



# ผลของการเรียนเชิงปฏิบัติการหัวข้อการจัดการ อารมณ์และความเครียดต่อระดับความเครียดของ นักศึกษามหาวิทยาลัยธรรมศาสตร์

## The Effect of Emotional and Stress Management Class on Stress Levels of Thai Students at Thammasat University

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### บทคัดย่อ

**วัตถุประสงค์** ศึกษาาระดับความเครียดของนักศึกษาระดับชั้นปีที่ 1 และ 2 (กลุ่มวิทยาศาสตร์และเทคโนโลยี กลุ่มวิทยาศาสตร์สุขภาพ และกลุ่มสังคมศาสตร์และมนุษยศาสตร์) ก่อนและหลังเข้าเรียนหัวข้อการจัดการอารมณ์และความเครียด

**วิธีการศึกษา** เป็นการศึกษาผลก่อนและหลังเรียนแบบไม่มีกลุ่มควบคุมโดยใช้แบบประเมินความเครียดแบบตอบด้วยตนเองของสวอนปรุง วิเคราะห์ข้อมูลด้วยสถิติเชิงพรรณนาและสถิติอ้างอิง

**ผลการศึกษา** นักศึกษาตอบแบบสอบถามครบสมบูรณ์ 3,459 คน (เป็นเพศชาย 990 คน คิดเป็นร้อยละ 28.6) ระดับคะแนนความเครียดเฉลี่ย (±ค่าเบี่ยงเบนมาตรฐาน) ของนักศึกษาก่อนเรียนและหลังเรียนเท่ากับ  $47.22 \pm 13.52$  (ความเครียดระดับสูง) และ  $35.89 \pm 12.49$  (ความเครียดระดับปานกลาง) ตามลำดับ แตกต่างกันอย่างมีนัยสำคัญ ( $p < 0.01$ ) และพบในทำนองเดียวกันระหว่างนักศึกษาทั้ง 3 กลุ่ม

**สรุป** การเรียนการจัดการอารมณ์และความเครียดประสบผลสำเร็จในการลดความเครียดให้กับนักศึกษามหาวิทยาลัยไทย และแสดงให้เห็นว่าเป็นกลยุทธ์ที่ดีในการดูแลสุขภาพนักศึกษา อย่างไรก็ตามการวิจัยในอนาคตควรมีการศึกษาถึงผลในระยะยาวและบทบาทในการเป็นส่วนหนึ่งของกลยุทธ์เพื่อลดความเครียดในนักศึกษา

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## ABSTRACT

**Objectives** : To investigated stress levels of freshman and sophomore students (Science and Technology, Health Sciences, Social Science and Humanities) before and after attending one class on emotional and stress management.

**Methods** : This research was a pretest-posttest study without control group using the self-reported stress test (Suan Prung Stress Test; SPST-20). The data analysis was performed with both descriptive and inferential statistics.

**Results** : Three thousand four hundred and fifty-nine students [male 990 (28.6%)] completed the questionnaires. The mean ( $\pm$ standard deviation) pre and post class stress levels were  $47.22\pm 13.52$  (high stress) and  $35.89\pm 12.49$  (moderate stress), respectively ( $p<0.01$ ), and were similar between the three groups of students.

**Conclusions** : Once class on emotional and stress management successfully reduced stress in this broad range of Thai university students and represented a good strategy for maintaining student health. More research is needed to evaluate its long term effect and its role in as part of a broad strategy of stress reduction in students.

**Keywords** : emotion, stress, Thai, student, university

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## Introduction

In 2009, a report from Bureau of Epidemiology of the Thai Ministry of Public Health, Thailand reported that there were 5,797 seriously injured people resulting from self-harm. This accounted for 3.78% of all injured people and one fifth of all cause serious injury. Females were more commonly affected than males (1.3:1) and the highest rate (56.94%) was found among 20- to 39-year-old individuals, followed by those aged less than 19 (20.39%). Both groups encompass the ages of university students. Regarding suicides, there were 501 and this ranked fourth in the causes of all deaths in Thailand. However, compared with serious injury, males were more commonly affected with a male to female of 2.1:1 but the 20-39 age group (42.12%) was still the highest risk group<sup>1</sup>.

Sathirapanya et al. reported that approximately 60% of Thai university students had high stress level. Undergraduate students had high stress level, while master degree students from regular program had moderate stress level. There was no significant difference of stress level between male and female students. Stress levels varied by faculty, students from the faculty of Law had the highest stress level, and health and sports science had the lowest stress level<sup>2</sup>. Common causes of stress included family, relationships, academic pressure, poor sleeping and eating habits, and financial worries. Stress-relieving activities commonly used by the students were exercising, spending time with friends/family, sleeping, watching TV, and drinking alcohol<sup>3</sup>. Moreover, other various stressors such as social, emotional and unexpected difficulties in their future can impact on their academic performance potentially as well as their learning abilities<sup>4</sup>.

High stress levels can seriously affect the family and friend relationships, academic achievement, and physical and emotional health. Support programs such as stress management classes and hotlines for mental health consultation may be helpful for students to cope with their stress and problems. Recent research shows that several interventions decrease the stress in students. For example, the use of poetry as an intervention technique significantly reduced signs of depression, anxiety, and stress in Iranian female university students<sup>5</sup>. Additional techniques to manage the stress were time management for learning and going out, exercise regularly and meditation<sup>6</sup>. Moreover, Jain *et al.* reported that both mindfulness meditation and somatic relaxation training techniques not only significantly decreased distress but also increased positive emotional states over time<sup>7</sup>. Another study demonstrated reductions of anxiety and stress levels in Iranian nursing and midwifery students through implementing a stress management training program<sup>8</sup>. Not only stress level and emotions were measured after attending the stress management program, the physiological changes such as respiratory rate and salivary cortisol levels were also examined. Interestingly, decreased respiratory rates and lower salivary cortisol levels were shown, compared to their own first values<sup>9</sup>.

Recently, Thammasat University (TU) in Thailand, has focused on life skills development, including stress management, for students to enhance their quality of life. One area assigned to the freshman and sophomore students was emotional and stress management. Herein, we report the results of this initiative.

## Objectives

This research aimed to evaluate the stress level of freshman and sophomore students before and after attending emotional and stress management class. The stress level before and after class was compared among faculty groups.

## Methodology

### 1. Participants

This research was a pretest-posttest study examining the effect of stress and emotional management on stress experienced by students from across a spectrum of faculties at TU, situated in the northern Bangkok conurbation. The protocol was approved by the Human Research Ethics Committee of Thammasat University No.1 (Faculty of Medicine) (Project identification code: 163/2559).

### 2. Procedure

Freshman and sophomore students who attended class were recruited in to the study. The stress level of students was evaluated using the Suan Prung Stress Test (SPST-20) containing 20 self-administered questions<sup>10</sup>. For reliability analysis, Cronbach's alpha coefficient of this test is more than 0.7. The SPST-20 score defines four levels of stress: (i) 0-24: mild, (ii) 25-42: moderate, (iii) 43-62: high, and (iv) over 63: severe stress.

### 3. Sampling

Before enrollment, the study purpose was explained and how to complete the questionnaire. Students were assured that participation was voluntary and all information would be kept confidential i.e. all data were anonymized and no participant would be identified. The inclusion criteria were as follows i) Participants were TU students. ii) The participants had to attend the

whole class. iii) The participants had to complete the questionnaire before and after attending class. However, incomplete questionnaires were excluded.

### 4. Class activity design

The number of students in the class ranged 70 to 143 students with two trained facilitators. To standardize, facilitators were trained and provided the same materials. Students were participated in 2.30- to 3-hour session. Following an introductory talk on the learning objectives of this one session class, an animated video was shown explaining the relationship between body and mind. Then the students completed the Suan Prung Stress Test (SPST-20) before the class.

#### 4.1 Emotion management

After watching the video, each group was being challenged with one negative emotion by using games. Each student was asked questions including: the nature of negative emotions, when they happen and how to deal with them. Then they did a self-review of negative emotions and stress from their own experiences by reflective writing. After that, group discussions were conducted to share their opinions with each other. These discussions were summarized, presented and discussed with reference to the Health Promotion Foundation's suggestion on emotional management.

#### 4.2 Relaxation techniques

The students were then instructed in relaxation techniques such as physiological relaxation, breathing exercises, and creating imaginary safe places. They were also told about how to access for mental health counseling at TU such as the student hotline and the mental health clinic.

*5. Statistical Analysis*

The data was analyzed using both descriptive and inferential statistics. Basic statistics such as frequency, mean, and standard deviation were used to describe the data. The distributions of the before and after-class stress scores were analyzed using the Wilcoxon Signed rank test. The comparison of before and after-class stress scores by sex was analyzed using Mann-Whitney U. The comparison of mean before-class stress scores among three groups of the students was analyzed using the one-way ANOVA, followed by Bonferroni's post-hoc comparisons tests. Ancova was used to test the differences of the mean after-class stress score as a function of student group with before-class stress score included as a covariate.

The percent changes in before- and after-class parameters (stress levels, student frequencies) were calculated by subtracting the after-before parameter and expressing it as a percentage of the before value.

**Results**

A total of 3,826 TU students registered for this subject and 3,484 (91.1%) submitted the stress test. By faculty, 400 were Science and Technology (ST), 321 Health Sciences (HS), and 2,738 Social Science and Humanities (SSH) students.

Questionnaires with incomplete data were excluded (n=367), leaving 3,459 (90.41%) for analysis. The sample comprised 990 male (28.6%) and 2,469 female students (71.4%) and the breakdown by faculty is shown in Table 1.

**Table 1** Respondents' demographic characteristics.

Classified groups	Year	Male (%)	Female (%)	N (%)
<b>Science and technology</b>		<b>133 ( 3.8 )</b>	<b>267 ( 7.7 )</b>	<b>400 (11.6)</b>
Faculty of Architecture and planning	1 <sup>st</sup>	70 (2.0)	148 (4.3)	218 (6.3)
Faculty of Science and technology	1 <sup>st</sup>	63 (1.8)	119 (3.4)	182 (5.3)
<b>Health sciences</b>		<b>99 (2.9)</b>	<b>222 (6.4)</b>	<b>321 (9.3)</b>
Faculty of Dentistry	1 <sup>st</sup>	17 (0.5)	28 (0.8)	45 (1.3)
Faculty of Public Health	1 <sup>st</sup>	22 (0.6)	97 (2.8)	119 (3.4)
Faculty of Medicine	2 <sup>nd</sup>	60 (1.7)	97 (2.8)	157 (4.5)
<b>Social science and humanities</b>		<b>758 (21.9)</b>	<b>1,980 (57.2)</b>	<b>2,738 (79.2)</b>
College of Interdisciplinary Studies	1 <sup>st</sup>	29 (0.8)	60 (1.7)	89 (2.6)
Faculty of Law	1 <sup>st</sup>	148 (4.3)	324 (9.4)	472 (13.6)
Faculty of Commerce and Accountancy	1 <sup>st</sup>	170 (4.9)	402 (11.6)	572 (16.5)
Faculty of Political Science	1 <sup>st</sup>	114 (3.3)	157 (4.5)	271 (7.8)
Faculty of Economics	1 <sup>st</sup>	92 (2.7)	210 (6.1)	302 (8.7)
Faculty of Social Administration	1 <sup>st</sup>	54 (1.6)	189 (5.5)	243 (7.0)
Faculty of Liberal Arts	1 <sup>st</sup>	85 (2.5)	397 (11.5)	482 (13.9)
Faculty of Journalism and Mass Communication	1 <sup>st</sup>	39 (1.1)	139 (4.0)	178 (5.1)
Faculty of Sociology and Anthropology	1 <sup>st</sup>	18 (0.5)	65 (1.9)	83 (2.4)
Faculty of Fine and Applied Arts	1 <sup>st</sup>	9 (0.3)	37 (1.1)	46 (1.3)
<b>Total</b>		<b>990 (28.6)</b>	<b>2,469 (71.4)</b>	<b>3,459 (100.0)</b>

The number of students in each stress level before- and after-class was shown in the table 2. The mean stress score before class was  $47.22 \pm 13.52$  (high stress) and after class decreased to  $35.89 \pm 12.49$  (moderate stress,  $p < 0.01$ ). The percentage change in the mean stress score after class was -23.36%.

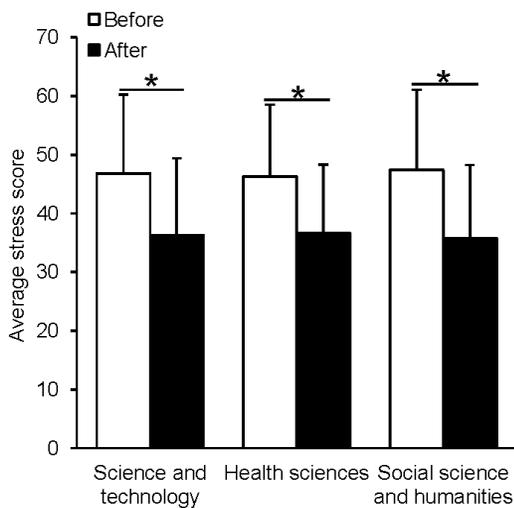
The comparison of mean stress scores by gender revealed that the before- and after-class scores were similar: (i)  $47.68 \pm 13.787$  (male) vs.  $47.03 \pm 13.411$  (female,  $p = 0.161$ ), and (ii)  $36.41 \pm 12.798$  (male) vs.  $35.68 \pm 12.363$  (female,

$p = 0.115$ ). The mean after-class stress scores of both male ( $p < 0.01$ ) and female ( $p < 0.01$ ) were significantly lower than those before-class stress scores.

The mean stress scores before and after class (Figure 1) were not significant difference among the three student groups ( $p = 0.281$  and  $0.377$ , respectively). All the after-class stress scores were significantly lower ( $p < 0.01$ ) by student group: (i) ST:  $36.33 \pm 13.06$  vs.  $46.78 \pm 13.46$ , (ii) HS:  $36.61 \pm 11.71$  vs.  $46.24 \pm 12.29$ , and (iii) SSH:  $35.74 \pm 12.50$  vs.  $47.39 \pm 13.66$ .

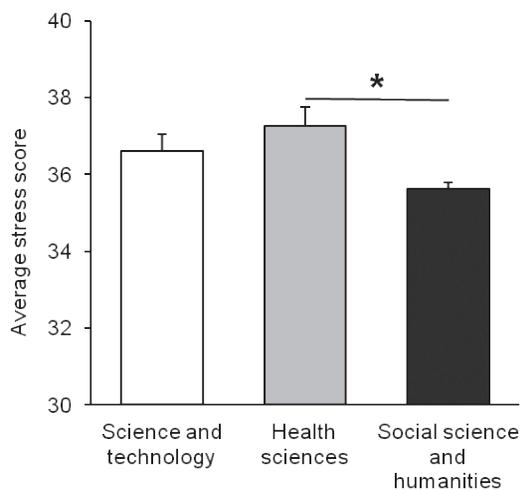
**Table 2** The number of students in each stress level before- and after-class in Science and Technology, Health sciences, and Social science and humanities

Stress level	Total		Science and Technology		Health Sciences		Social Science and Humanities	
	Before n (%)	After n (%)	Before n (%)	After n (%)	Before n (%)	After n (%)	Before n (%)	After n (%)
Mild	140 (4.05)	567 (16.39)	23 (5.75)	62 (15.5)	10 (3.12)	45 (14.02)	107 (3.91)	460 (16.80)
Moderate	1,148 (33.19)	1,932 (55.85)	131 (32.75)	229 (57.25)	120 (37.38)	177 (55.14)	897 (32.76)	1,526 (55.73)
High	1,706 (49.32)	864 (24.98)	197 (49.25)	94 (23.5)	160 (49.84)	91 (28.35)	1,349 (49.27)	679 (24.80)
Severe	465 (13.44)	96 (2.78)	49 (12.25)	15 (3.75)	31 (9.66)	8 (2.49)	385 (14.06)	73 (2.67)
<b>Total</b>	<b>3,459 (100.00)</b>	<b>3,459 (100.00)</b>	<b>400 (100.00)</b>	<b>400 (100.00)</b>	<b>321 (100.00)</b>	<b>321 (100.00)</b>	<b>2,738 (100.00)</b>	<b>2,738 (100.00)</b>



**Figure 1** The bar graph shows the mean±SD of the before and after stress scores of students by faculty. \*  $p < 0.01$

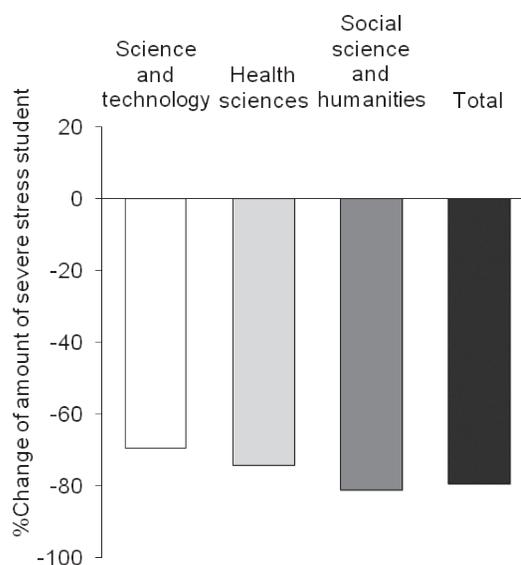
The mean differences of stress scores of ST, HS, and SSH students between before and after class were -10.45, -9.63 and -11.65, respectively. The mean after-class stress scores of ST, HS, and SSH students were 36.62 ( $\pm 0.43$ ), 37.27 ( $\pm 0.48$ ) and 35.62 ( $\pm 0.16$ ), respectively, with a significant effect of student group after controlling for before-class stress score ( $p < 0.01$ ). Only the mean after-class stress score of HS students was significantly higher vs. SSH students ( $p < 0.01$ ) (Figure 2).



**Figure 2** The comparison of after-class stress scores among students in Science and Technology, Health Science, and Social Science and Humanities ( $*p < 0.05$ ) with before-class stress score as a covariate.

Overall, almost 50% of students had high stress levels before attending the class and this fell to just under 25% post calls with the majority of students experiencing moderate levels of stress (Table 2).

The percentage changes in severe stress levels were high, ranging from -69.39 to -81.04% (Figure 3); the SSH students had the highest percentage change. However, the percentage of students with severe stress level effectively declined to approximately 3-4% after the class in all groups (Table 2).



**Figure 3** The percentage change of the amount of severe stress level students in each group of faculty and the total.

The percentage changes in stress levels were -21.33% (ST), -20.26% (HS), and -24.02% (SSH). The SSH percentage change was significantly higher than the other two groups ( $p < 0.05$ ).

## Discussion

We have found that our intervention of emotional and stress management had a significant

effect in reducing stress amongst a large group of Thai students studying a variety of subjects and was equally effective in male and female students. In our cohort, almost half the students had high stress scores and that after one session, the mean stress score declined significantly resulting in most students had moderate stress scores. We used class activity, emotional management and relaxation techniques and involved the students in such activities as group discussion and imagining a safe place. We aimed to create a relaxed and fun atmosphere so that students could feel comfortable. Other research groups have used stress relief techniques that include poetry reading<sup>5</sup>, mindfulness meditation, somatic relaxation training techniques<sup>7</sup> and implementing a stress management training program<sup>8</sup>. Group discussions allowed the students to learn from each other on how to manage their stress and reported that they relieve their stress by exercising, spending time with friends/family, sleeping and watching TV<sup>3</sup>.

Our findings are similar as the study in Thai students in that gender was not significant difference<sup>2</sup>. However, a study in Turkish university students revealed greater anxiety and higher stress scores in female students<sup>11</sup>. Several reasons could explain similar stress scores in our study between the sexes as young people transition from high school to university; these include interpersonal relations with parents or friends, religious views, and sexuality<sup>12-13</sup>.

Before class participation, the mean stress scores were comparable among the three groups of students. In contrast, the previous study showed

that students from the faculty of Law had the highest mean stress scores<sup>2</sup>. In their study, the students were divided by the faculty, not by the faculty group as our study. Therefore, the result was different. After class participation, the mean stress score was lowest in our SSH students but the absolute difference with the other two groups was small and the mean score defined all three groups as having moderate stress. Nevertheless, the SSH students mean score was significantly less than that of the HS students but this is of no clinical significance.

We found that the majority of TU students had the before-class stress score at the high level. Similarly, the study of Sathirapanya et al. also showed the same result. However, the distribution of stress level was different. In our study, the stress levels ranked from high, moderate, mild to severe, while their results ranked from high, severe, moderate to mild<sup>2</sup>.

Our results were consistent with the previous studies that showed the interventions including deep breathing; somatic relaxation and guided imaginary relaxation were helpful to relieve the students' stress<sup>9</sup>. Some studies provided their students the stress management program periodically such as once<sup>5</sup> or twice<sup>8</sup> a week. Although our students obtained class only one time, the stress levels were significantly decreased. Several previous studies reported many techniques to reduce stress but some methods needed high resources such as hotlines or they depended on the students' interest e.g. poetry<sup>5</sup>. In our study, we used less cost and a variety of methods. Moreover, interactive learning is more flexible than a

conventional lecture. Therefore, it is useful to make it as a starter program for beginners to relax from stress. There is also suitable for schools or institutions to develop as an application for practicing stress relaxation by oneself.

This research reveals that the stress level of freshman and sophomore students was significantly decreased after attending emotional and stress management class. Thus, we think such an intervention should be provided to students every year to support them during their studies. Although many stress management techniques were reported, the important factor in the stress management is the degree of enthusiasm of students to change for a healthy lifestyle. Some students are tough to cope with their stress; on the other hand, others perceive the stress as challenge to improve themselves<sup>14</sup>.

### Limitation

The limitations of this research include the use of a questionnaire that depends on self-reported measures and that there was no control group. We only conducted one class and reported on the acute effect on stress relief. More data are needed on the long-term benefits of our approach as well as studies to validate our stress relieving techniques by using a control group and to see how stress varies over time as students progress in their studies.

### Conclusions

These results support the notion that an emotional and stress management class was

effective in reducing stress in Thai university students and our results are consistent with students from other countries. This intervention could be one model of stress management class for students and other target groups.

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