

## DIFFERENCES IN DEPRESSION, ANXIETY AND STRESS BETWEEN LOW-AND HIGH-ACHIEVING STUDENTS

MD ARIS SAFREE MD YASIN<sup>1</sup> AND MARIAM ADAWIAH DZULKIFLI\*<sup>2</sup>

<sup>1</sup>Universiti Malaysia Terengganu, 21030 Kuala Terengganu, Terengganu, Malaysia.

<sup>2</sup>International Islamic University Malaysia, 53100 Gombak, Kuala Lumpur, Malaysia.

\*Corresponding author: aris@umt.edu.my

**Abstract:** This study was conducted to examine the differences in depression, anxiety, and stress between low-and high-achieving students. 120 undergraduate students of the International Islamic University Malaysia (IIUM) were involved in this study. The Depression Anxiety Stress Scale (DASS) was used to measure the depression, anxiety, and stress among students. Independent Sample T-test was used to differentiate the depression, anxiety, and stress between low-and high-achieving students. The findings of this study revealed that there were significant differences in depression, anxiety, and stress between low-and high-achieving students. The findings of the study will be useful in assisting educators, counsellors, psychologists, and researchers to develop strategies to enhance students' psychological well-being.

**KEYWORDS:** Depression, Anxiety, Stress, and Low-and High-Achieving Students

### Introduction

Performance in academic life demands all aspects of well-being, those that include physical, social, emotional, spiritual, and psychological well-being (Crystal, Chen, Fuligni, Stevenson, Hsu, Ko, Kitamura, & Kimura, 1994). Students who are physically and psychologically stable are expected to perform better compared to those who are not physically, mentally and psychologically fit. In other words, those who are experiencing psychological problems, such as depression, anxiety and stress, may face problems in managing their academic performance. Psychological stability is indeed an important predictor that could contribute to high academic achievement. Hence, it is very much crucial to review and examine the psychological well-being of the students. The findings of such research may be used to develop strategies and approaches to help students to excel in their academic life.

Depression, stress, and anxiety are among the psychological problems that are common among students. According to Porter (1990), up to 60% of university students left university without finishing their degrees; the majority of

these students leave within the first two years due to inability to manage these psychological conditions, especially to cope with stress. Steinberg and Darling (1994) mentioned that 50% of university students who consulted mental health service complained of difficulties in study, anxiety, tension, and depression. They reported that these conditions contributed to poor grades in courses.

Depression, anxiety, and stress were found to be interrelated to each other. The overlapping symptoms of these three psychological problems can lead to all sorts of academic problems that can give impact to academic achievement among students. For example, it has been found that students' performance in school, college, and university is influenced by the symptoms of depression (Fine & Carlson, 1994; Stark & Brookman 1994), stress (Dusselier, Dunn, Wang, Shelly, & Whalen, 2005), and anxiety (Anson, Bernstein, & Hobfoll, 1984) which could lead to difficulties in concentration, lack of motivation and interest, poor attendance, and physical health such as headache and fatigability. These conditions will influence students' academic achievement.

The above findings indicate that many students suffered from psychological problems, which in turn affected their academic performance. Many studies were conducted to address this issue and it was found that psychological problems, i.e., depression, anxiety, and stress do have influence on the academic achievement of the students. Williamson, Birmaher, Ryan, and Dahl (2005), for example, reported that stressful life events are significantly elevated in anxious and depressed youths, thus could lead to low performance in academic achievement. A study by Md Aris Safree Md Yasin and Mariam Adawiah Dzulkifli (2010) also indicated the same results. They found that depression, anxiety, and stress negatively correlate with academic achievement. The higher the depression, anxiety, and stress, the lower the academic achievement among students.

Based on the previous research, there are two reasons for conducting the current research. First, not many studies are conducted to study psychological characteristics among low-and high-achieving students in Malaysia. The lack of research on mental health and academic achievement may lead to difficulty to understand the psychological conditions in relation to academic achievement and education among students in Malaysia. Second, this study also hopes to contribute to the research on how to help and manage students who have low academic achievement. By having better understanding and knowledge about psychological condition of the students on depression, anxiety, and stress, it could help us to design and organise proper development programmes to help them. In short, it is important to obtain information about students' psychological conditions and psychological growth in the university because it is very much related to their academic achievement.

### ***Depression among Students***

A depressed mood is the experience of unhappiness or distress. Depression may involve feelings of being sad, weak, disappointed, frustrated, despairing, helpless, and hopeless (Sarason & Sarason 2002). Many depressed individuals may be unable to perform well in academic life

because they do not have courage in what they are doing. They may feel that they are not reaching the standard of performance set for them. As a result they continuously feel disappointed and despairing. They perceive things negatively and consider themselves as failures. This condition can definitely contribute to many serious problems in their academic life such as poor grades.

Literatures have shown that performance in school, college, or university was found to be affected by many symptoms of depression, such as difficulties in concentration, lack of interest and motivation, preoccupations, fatigability, and poor attendance (Fine & Carlson, 1992). Surtees, Wainright, and Pharoah (2002), in their survey, found these conditions reduced the likelihood of achieving a first-class degree among first-year students, although this relationship disappeared when adjustment was made for other factors such as homesickness.

Many clinical descriptive reports suggested that depression may be a contributing factor to poor academic performance (Fine & Carlson, 1994). Because of this, several approaches have been conducted to investigate the relationship between depression and academic achievement. For example, Stark and Brookman (1994) obtained teachers' and parents' global ratings of students' academic performance and ratings of severity of students' depressive symptoms. The former was an instrument used to measure student's academic performance and study habit, while ratings of severity of students' depressive symptoms were used to measure the depression level of the students. The result of the studies showed that there was an inverse relationship between academic achievement and depression.

This notion was then supported by Zaid, Chan, and Ho (2007). The study on emotional disorders among medical students in one of the Malaysian private colleges found that students who experienced depression had a lower academic performance. Another study by Sherina, Lekhraj, and Nadarajan (2003) yielded that 41.9% students in one of the Malaysian public institutions were found to have depression. Some reported that their academic performance was affected by

depression. This shows that depression affects the performance of the students i.e. the higher the depression, the lower is the academic achievement of the students.

Based on the above findings, it can be said that depression does affect academic achievement of the students. This means the higher the depression level of the students, the lower is their academic performance.

### ***Anxiety among Students***

Anxiety is a psychological disorder that is associated with significant suffering and impairment in functioning. It is a blend of thoughts and feelings characterised by a sense of uncontrollability and unpredictability over potentially adverse life events (Wilson, Nathan, O'leary, & Clark, 1996).

The relationship between anxiety and academic performance has been studied in a variety of laboratory and natural settings. Individuals experiencing anxiety show apprehensions that often interfere with performance in everyday life as well as in academic situations. Anxiety in general is expected to have a negative effect on performance. One consistent finding shows that individuals who have a high level of anxiety perform less well than those who have low anxiety on evaluative or ego-threatening tasks (Vogel & Collins, 2000). In a study conducted by Anson et al. (1984) on the relationship between anxiety and academic performance, it was found that anxiety was significantly and negatively correlated with grades obtained by the students.

The way students perceive and experience their academic-related matters is also one of the factors that could affect the performance of the students. For instance, according to Vogel and Collins (2000), if an individual's experience of previous achievement is negative, then the anxiety level is higher and this leads to lower performance. Consequently, if the experience is positive, then the anxiety level is lower and this leads to a higher performance. Overall, it is important to consider motives, aptitudes, cognitive assessments of the task, and past experience when analysing anxiety and examining how it relates to performance.

Andrews and Wilding (2004) found that 40% of a cohort of University College, London students had attended the student health clinic for psychological problems, characterised by anxiety, tension and poor concentration. Compared with the norm, the cohort as a whole also had elevated neuroticism scores. Their distress levels were found to be associated with low academic performance.

Another study on anxiety was conducted by Seligmen and Wuyek (2007). They found that highly-anxious students were significantly more likely to score lower on measures of academic achievement and peer acceptance. Longitudinal analyses revealed that highly-anxious students, compared to their less-anxious peers, scored significantly lower on measures of academic achievement, aggression, and peer acceptance.

All the above studies showed that anxiety can directly influence students' academic achievement. It was reported that anxiety could effect students' academic achievement in the sense that students with high anxiety level perform poorer compared to those with low anxiety.

### ***Stress among Students***

Stress is a mechanism of any internal or external demand made upon the body (Dusselier *et al.*, 2005). Stress is considered as a state of individuals that result from their interaction with the environment that is perceived as too demanding and a threat to their well-being. The stressors are not only physical, but may also involve emotions.

Stress was found to be a part of students' life and could give impact on how students cope with the demands of academic life. Students reported experiencing academic stress at predictable times each semester with the greatest sources of academic stress resulting from taking and studying for exams, grade competition, and the large amount of content to master in a small amount of time (Rawson, Bloomer, & Kendall, 1999).

One model that is useful to study in understanding stress among students is the person environment model (Misra & McKean, 2000).

According to this model, individuals can appraise stressful events as challenging or threatening. When students perceived their education as a challenge, stress can bring them a sense of competence and an increase capacity to learn. However, when education is perceived as a threat, stress can elicit feelings of hopelessness and a foreboding sense of loss, thus leading to lower academic achievement.

Research shows that there exists a relationship between stressful life events and poor academic performance among college students and there is a connection between health-related quality of life and stress (Dusselier *et al.*, 2005; Misra & McKean, 2000). Because stress adversely affects psychological and physical health, undergraduate students reported that stress was the most common health factor impacting their academic performance (Dwyer & Cummings, 2001). Demakis and McAdams (1994) found that undergraduate students who reported heightened levels of stress had significantly more physical health problems and less satisfaction towards academic achievement compared to those reporting lower levels of stress.

The perception of the stress by the students could play significant roles on its seriousness. When stress is perceived negatively or becomes excessive, students experience physical and psychological impairment (Murphy & Archer, 1996). Excessive stress among students was found to reduce effectiveness of their study which contributes to bad habits, and results in negative long-term consequences, including absenteeism, poor academic performance, and school dropout. Wintre and Yaffe (2000) found that increases in stress during the first year predicted decreased overall adjustment and made the students more vulnerable to many social and psychological problems, thus contributed lower grade point average (GPA) in the final year.

Social situation is another important factor in causing psychological problems. A more recent study showed that that social situation of the students could activate stress (Dusselier *et al.*, 2005). It was found that timid individuals feel and sense stress more compared to their outgoing

friends. There is a possibility that the students will not become active in their academic life. The same study showed that stress together with sleep loss and substance abuse will lead to college depression.

The findings highlighted in the previous research found that stress influences academic achievement. The presence of stress could affect students' performance in their academic life. Thus, the higher the stress level, the lower the academic achievement.

### **Research Hypotheses**

The current research is conducted with the following hypotheses:

- H1: Low-achieving students will have high depression as compared to high-achieving students.
- H2: Low-achieving students will have high anxiety as compared to high-achieving students.
- H3: Low-achieving students will have high stress as compared to high-achieving students.

### **Method**

#### **a. Participants**

The sample of this study consisted of 120 undergraduate students of the International Islamic University Malaysia (IIUM). They were selected using purposive sampling technique. This sampling technique targets a particular group of people. For the purpose of the study, the participants were divided into two groups, low-and high-achieving groups. Low-achieving group refers to students who obtained CGPA of 2.0 and below, and high-achieving group refers to students who obtained CGPA of 3.5 and above. The age range of the participants was 20 – 25 (mean= 22.5 (SD=1.32).

Of these 120 participants, 60 (50%) were male and 60 (50%) were female. As for CGPA, 60 (50 %) of the participants were with CGPA of 3.50 and above and 60 (50 %) were with

CGPA of 2.00 and below. The participants were selected from various Kulliyahs. 30 (25.5%) participants were from Kulliyah of Engineering (ENGIN), 25 (20.8%) from Kulliyah of Economic and Management Sciences (KENMS), 23 (19.2%) were from Ahmad Ibrahim Kulliyah of Law (AIKOL), 21 (17.5%) were from Kulliyah of Islamic Revealed Knowledge and Human Sciences (KIRKHS), 12 (10.0%) were from Kulliyah of Information and Technology (KICT), and 9 (7.5%) were from Kulliyah of Architecture and Environmental Development (KAED). In terms of the year of study, 24 (20.1%) of the participants were first-year students, 40 (33.3%) were second-year students, 34 (28.3%) were third-year students and 22 (18.3%) were fourth-year students. Table 1 summarises the demographic characteristics of the participants.

The following discussion provides detailed explanation on the demographic characteristics

Table 1. Demographic Characteristics of Participants (N = 120).

Variables	Frequency	Percentage (%)
<b>Respondent Characteristics</b>		
<b>1. Gender</b>		
Male	60	50
Female	60	50
<b>2. CGPA</b>		
2.00 and below	60	50
3.50 and above	60	50
<b>3. Age</b>		
20 years old	9	7.5
21 years old	15	12.5
22 years old	38	31.7
23 years old	33	27.4
24 years old	14	11.7
25 years old	11	9.2
<b>4. Kulliyah</b>		
ENGIN	30	25.5
KENMS	25	20.8
AIKOL	23	19.2
KIRKHS	21	17.5
KICT	12	10.0
KAED	9	7.5
<b>5. Year of Study</b>		
First year	24	20.1
Second year	40	33.3
Third year	34	28.3
Fourth year	22	18.3

of the participants in each group. Pertaining to age, for low-achieving group, 7 (11.7%) participants were 20 years old, 6 (10.0%) were 21 years old, 20 (33.3%) were 22 years old, 13 (21.7%) were 23 years old, 8 (13.3%) were 24 years old, and 6 (10.0%) were 25 years old. The mean age of the participants was 22.45 (SD=1.43). For high-achieving group, 2 (3.3%) participants were 20 years old, 9 (15.0%) were 21 years old, 18 (30.0%) were 22 years old, 20 (33.3%) were 23 years old, 6 (10.0%) were 24 years old, and 5 (8.3%) were 25 years old. The mean age of the participants was 22.57 (SD=1.21).

As for Kulliyah, in low-achieving group, 19 (31.7%) participants were from ENGIN, 13 (21.7%) from KENMS, 12 (20.0%) were from AIKOL, 6 (10.0%) were from KIRKHS and KICT, respectively, and 4 (6.7%) were from KAED. In high-achieving group, 11 (18.3%) participants were from ENGIN, 12 (20.0%) from KENMS, 11 (18.3%) were from AIKOL, 15 (25.0%) were from KIRKHS, 6 (10.0%) were from KICT, and 5 (8.3%) were from KAED.

In terms of the year of study, for low-achieving students, 16 (26.7%) of the participants were first-year students, 20 (33.3%) were second-year students, 15 (25.0%) were third-year students and 9 (15.0%) were fourth-year students. In high-achieving group, 8 (13.3%) of the participants were first-year students, 20 (33.3%) were second-year students, 19 (31.7%) were third-year students and 13 (21.7%) were fourth-year students. Table 2 summarises the high-and low-achieving students' demographic background.

#### b. Measures

The Depression Anxiety Stress Scale (DASS) was used to measure depression, anxiety, and stress. The DASS is designed to assess aspects of depression, anxiety and stress using a multidimensional approach in adolescents and adults (Lovibond & Lovibond, 1995). It is a 42-item self-report measure. Items fall into three scales: Depression (D), Anxiety

Table 2. Distribution of participants background characteristics in low-and high-achieving group.

Characteristics of Participants	Low-achieving Students		High-achieving Students	
	Frequency	Percentage (%)	Frequency	Percentage (%)
<b>1. Gender</b>				
Male	30	50	30	50
Female	30	50	30	50
<b>2. Age</b>				
20 years old	7	11.7	2	3.3
21 years old	6	10.0	9	15.0
22 years old	20	33.3	18	30.0
23 years old	13	21.7	20	33.3
24 years old	8	13.3	6	10.0
25 years old	6	10.0	5	8.3
<b>3. Kulliyah</b>				
ENGIN	19	31.7	11	18.3
KENMS	13	21.7	12	20.0
AIKOL	12	20.0	11	18.3
KIRKHS	6	10.0	15	25.0
KICT	6	10.0	6	10.0
KAED	4	6.7	5	8.3
<b>4. Year of Study</b>				
First year	16	26.7	8	13.3
Second year	20	33.3	20	33.3
Third year	15	25.0	19	31.7
Fourth year	9	15.0	13	21.7

(A), and Stress (S) with 14 items per scale. Each item is scored from 0 (“did not apply to me at all”) to 3 (“applied to me very much, or most of the time”) in terms of how much the item applied within the past week. In this study, coefficient alpha values were .92 for depression and anxiety, and .93 for stress.

#### c. Procedures

The participants were provided with a consent form informing them about the study. They were asked to complete a package of self-report questionnaires, assessing their level of depression, anxiety, and stress. They were given an ample time to complete all sections of the questionnaire. After the participants completed the questionnaires, they were debriefed on the nature of the study.

#### d. Data Analyses

Descriptive statistics used in this study were frequencies, percentages, means, and standard deviations. Independent sample t-tests were used to measure differences in

psychological problems (depression, anxiety, and stress) between low-and high-achieving groups.

## Results

Two types of analyses were performed to identify the differences in psychological problems between high-and low-achieving students. First, the means and standard deviations were obtained to determine the extent to which these two groups reported experiencing psychological problems. Second, t-tests were conducted to evaluate whether the differences in psychological characteristics between low and high were significant or not.

### 1. Differences in Depression among Students

Descriptive analysis showed that the mean score for depression of low-achieving students was 1.48 (SD = 0.49) and the mean score for high-achieving students was 0.49 (SD = 0.26). Independent sample t-test yielded a significant difference in depression between the low-and high-achieving group, t

Table 3. Means, Standard Deviation, and Cronbach Alpha Coefficient of Measurements.

Measurements	Number of items	Mean	SD	Rating Scale	Cronbach Alpha Coefficient.
<b>DASS</b>					
Depression	14	0.99	0.08	0 = Did not apply to me at all 1 = Applied to me to some degree, or some of the time 2 = Applied to me to a considerable degree, or a good part of the time 3 = Applied to me very much, or most of the time	0.92
Anxiety	14	1.15	0.10	0 = Did not apply to me at all 1 = Applied to me to some degree, or some of the time 2 = Applied to me to a considerable degree, or a good part of the time 3 = Applied to me very much, or most of the time	0.92
Stress	14	1.16	0.12	0 = Did not apply to me at all 1 = Applied to me to some degree, or some of the time 2 = Applied to me to a considerable degree, or a good part of the time 3 = Applied to me very much, or most of the time	0.93

(118) = 13.91,  $p < 0.01$ . This result indicates that low-and high-achieving students differed in their level of depression.

## 2. Differences in Anxiety among Students

Descriptive analysis indicated that the mean score for anxiety of low-achieving students was 1.68 (SD = 0.47) and the mean score for high-achieving students was 0.64 (SD = 0.32). Independent sample t-test revealed a significant difference in anxiety between low-and high-achieving group,  $t(118) = 14.14$ ,  $p < 0.01$ . This result suggests that low-and high-achieving students also differed in their level of anxiety.

## 3. Differences in Stress among Students

As for stress, descriptive analysis indicated that the mean score for stress of low-achieving students was 1.66 (SD = 0.46) and the mean

score for high-achieving students was 0.60 (SD = 0.36). Independent sample t-test yielded a significant difference in depression between the low-and high-achieving group,  $t(118) = 13.33$ ,  $p < 0.01$ . This result shows that low-and high-achieving students differed in their level of stress.

To summarise, analyses on the differences in depression, anxiety, and stress between low-and high-achieving group indicate that low-achieving students and high-achieving students were significantly different in terms of these three psychological problems; low-achieving students reported higher psychological problems compared to high-achieving students. Table 4 presents the results of the differences between low-and high-achieving groups in depression, anxiety, and stress.

## Discussion

The present study was conducted to examine the differences in depression, anxiety, and stress between low-and high-achieving students. 120 undergraduate students, both males and females, were selected as participants in this study. The variables tested were gender, age, CGPA, kulliyah, and level of study for demographic characteristics, while psychological problems were tested for psychological construct. It was hypothesised that (1) low-achieving students will have high depression as compared to high-achieving students, (2) low-achieving students will have high anxiety as compared to high-achieving students, and (3) low-achieving students will have high stress as compared to high-achieving students.

Independent sample t-tests were conducted to test these hypothesis and the analyses revealed results as expected. The results yielded significant differences in the level of depression, anxiety, and stress experienced by students in the low-and high-achieving groups. Low-achieving students reported higher level of psychological problems compared to high-achieving students.

The results support the previous studies on the level of psychological problems of the students in relation to their academic achievement. According to previous literature, students who have high depression tend to perform poorly in academic performance compared to those with low depression (e.g. Fine & Carlson, 1994, Stark & Brookman, 1994). Similarly, students with high anxiety level (e.g. Vogel & Collins, 2000), and high stress level (e.g. Demakins & McAdams, 1994) also do not do well in their academic

performance. These studies support the idea that the level of psychological problems of the students does affect their academic performance.

Therefore, the findings of the present study provided evidence for the difference between low-and high-achieving students on their psychological problems. The differences between these two variables were expected as these three constructs were found significantly different in the previous studies.

The present study provides significant information pertaining to the differences of psychological problems between low and high achieving students. The finding of the study clearly indicated that there were differences in psychological problems between low-and high-achieving students. This finding further supports the importance of recognising and managing psychological problems, so as not to let the problems affect academic performance. Students and educators should be aware of the existence of psychological problems so that these problems might be brought under control.

In terms of measures used, although they were developed by western researchers, the use of these measures revealed more-or-less similar result to the research conducted in the west. The Cronbach alpha values for these scales indicated high reliability of the scale, suggesting that the measures can be adopted by the Malaysian population.

In conclusion, this study provides empirical evidence with regards to negative effects of psychological problems on students' achievement. Specifically, the findings suggested that an increase

Table 4. Differences in Depression, Anxiety, and Stress between Low-and High-achieving Students.

<i>Measures</i>	<b>Low-achieving Students</b>		<b>High-achieving Students</b>		<i>df</i>	<i>t</i>	<i>p</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>			
<b>Psychological Problems</b>							
Depression	1.48	0.49	0.49	0.26	118	13.91	0.001
Anxiety	1.68	0.47	0.64	0.32	118	14.14	0.001
Stress	1.66	0.46	0.60	0.36	118	13.33	0.001

in psychological problems may lead to a decrease in academic achievement among students. By having knowledge and understanding on this area, it could help many parties, such as educators, counsellors, and psychologists to design and develop proper intervention programmes to reduce psychological problems among students. The students themselves could benefit from the study. Information and ideas gained from this research could help them to face, manage, and handle the psychological problems. Therefore, enhancing knowledge and strategies in controlling psychological problems among students may help to increase their academic achievement.

One of the limitations of the current research is its small and restricted sample size. The study only involved IIUM local students from Gombak campus only. It did not include the students from Kuantan and Matriculation campuses. There were also no representatives from international students. Thus the sample of the study did not represent the real population of IIUM and the result cannot be generalised to the university student population. For future research, the study should have more samples and should include students from other campuses and international students as well. In addition, the study involved only low-and high-achieving students. No data was obtained from students with moderate academic performance (i.e. those with CGPA between 2.00 and 3.49) and comparison could not be made for this group. It is suggested that the moderate group of students should be included so that it will be comparable.

### Conclusion

In an attempt to understand the relationship between psychological well-being and academic performance, the level of depression, anxiety and stress of students are measured. Specifically, students are divided into low-achieving group and high-achieving groups and their depression level, anxiety level and stress level are compared. The findings of the present study indicated that there are differences in psychological problems between low-and high-achieving students in which low-achieving students reported higher level of depression, anxiety and stress compared

to students with high academic achievement. This finding of the study can help to design programmes and strategies to boost students' performance in academic life.

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