

International Conference on Education and Educational Psychology (ICEEPSY)

## Stress and Academic Achievement among Undergraduate Students in Universiti Putra Malaysia

Habibah Elias<sup>\*</sup>, Wong Siew Ping, Maria Chong Abdullah

*Faculty of Educational Studies, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia.*

---

### Abstract

The objective of this study was to investigate the stress and academic achievement of undergraduate students in a local university from different disciplinary areas. Through cluster sampling, a total of 376 undergraduate students were selected to participate in this research. Academic achievement of the undergraduate students referred to their results, Grade Point Average (CPA), for the previous semester. The College Undergraduate Stress Scale (CUSS) was used to evaluate students' stress level. The stress levels of undergraduate students were compared based on their year of study in university, and their degree programs. The findings of the study showed that overall, the undergraduate students experienced moderate levels of stress. The medical students had the highest stress level among the students. Moreover, findings showed that the first-year students had low stress level. Most sources of stress were from students' academic. It was also found that there is a significant but weak negative relationship between undergraduate students' stress level and their academic achievement.

© 2011 Published by Elsevier Ltd. Selection and/or peer-review under responsibility of Dr Zafer Bekirogullari.

*Keywords:* stress; academic achievement; undergraduate students

---

### 1. Introduction

Stress can come in different ways in an individual's daily life. Stress is also viewed as the body's reaction, both neurologically and physiologically, to adapt to a new condition (Franken, 1994). When there is a change in life, we adjust ourselves to fit in the new condition. For a student, stress may be caused by failure in academic or sports, financial problems, health problems or loss of a family member or close friend. Such events that bring stress are called stressors. A sudden change in life or stressors may

---

<sup>\*</sup> Corresponding author. Tel.: 603-89468208; fax: 603-89435386.  
E-mail address: hbe@educ.upn.edu.my.

affect a person's life style or even his/her physical and mental health. The impact of a stressor leaves on a person depends on how the person takes the tension. If the person takes the event positively by accepting it as a part of challenge in life and find ways to deal with it, the stress will fade away and gone when he/she gets over it. Conversely, the consequence may leave the person a prolonged emotional disturbance.

University provides students' tertiary education and psychosocial development (Tao et. al, 2000). Besides pursuing knowledge in university, a student also gets to socialize with different kinds of people and undergo psychological development. Studies show that entering university may bring strain or stress (Gall, Evans, & Bellerose, 2000). This is because university students face a changing education system, lifestyle, and social environment. University students need to reach certain levels of academic achievement to graduate. The academic achievement is determined by their performance during classroom activities, assignments, presentations and examinations (Ong, Bessie, & Cheong, 2009). This means that they are evaluated throughout the semester. Besides, most students have moved out from home and they have to be wise in managing their time and activities. They now meet people of different ages and backgrounds, thus interpersonal skills are needed to socialize with the people around them.

Past research shows that some undergraduate students significantly experience stress (Brown et al., 1999). First-year university students were found to be particularly prone to stress (Towbes & Cohen, 1996; Pancer et al., 2000; Wintre & Yaffe, 2000) and experience high levels of stress (Wintre & Yaffe, 2000) due to the college life transition (Towbes & Cohen, 1996). Many of them face culture shock as university life is different from school life. Failing to cope with the stressors during the transition may cause deterioration of academic performance and increase of psychological distress (Dwyer & Cummings, 2001). The increase in stress during the first year predicted the decrease of overall adjustment and lower grade point average (GPA) (Wintre & Yaffe, 2000). Students tend to lose self-confidence having to establish new social relations and at the same time trying to cope with the increasing academic demands (Tao et. al., 2000; Dwyer & Cummings, 2001). A list of ten sources of stress was identified among the medical students and the stressors include tests and examinations, the big range of content to be learnt, lack of time to do revision, poor marks, having self-expectation, insufficient skill in medical practice, fail to follow the reading schedule, heavy workload, having difficulty in understanding the content and fail to provide answers to teachers' questions (Yusoff et al., 2010).

Many researches were conducted to assess the relationship between stress and academic achievement of undergraduate students and it is found that stress affects students' academic achievement (Elliot et al., 2005; Choi, Abbott, Arthur & Hill, 2007). Students complained of feeling stressed academically when it comes to facing exams and grade competition and having too much information to study yet insufficient time to master the knowledge (Carveth, Gesse & Moss, 1996). Bennett (2003) reported a similar finding that stress is significantly correlated with poor academic performance in his study of business undergraduates. Nonetheless, few studies have been done in the Malaysian context. The need to embark on this study is thus justified. For this research, stress is defined as happenings and experiences that provoke anxiety and academic achievement is measured by undergraduate students' grade point average (GPA) for the previous semester.

## 2. Objectives

The main objective of this research is to investigate the stress levels and academic achievement of undergraduate students in a local university. In specific, this research aims:

1. To determine the stress level of the undergraduate students from different degree programs;
2. To examine the difference in undergraduate students' stress level based on their year of study in

university;

3. To identify the sources of stress of the undergraduate students; and
4. To examine the relationship between stress and academic achievement of undergraduate students.

### 3. Hypotheses

For this research, there were two hypotheses.

H<sub>0</sub>1: There is no significant difference in undergraduate students' level of stress based on year of study in university.

H<sub>0</sub>2: There is no relationship between undergraduate students' stress level and academic achievement.

### 4. Materials and Methods

This is a quantitative research and it involves descriptive and inferential analysis. The sample was 376 randomly selected undergraduate students from a population of approximately 18,000 undergraduate students in Universiti Putra Malaysia (UPM), Serdang campus. Undergraduate students from every faculty were taken as the sample. Table 1 shows the distribution of respondents by degree programme.

Table 1. Distribution of Respondents by Degree Programme

Degree Programme/Faculty	n	Percentage (%)
Agriculture	26	6.9
Educational Studies	26	6.9
Food Science and Technology	26	6.9
Medicine and Health Sciences	26	6.9
Veterinary Medicine	26	6.9
Computer Science and Information Technology	25	6.6
Design and Architecture	25	6.6
Economics and Management	25	6.6
Engineering	25	6.6
Modern Language and Communication	25	6.6
Biotechnology and Biomolecular Sciences	25	6.6
Environmental Studies	24	6.4
Forestry	24	6.4
Human Ecology	24	6.4
Science	24	6.4
Total	376	100

A cross-sectional design was used to obtain data from undergraduate students of different year of study in university. From the sample, there were 30.3% first-year undergraduate students, 48.7% middle-year(s) students and 21% final-year students. Middle year(s) means the year(s) of study in university between the first year and the final year. For example, certain degree programs, such as educational studies, require at least four years of study in university, thus the second year and the third year are categorized as the middle years of study in university. The respondents were compared on their stress levels based on their degree programs as well as year of study in university.

There were two questionnaires used in data collection. To measure stress, the College Undergraduate Stress Scale (CUSS), developed by Renner and Mackin in the year 1998, was used. It consists of 39 items and the total score for the instrument was 2709. It assess students' stress levels from four aspects namely academic stress (12 items with maximum score of 931); intrapersonal stress (9 items with maximum score

of 516); interpersonal (9 items with maximum score of 516; and environmental stress (2 items with maximum score of 134). The total score of stress was obtained by adding scores of all four aspects. A total score of 903 and below was categorized as low level of stress; a total score of 904 to 1806 was categorized as moderate level of stress; and a total score of 1807 and above was categorized as high level of stress. A low score indicates that the respondent is less vulnerable to stressors and a high score, indicates higher vulnerability to stressors. A pilot study was done on a sample of 30 undergraduates and the instrument was found to be reliable to be used for this study with Cronbach Alpha of 0.728.

To measure undergraduate students' academic achievement, GPAs of students in their middle year(s) and final year of study in university in the previous semester was referred. The data collected were analyzed descriptively to determine respondents' stress level and the source(s) of stress. Correlation analysis was also done to determine the relationship between students' stress levels and academic achievement.

## 5. Results and Discussion

### 5.1. Stress Levels of Undergraduate Students by Degree Program

The first objective of this research was to determine the stress level of the undergraduate students from different degree programs. Table 2 shows the means stress scores of the respondents by degree program.

Table 2. Respondents' Mean Stress Score by Degree Programme

Degree Programme/Faculty	n	Mean	Standard Deviation
Medicine and Health Sciences	26	1051.80	342.29
Engineering	25	1025.00	306.17
Veterinary Medicine	26	1011.30	232.86
Economics and Management	25	980.56	373.95
Food Science and Technology	26	977.69	318.06
Design and Architecture	25	954.96	285.08
Biotechnology and Biomolecular Sciences	24	948.83	241.11
Computer Science and Information Technology	25	928.80	338.62
Science	24	908.42	334.44
Human Ecology	25	893.20	289.84
Modern Language and Communication	25	889.28	239.64
Agriculture	26	881.92	187.23
Environmental Studies	24	863.04	339.45
Educational Studies	26	857.62	195.58
Forestry	24	706.29	221.30
Total	376	926.39	288.38

Overall, it was found that the undergraduate students have moderate stress levels with a mean stress score of 926.39 and standard deviation of 288.38. This shows that the students have moderate vulnerability to stress. By comparing the undergraduate students' stress level according to degree programs, the findings show that students studying medicine and health sciences had the highest mean stress score of 1051.8 with standard deviation of 342.29. This finding supports Dyrbye and colleagues's (2006) report. Dyrbye and colleagues stated that medical students are in higher risk of depression disorders and anxiety disorders compared to the general population. This is due to the exposure of abundant psychological distress and personality predispositions (Matsuidara et al., 2006). The risk for depressive disorders can be predicted by individuals' perceptions of stress (Rosal et al., 1997). Higher levels of depression and anxiety were associated with higher levels of vulnerability to stress (Bunevicius et al., 2008). On the other hand, the forestry students (n=24) were found to have the lowest mean stress

score of 706.29 with standard deviation of 221.32. There is no related research found that explains stress level of forestry students. One possible reason that could explain the low level of stress among Forestry students is their learning environment which is close to nature, and less stressful for them.

### 5.2. Stress Levels of Undergraduate Students by Year of Study in University

The second objective of this research was to identify the difference in undergraduate students' stress level based on their year of study in university. It was hypothesized ( $H_01$ ) that there is no significant difference in undergraduate students' level of stress based on year of study in university. Table 3 shows the mean stress scores of the respondents by year of study in university.

Table 3: Respondents' Mean Stress Score by Year of Study in University

Year(s)	n	Mean	Standard Deviation
First	114	852.47	226.17
Middle	183	929.19	317.96
Final	79	1026.70	267.60
Total	376	926.39	288.38

The final-year students ( $n=79$ ) were found to be the most stressful group among the undergraduate students with the mean stress score of 1026.7 and standard deviation of 267.6, followed by the middle year(s) undergraduate students ( $n=183$ ) with the mean stress score of 929.19 and standard deviation of 317.96. The first-year undergraduate students ( $n=114$ ) scored the least, with the mean stress score of 852.47 and standard deviation of 226.17. Both the middle(s) and final-year students faced moderate level of stress while the first-year students experienced low level of stress.

The finding of first-year undergraduate students having low stress level contradicts with the past research (Towbes & Cohen, 1996; Pancer et al., 2000; Wintre & Yaffe, 2000) which found first-year students to be at high risk of stress. This may happen because the first-year students are able to adapt to the new environment fast during university life transition described by Towbes and Cohen (1996).

Moreover, the middle year(s) students were found to experience higher level of stress compared to the first-year students. This may be due to the increase of difficulty level of the course or 'sophomore slump' (Pattengale & Schriener, 2000) where students consider of changing their academic major (Ong, Bessie, & Cheong, 2009). The final-year students were also in moderate levels of stress but among the undergraduate students, they scored the highest. This may be due to the higher level of university education which causes more academic stress (Fan & Wang, 2001) or their consideration about their job opportunities as they graduate (Wang, 2005). Seeking for internships or job are the identified stressors among the students (Fan & Wang, 2001; Li & Lin, 2003).

From these findings, it can be concluded that year of study has significant effect on stress among the undergraduate students. This is consistent with the past research by Yussof and colleagues (2009). This also means that the first hypothesis,  $H_01$ , which stated that there is no significant difference in undergraduate students' level of stress based on year of study in university, is rejected.

### 5.3. Sources of Stress of Undergraduate Students

The third objective of the research is to identify the sources of stress of the undergraduate students. Table 4 shows the high-ranked stressors of the respondents.

Table 4: Respondents' High-ranked Sources of Stress

Sources of Stress	Percentage (%)
Starting of a new semester	100
Registration	100
Making new friends and get along with friends	83.2
Lack of sleep	75
Having two exams in a day	71.8
Concerns about own appearance	69.7
Undergoing the final week of a semester	68.1
Talking in front of a class	62.5
Having the sense of overload in school or work	58.2
Falling asleep in class	56.9
Changing in housing situation	56.1
Attending a class that one hates	54.8

There were twelve top sources of stress identified on most undergraduate students and most of the stressors were academic stress. This is consistent with the past research which found that academic stressors were on top of the college students' stressors list (Ong, Bessie & Cheong, 2009). The eight academic stressors found in this research included starting of a new semester, registration, having two exams in a day, undergoing the final week of a semester, talking in front of a class, having the sense of overload in school or work, falling asleep in class and attending a class that one hates. Starting of a new semester and registration can be stressful as students have to decide subjects to be taken from the big range of subjects offered (Longson, 2003) and schedule their time for classes and leisure (Nist-Olejnuk, & HolsChuh, 2007). The final week of a semester is a stressful week as most assignments due in the week need to be submitted in time (Ong, Bessie & Cheong, 2009).

Besides, past research has also found sitting for examinations as a source of stress for students (Fan & Wang, 2001; Li & Lin, 2003), thus the stress level may double up when there are two papers to sit for within a day. Talking in front of a class is another stressor for students due to language (English) problem (Ong, Bessie & Cheong, 2009). The finding of having the sense of overload is consistent with American college students (Ross et al., 1999). The students hate a subject because they do not understand the subject and get poor result for the subject (Ong, Bessie & Cheong, 2009). Moreover, students fall asleep in class because they did not have enough sleep (Ong, Bessie & Cheong, 2009), which is also an intrapersonal stressor for students. Another source of stress in intrapersonal aspect is the concern about own appearance. In interpersonal aspect, making new friends and getting along with friends is the main stressor. This might be due to the lack of social skills and the perception on themselves of inadequate education. Lastly, the changing in housing situation is a source of stress in environmental aspect for students. Students may have to leave home and move into the hostel. The adaptation to a new environment brings stress (Wintre & Yaffe, 2000).

#### 5.4. Relationship between Undergraduate Students' Stress Level and Academic Achievement

The fourth objective of this research was to identify the relationship between stress and academic achievement of the undergraduate students. It was hypothesized that there is no relationship between undergraduate students' stress level and academic achievement. Table 5 shows the relationship between stress and academic achievement of the respondents.

Table 5. Correlation between Stress and Academic Achievement

		Academic Achievement
Stress	Pearson correlation	-0.195
	Sig. (2-tailed)	0.000
	n	376

Referring to Table 5, stress is shown to be significantly correlated to academic achievement ( $p=0$ ). The relationship between stress and academic achievement is negative and weak ( $r=-0.195$ ). This finding is in line with the past researches (Choi, Abbott, Arthur & Hill, 2007; Rafidah, Azizah & Noraini, 2007). This also indicates that the second hypothesis for this study,  $H_{02}$ , which stated that there is no relationship between undergraduate students' stress level and academic achievement, is rejected.

## 6. Conclusions

Stress has always been an issue among undergraduate students and past research finds stress to be significantly correlated to academic achievement. This research is carried out to discover the stress levels of the undergraduate students in a local university. Besides ensuring that the students developed in both cognitive and psychological aspects, this study also helps in considering the need of designing stress interventions for the students. From this present research, undergraduate students were found to be having moderate vulnerability to stress and academic stressors topped the sources of stress. Medical students and final-year students were more likely to experience higher levels of stress compared to the other students. There was a significant, but weak and negative relationship identified between stress and academic achievement. Although the recent finding shows that undergraduate students were in moderate levels of stress, related research is encouraged to be conducted in Malaysia from time to time. This is important for the discovery of the latest state of psychological well-being and new sources of stress among undergraduate students. Students can be guided to reduce their stress levels as this can enhance their academic achievement.

## References

- Bennett, R. (2003). Determinants of undergraduate student drop out rates in a university business studies department. *Journal of Further and Higher Education*, 27(2), 123-141.
- Brown, M., & Ralph, S. (1999). Using the DYSA programme to reduce stress and anxiety in first-year university students. *Pastoral Care*, 17(3), 8-13.
- Bunevicius, A., Katkute, A., & Bunevivičius, R. (2008). Symptoms of anxiety and depression in medical students and in humanities students: relationship with big-five personality dimensions and vulnerability to stress [Electronic version]. *Journal of Social Psychiatry*, 54(6), 494-501.
- Carveth, J.A., Gesse, T., & Moss, N. (1996). Survival strategies for nurse-midwifery students. *Journal of Nurse-Midwifery*, 41(1), 50-54.
- Choi, Y. B., Abbott, T. A., Arthur, M. A., & Hill, D. (2007). Towards a future wireless classroom paradigm. *International Journal of Innovation and Learning*, 4(1), 14-25.
- Dwyer, A. L., & Cummings, A. L. (2001). Stress, self-efficacy, social support, and coping strategies in university students. *Canadian Journal of Counselling*, 35(3), 208-220.



- Dyrbye, L. N., Thomas, M. R., & Shanafelt, T. D. (2006) Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. *Academic of Medicine.*, 81, 354-373.
- Elliot, A. J., Shell, M. M., Henry, K. B., & Maeir, M. A. (2005). Achievement goals, performance contingencies, and performance attainment: An experimental test. *Journal of Educational Psychology*, 97(4), 630-640.
- Fan, F. M., & Wang, J. Z. (2001). The study of quality of psychological well-being among Beijing students. *Research on Education Tsinghua University*, 14(4), 26-32.
- Franken, R. E. (1994). *Human Motivation* (3<sup>rd</sup> ed.). Belmont, CA: Brooks/Cole Publishing Company.
- Gall, T. L., Evans, D. R., & Bellerose, S. (2000). Transition to first-year university: Patterns of change in adjustment across life domains and time. *Journal of Social and Clinical Psychology*, 19(4), 544-567.
- Li, H., & Lin, C. D. (2003). College stress and psychological well-being of Chinese college students. *Acta Psychological Sinica*, 35(2), 222-230.
- Longson, S. (2003). *Everything you need to know about going to university* (3<sup>rd</sup> ed.). London: Kogan Page Limited.
- Matsudaira, T., & Kitamura, T. (2006) Personality traits as risk factors of depression and anxiety among Japanese students. *Journal of Clinical Psychology*, 62, 97-109.
- Nist-Olejnisk, S. & Holschuh, J. P. (2007). *College rules: how to study, survive and succeed in college*. California: Ten Speed Press.
- Ong, Bessie, & Cheong, K. C. (2009). Sources of stress among college students - the case of a credit transfer programme [Electronic version]. *College Student Journal*, 43(4).
- Pancer, S. M., Hunsberger, B., Pratt, M. W., & Alisat, S. (2000). Cognitive complexity of expectations and adjustment to university in the first year. *Journal of Adolescent Research*, 75(1), 38-57.
- Pattengale, J., & Schriener, L. A. (2000). What is the sophomore slump and why should we care? *Visible Solutions for Invisible Students: Helping Sophomore Succeed* (Monograph no.31 pp. v-viii). Columbia, SC: University of South Carolina National Resource Center for the First-Year Experience and Students in Transition.
- Rafidah, K., Azizah, A., Norzaidi, M. D., Chong, S. C., & Salwani, M. I. (2009). Stress and academic performance: empirical evidence from university students [Electronic version]. *Academy of Educational Leadership Journal*.
- Ross, S. E., Niebling, B. C., & Hecker, T. M. (1999). Sources of stress among college students. *College Student Journal*, 33(2), 312-317.
- Rosal, M. C., Ockene, I. S., Ockene, J. K., Barrett, S. V., Ma, Y., & Hebert, J. R. (1997). A longitudinal study of students' depression at one medical school. *Academic Medicine*, 72, 542-546.

Tao, S., Dong, Q., Pratt, M. W., Hunsberger, B., & Pancer, S. M. (2000). Social support: Relations to coping and adjustment during the transition to university in the Peoples Republic of China. *Journal of Adolescent Research*, 5(1), 123-144.

Towbes, L. C., & Cohen, L. H. (1996). Chronic stress in the lives of college students: Scale development and prospective prediction of distress. *Journal of Youth and Adolescence*, 25, 199-217.

Wang, C. Y. (2005). Investigation on the stress state of undergraduate. *Chinese Journal of Health Psychology*, 13(4), 312-313.

Wintre, M. G., & Yaffe, M. (2000). First-year students' adjustment to university life as a function of relationships with parents. *Journal of Adolescent Research*, 5(1), 9-37.

Yusoff, M. S. B, Rahim, A. F. A., & Yaacob, M. J. (2010). Prevalence and sources of stress among Universiti Sains Malaysia medical students. *Malaysia Journal of Mredical Science*, 17(1).