they can build a reputation that is respected by their family and society. Due to this mentality, university entrance exams have developed into an annual event that puts a lot of strain and stress on students.Moreover, there is high competition in some faculties and researchers contend that even after switching to TCAS, Thai youngsters still face pressure to perform well in school. To enter the university, you must achieve good test scores, which might be stressful and possibly exacerbate frustration. According to the WHO, suicide is the second greatest cause of death for people between the ages of 15 and 29. It is advised that the admissions process for higher education include distinct educational objectives[2]. Parents had high hopes for their children, who had an average grade of 3.88. Most parents encouraged their children to work hard in school in order to have a better future. Children who have a passion for studying should pursue at least a bachelor's degree. Interested in students' academic progress and prepared to offer financial assistance will only put pressure on the kids,making them strive to behave well.High levels of competitiveness for admission to every educational level, from kindergarten through secondary school and university admission exams are the cause of the child's stress . They must also carry the expectations of the family, who want them to grow up to be good person."The more advanced classes ,the greater the likelihood of their success", the greater the invisible cost that parents are to blame for contributing to educational inequalities and put pressure on kids who have to live up to their parents' expectations.[3]Everywhere should serve as a school while the COVID-19 pandemic is ongoing. Considering that instruction must continue even if pupils are

unable to attend class as usual. Governments frequently release educational initiatives to support schools that have been closed in numerous nations using several distance learning methods while taking into account the parent's equipment readiness and the child's age-appropriate readiness.Due to the many restrictions associated with the online learning process and the fact that some students find it difficult to concentrate at home due to numerous distractions, this could result in the student not fully understanding the lesson that was taught .This will make the student more stressed and force them to take additional classes to learn more about the subject. This is because they were afraid they wouldn't get into the university they wanted.

This topic interests me because it relates to me in some way. In order to portray the views and sentiments of high school students in their pre-university lives, I wish to collect and evaluate data by examining how different activities are divided up into time.

By obtaining this information, I hope to assess the issues with the Thai educational system and improve it for students as attending college is a priority for the majority of people and as I mentioned earlier, stress can result in issues that I want would not arise for anyone, but I want to avoid them from happening. I was aware that change would take time, and although this data would not be sufficient to address every issue with our educational system, I was confident that it could help to identify the issues.

Study Methods

This was a cross-sectional observational study. An online questionnaire was purposely developed and made available through Google Forms between 22-30 September 2022. Grade 10-12 students who could access the internet were eligible and they were invited to participate in the study. The invitation was sent to classes' social media groups of grade 10-12. In the invitation had information about the objectives of the study as well as the ethical guarantee of confidentiality and anonymity in the data collected as stated in the informed consent were explained. Participation was completely free and voluntary, and no personal data were collected from any participants.

Instrument

The questionnaire was developed based on a literature review and related previous studies. The instrument was reviewed by 3 experts to validate the content. The questionnaire contained 21 questions, 9 about socio demographic data (gender, class level, study program, perceived competition level, academic grade, monthly extra tuition expenses, No. of hours for leisure activities, No. of hours for social media, and stress level). And 12 questions were divided into 3 categories as following

Attitude and motivation: in this scale consisted of 6 questions, and the response categories consisted of five-point Likert scale (1 for least - 5 for most) with the highest score corresponding to more positive attitudes toward university admissions. The attitudes toward university admissions consisted of 6 items ranging between 6-24, greater than or equal to 19 as a good level, greater than 14 but less than 18 as a moderate level, and less than 14 as a poor level.

Environment factors: in this scale consisted of 3 questions, and the response categories consisted of five-point Likert scale (1 for least - 5 for most) with the highest score corresponding to more positive attitudes toward university admissions. The Environmental factor questions consisted of 3 items ranging between 3-18, greater than or equal to 14 as a good level, greater than 11 but less than 14 as a moderate level, and less than 11 as a poor level.

University Preparation Behavior: this scale measures the number of hours participants spent on preparing for university admissions.

Statistical Analysis

SPSS version 26 was used to analyze the data collected. The descriptive analyses were presented in absolute (n) and relative (%) frequencies, mean (M), standard deviation (SD) and Pearson's Chi-Square to analyze associated factors.

Result

From a total of 172 participants, the majority was male (N=111, 64.5%) and female (N=61, 35.5%). Most participants studied in grade 12 (N=72, 41.9%) and the second most belonged to grade 11 (N=53, 30.8%) and third was grade 10 (N=47, 27.3%).The Math-Science choice made up the majority of the participant's study program (N=107,62.2%) and the rest was non Math-Science (N=65, 37.8%).The majority of participant GPAX lie between the ranges of 3.51-4.00 (N=108, 62.8%), 3.01-3.50 (N=45, 26.2%), and 2.00-3.00 (N=16, 9.3%), with less than 2.00 (N=3, 1.7%) coming in last.The majority of participants' extra monthly tuition costs were less than 1000 baht (N=60, 34.9%), followed by second-place spending of between 3001 and 6000 baht (N=42, 24.4%), third-place spending of between 1001 and 3,000 baht (N=34, 19.8%), and fourth-place spending of over 10,000 baht (N=13, 7.6%).

For the stress level of Participants, the result showed that participants' stress level was at a moderate level (M=3.69, SD=1.20). Male participants (M=3.77 , SD=1.21) reported a higher level of stress than female participants (M=3.54 , SD=1.19).Grade 12 participants (M=3.96 , SD=1.13) experience the most stress, followed by Grades 11 (M=3.57 , SD=1.15) and 10 (M=3.40 , SD=1.30).Stress levels were reported to be higher in Math-Science programs (M=3.84 , SD=1.14) than in non Math-Science programs (M=3.43 , SD=1.26).The participant with a GPAX score between 3.51 and 4.00 (M=3.84 , SD=1.08) had the most stress, followed by those with scores between 3.01 and 3.50 (M=3.58 , SD=1.30), 2.00 and 3.00 (M=3.06 , SD=1.44), and less than 2.00 (M=3.00 , SD=2.00).Participants who spent more than 10,000 baht (M=4.23 , SD=0.73), between 6001 and 10,000 baht(M=3.96 , SD=1.15), and between 3,001 and 6,000 baht (M=4.05 , SD=0.88) experienced high levels of stress.Participants who spend between 1001 and 3000 baht (M=3.85 , SD=1.13) and less than 1000 baht (M=3.12 , SD=1.34) experience moderate stress.

Table 1. Demographic characteristic of participants and stress level (n=172)

Variable	N (%)	Stress Level for College Preparation
Gender		
Male	111 (64.5%)	3.77 (1.21)
Female	61 (35.5%)	3.54 (1.19)
Class Level		
Grade 10	47 (27.3%)	3.40 (1.30)
Grade 11	53 (30.8%)	3.57 (1.15)
Grade 12	72 (41.9%)	3.96 (1.13)
Study Program		
Math-Science	107 (62.2%)	3.84 (1.14)
Non Math-Science	65 (37.8%)	3.43 (1.26)
GPAX		
3.51-4.00	108 (62.8%)	3.84 (1.08)
3.01 - 3.50	45 (26.2%)	3.58 (1.30)
2.00 - 3.00	16 (9.3%)	3.06 (1.44)
< 2.00	3 (1.7%)	3.00 (2.00)
Extra Monthly Tuition Expense		
>10,000	13 (7.6%)	4.23 (0.73)
6,001 - 10,000	23 (13.4%)	3.96 (1.15)
3,001 - 6,000	42 (24.4%)	4.05 (0.88)

1,001 - 3,000	34 (19.8%)	3.85 (1.13)
<1,000	60 (34.9%)	3.12 (1.34)
Total	172 (100%)	3.69 (1.20)

Most of the participants spent less than 7 hours of tuition per week (N=112, 65.12%), followed by 7-14 hours of tuition per week (N=42, 24.4%), 15–21 hours (N=15, 8.2%), 22–28 hours (N=1, 0.58%), and more than 28 hours (N=2, 1.16%).In grade 10, the majority of students spent fewer than 7 hours (N=33, 70.21%) on tuition, followed by 7–14 hours (N=11, 23.40%) and 15–21 hours(N=3, 6.38%), with no participants spending between 22-28 hours (N=0, 0%) or more(N=0, 0%).Most participants in grade 11 spent fewer than 7 hours (N=42, 58.33%) on tuition, then 7 to14 hours (N=13, 24.53%), then 15 to 21 hours (N=3, 5.66%) with no one spending between 22-28 hours (N=0, 0%) or more (N=0, 0%).The majority of participants in grade 12 spend less than 7 hours in tuition (N=42, 58.33%), followed by 7–14 hours (N=18, 25%), 15–21 hours (N=9, 1.25%), between 22–28 hours (N=1, 1.39%), and more than 28 hours (N=2, 2.78%).

Table 2. Participants' No. of hours per week spent on Special Tuition among different grade levels

	> 28 Hours	22-28 Hours	15-21 Hours	7-14 Hours	< 7 Hours	Total
Grade 10	0 (0%)	0 (0%)	3 (6.38%)	11 (23.40%)	33 (70.21%)	47 (100%)
Grade 11	0 (0%)	0 (0%)	3 (5.66%)	13 (24.53%)	37 (69.81%)	53 (100%)
Grade 12	2 (2.78%)	1 (1.39%)	9 (1.25%)	18 (25.00%)	42 (58.33%)	72 (100%)
Total	2 (1.16%)	1 (0.58%)	15 (8.72%)	42 (24.42%)	112 (65.12%)	172 (100%)

More than 6 hours (N=78, 45.35%) are spent on leisure activities by the vast majority of participants, followed by 3 to 6 hours (N=70, 40.70%) and then fewer than 3 (N=24, 13.95%).The majority of students in grade 10 spent between 3 and 6 hours (N=22, 46.81%), followed by more than 6 hours (N=19, 40.43%), and fewer than 3 hours (N=6, 12.77%), on leisure activities.In grade 11, the majority of participants spent more than 6 hours (N=28, 52.83%), followed by 3–6 hours (N=16, 30.19%), and fewer than 3 hours (N=9, 16.98%), on leisure activities.The majority of grade 12 students engaged in leisure activities for between 3 and 6 hours (N=32, 44.44%), followed by more than 6 hours (N=31, 43.06%), and less than 3 hours (N=9, 12.50%).

Table 3. Participants' No. hours spent on leisure activities per week

	>6 hours N (%)	3 - 6 hours N (%)	<3 hours N (%)	Total N (%)
Grade 10	19 (40.43%)	22 (46.81%)	6 (12.77%)	47 (100%)
Grade 11	28 (52.83%)	16 (30.19%)	9 (16.98%)	53 (100%)
Grade 12	31 (43.06%)	32 (44.44%)	9 (12.50%)	72 (100%)
Total	78 (45.35%)	70 (40.70%)	24 (13.95%)	172 (100%)

More than 4 hours (N=85, 53.20%) are spent on social media by the vast majority of participants, followed by 2 to 4 hours (N=70, 40.70%) and then fewer than 1 (N=17,9.88%).The majority of students in grade 10 spent more than 4 hours (N=25, 53.20%), followed by 2 to 4 (N=18, 38.30%), and fewer than 1 hours (N=4, 8.51%), on social

,media.In grade 11, the majority of participants spent more than 4 hours (N=29, 54.72%), followed by 2 to 4 hours (N=17, 32.08%), and fewer than 1 hours (N=7, 13.21%), on social media.The majority of grade 12 students used social media for between 2 and 4 hours (N=35, 48.61%), followed by more than 4 hours (N=31, 43.06%), and less than 1 hours (N=6,8.33%).

Table 4. Participants' No. of hours spent on social media per day

	> 4 hours	2-4 hours	< 1 hours	Total
Grade 10	25 (53.20%)	18 (38.30%)	4 (8.51%)	47 (100%)
Grade 11	29 (54.72%)	17 (32.08)	7 (13.21%)	53 (100%)
Grade 12	31 (43.06%)	35 (48.61%)	6 (8.33%)	72 (100%)
Total	85 (49.42%)	70 (40.70%)	17 (9.88%)	172 (100%)

The internal factor that affects the participant in selecting target faculty among different grade levels consists of Be able to study as planned, Perception of the importance of target faculty admission, Future Income factors, Job Security factors, Challenging factors, Skills and competency factor. Perception of the importance of target faculty admittance is one of the elements that tends to have the biggest impact (M = 4.12 SD=0.89), followed by skills and competency (M = 3.80 SD=0.98) ,security factor (M = 3.72 SD=1.04), future income factor (M = 3.69 SD=1.02), challenging factors (M = 3.43 SD=1.10), and how they are able to study as planned (M = 3.10 SD=0.88). The factor perception of importance of target faculty admission(M = 4.06 SD=0.92) tends to affect grade 10 participants more than security factors (M = 3.89 SD=1.05), income factors (M = 3.87 SD=1.06), as well as in skills and competency factor (M = 3.80 SD=1.04), challenging factors (M = 3.26 SD=1.21), and how they are able to study as planned (M = 2.96 SD=0.99). More so than security factors (M = 3.62 SD=1.08), future income factors (M = 3.74 SD=0.92), skills and competency factors (M = 3.75 SD=0.99), challenging factors (M = 3.30 SD=1.067), and lastly their ability to complete their studies as planned (M = 3.08 SD=0.85), the factor perception of importance of target faculty admission (M = 4.00 SD=0.96) tends to have an impact on grade 11 participants.The factor perception of importance of target faculty admission (M = 4.24 SD=0.81) tends to have an impact on grade 12 participants more than skills and competency factors (M = 3.82 SD=0.95) ,security factors (M = 3.67 SD=1.01), challenging factors (M = 3.64 SD=1.04) , future income factors (M = 3.54 SD=1.06) and finally their ability to complete their studies as planned (M = 3.21 SD=0.80). (Table 5)

Table 5. Participants' Internal Factors selecting target faculty among different grade levels

	Be able to study as planned M (SD)	Perception of importance of target faculty admission M (SD)	Income factors M (SD)	Job Security factors M (SD)	Challenging factors M (SD)	Skillsand competency f actor M (SD)
Grade 10	2.96 (0.99)	4.06 (0.92)	3.87 (1.06)	3.89 (1.05)	3.26 (1.21)	3.80 (1.04)
Grade 11	3.08 (0.85)	4.00 (0.96)	3.74 (0.92)	3.62 (1.08)	3.30 (1.067)	3.75 (0.99)
Grade 12	3.21 (0.80)	4.24 (0.81)	3.54 (1.06)	3.67 (1.01)	3.64 (1.04)	3.82 (0.95)
Total	3.10 (0.88)	4.12 (0.89)	3.69 (1.02)	3.72 (1.04)	3.43 (1.10)	3.80 (0.98)

The perception of parental support, the perception of parental expectations, and the effect of environmental factors make up the perception of external factors among different grade levels.Out of these three factors, participants' perceptions of parental support(M = 4.17 SD=1.02) and expectations(M = 3.73 SD=1.07) from parents seem to have

the greatest influence, followed by environmental impacts(M = 3.53 SD=1.15).Participants in grade 10 seem to be most influenced by their perceptions of parental support(M = 4.09 SD=1.04), parental expectations(M = 3.70 SD=1.12), and study environmental factors(M = 3.36 SD=1.29), in that order.Parental support (M = 4.11 SD=1.05), parental expectations (M = 3.62 SD=1.08), and study environment (M = 3.53 SD=1.03), in that order, appear to have the greatest effects on participants in grade 11.The factors that seem to have the biggest effects on grade 12 participants are parental support (M = 4.28 SD=0.99), parental expectations (M = 3.82 SD=0.97), and study environment (M = 3.65 SD=1.13), in that order.

Table 6. Perception of External Factors among different grade levels

	Perception of Parental Support M (SD)	Perception of Expectation from Parents M (SD)	Study Environmental factors M (SD)
Grade 10	4.09 (1.04)	3.70 (1.12)	3.36 (1.29)
Grade 11	4.11 (1.05)	3.62 (1.08)	3.53 (1.03)
Grade 12	4.28 (0.99)	3.82 (0.97)	3.65 (1.13)
Total	4.17 (1.02)	3.73 (1.07)	3.53 (1.15)

From the analysis for factors associated with participants' stress level (p<0.05) were GPAX, Monthly Tuition Expenses, Be Able to study as planned, Be Able to get admitted into target faculty is important, Future Income Factor, Perception of Parent Expectation and Study environmental factor.

Table 7. Factors associated with participants' stress level

Variable	P Value
GPAX	0.008
Monthly Tuition Expenses	0.007
Be Able to study as planned	0.002
Be Able to get admitted into target faculty is important	0.000
Future Income Factor	0.040
Perception of Parental Expectation	0.015
Study Environment factor	0.000

Discussion

In this study, assessed stress level of high school students that were preparing for university admission and factors associated with their stress level. Sociodemographic factors which were studied were gender,class ,study program,GPAX,extra monthly tuition expense. Motivation factors were being able to study as planned, perception of importance of target faculty admission, future income factors, job security factors, challenging factors, skills and competency factors. For external factors were perception of parental support, perception of expectation from parents, and study environmental factors. The results showed that participants had a moderate level of stress (M=3.69, SD=1.20). Male participants (N=111, 64.5%) reported a higher level of stress than female participants' (N=61,35.5%) and grade 12 participants (N=72, 41.9%) had the highest stress level. Concerning the study program, participants who enrolled in Science-Math (N=107, 62.2%) reported the highest level of stress among other participants who studied in other programs. The majority of the participants who were in a group of GPAX between 3.5 and 4.00 (N=108,

62.8%) had the highest level of stress. Additionally, those who spent monthly tuition expenses more than 10,000 Baht per month (N=13, 7.6%) reported the highest level of stress. Most of the participants spent more than 4 hours on social media (N=85, 49.42%) per day and spent less than 7 hours per week on special tuition(N=112, 65.12%).The vast majority of the participants spent more than 6 hours on leisure activity per week (N=78, 45.35%).The analysis of factors associated with participants' stress level included GPAX (p=0.008), Monthly Tuition Expenses (p=0.007), Be Able to study as planned (p=0.002),Be Able to get admitted into target faculty is important(p=0.000),Future Income Factor(p=0.040),Perception of Parental Expectation(p=0.015). According to previous studies, family relationships were associated with the mental health of students preparing for university entrance exams.[4] Lastly for stress the predictive factors were relationship with friends, attitude towards online learning and mental health conditions.[5]The aspect that most affected was the relationship with the family.[6]From the research, it was highlighted that relationships with family and close friends; having a close friend with mental illnesses; financial impact in the family due to COVID-19 were the key factors that lead to the prevalence of depression. Results of this study showed that, male participants had a higher level of stress than female participants; it could be attributed to most of male students in this specified school aimed at competitive faculties therefore encountering a high level of stress .Due to the admissions deadline being so near in comparison to grade 10 and 11, grade 12 participants reported the highest stress level among all other classes.Participants who were in the highest GPAX group of 3.51-4.00 showed the highest level of stress, this may be because of the fact that the faculty that they are trying to apply were very competitive and very hard to get into so they have to study hard and spend a lot money on tuition so that why the participant who spent more than 10000 baht per month were experienced high levels of stress. [7] The more money spent on tuition, the more stressed and worried the participant will be. This is because the more they spend, the more they anticipate being accepted into the university of their choice and the more afraid they are that they will not succeed. Number of hours of tuition per week was not related to the stress level of the participants. From the results of the study, it can be seen that the number of participants who studied more than 14 hours per week was 2 (1.16%), but the key factor affecting the participants' stress levels was the factor Be Able to study as planned (p= 0.002), including weekly leisure and social media per day, were also not correlated with participants' stress levels. Participants' Internal Factors selecting target faculty, participants reported that Perception of importance of target faculty admission was the highest average score (M=4.12, SD=0.89), followed by Job Security factors (M=3.72, SD=1.04), and Future Income factors (M =3.69, SD=1.02) subsequently. In general, choosing the faculty that you are interested in studying basically will come from the preferences and interests of the participants, with the parents to provide guidance, advice and support . In Thai or Asian society, the parents will still take care of their children if they are unable to take care of themselves (In financial matters). Therefore, the issue of job security is one of the ways parents recommend their children.The results show that the external factor,perception of parental support , had a high score (M=4.17, SD=1.02). The participants who have high GPAX may be under stress because the GPAXis their first step toward getting into the university of their choice [8] [9]. Moreover,the participants' increased awareness of their parents' support as a result of the monthly tuition expenses may have an impact on their level of stress. The participants will feel more confident if they were able to study for the exam as planned. On the other hand, failing to plan the preparation might cause stress and a lack of confidence. Putting a lot of focus on getting into the college of their choice may put pressure on both them and others around them.Thus, the majority of people who think it's important to get into the target faculty experience stress. The fact that you will have a solid income opportunity after graduating from that faculty may be the reason the participant believes it is necessary to be able to be admitted into the target faculty [10]. According to earlier studies, participants' stress is influenced by recognizing the parent's expectations [11] [12] [13]. There are various elements affecting the participants' mental health, such as the local environment, Internet speed, weather, and how they perceive threats, which can all affect their ability to focus and learn effectively [14] [15].

Limitation
This study conducted by online survey, there was a possibility that participants of this study wouldn't attentively answer survey questions.

Conclusion
172 high school students participated in this study, the results showed that participants had a moderate level of stress (M=3.69, SD=1.20). Male participants (N=111, 64.5%) reported a higher level of stress than female participants' (N=61,35.5%) and grade 12 participants (N=72, 41.9%) had the highest stress level. Concerning the study program, participants who enrolled in Science-Math (N=107, 62.2%) reported the highest level of stress among other participants who studied in other programs. Majority of the participants who were in a group of GPAX between 3.5 and 4.00 (N=108, 62.8%) had the highest level of stress. Additionally, those who spent monthly tuition expenses more than 10,000 Baht per month (N=13, 7.6%) reported the highest level of stress. Most of the participants spent

more than 4 hours on social media (N=85, 49.42%) per day and spent less than 7 hours per week on special tuition(N=112, 65.12%).The vast majority of the participants spent more than 6 hours on leisure activity per week (N=78, 45.35%).The analysis of factors associated with participants' stress level included GPAX (p=0.008), Monthly Tuition Expenses (p=0.007), Be Able to study as planned (p=0.002),Be Able to get admitted into target faculty is important(p=0.000),Future Income Factor(p=0.040),Perception of Parental Expectation(p=0.015).

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