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Research Article

Relationship Between Adversity Quotient and Academic Well-being among Malaysian Undergraduates

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Abstract

Background and Objective: University undergraduates always facing challenges as part of their identity exploration. These challenges, if can not handled properly, may lead to unwanted behaviors. The purpose of this study was to determine the relationship between adversity quotient (AQ), as a protective factor to these challenges and academic well-being among undergraduates in a Malaysian public university. **Materials and Methods:** A self-report questionnaire was administered to undergraduates from the School of Pharmacy and the School of Medical Sciences ($n = 348$, 70 males and 278 females) to determine their adversity quotient and academic well-being scores. Independent sample t-test, one-way ANOVA and Pearson correlation were employed to address concerns related to this study. **Results:** The results show that there were no significant differences in the mean score of adversity quotient between male and female undergraduates. There were also no significant differences in the mean score of academic well-being between male and female undergraduates. However, 1st year undergraduates report significantly lower mean adversity quotient scores when compared to 2nd and 3rd year undergraduates. Similarly, the mean score for academic well-being for 1st year undergraduates was significantly lower when compared to 2nd and 3rd year undergraduates. Primary analysis shows that adversity quotient and academic well-being are positively correlated. **Conclusion:** Adversity quotient is a key construct in improving the adaptability of undergraduates to face challenges. The construct has a positive and strong relationship with academic well-being. Thus, all stakeholders, especially the lecturers, should foster a positive adversity quotient among undergraduates. However, this is not an easy task because this study also found that both adversity quotient and academic well-being constructs vary among the 1st, 2nd and 3rd year undergraduates.

Key words: Adversity quotient, academic well-being, CORE model, correlation study, CGPA

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Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

Academic well-being among university undergraduates has long been an important focus among researchers. This is partly due to the fact that life at university has many challenges. The literature shows that these challenges can be attributed to drastic changes from life at high school¹. Among the challenges reported for Malaysian undergraduates were academic², personal³, social and career⁴ as well as university infrastructure⁵. According to the emerging adulthood theory, changes and challenges among undergraduates for university life can also be explained as part of the identity exploration stage. In this stage, undergraduates explore different ways of living to find an identity⁶. They interact and build relationships with others and from this interaction, they identify the characteristics that they find interesting and comfortable. They identify the prospect of development and limitation in interactions with others based on the suitability with their own characteristics and qualities. Therefore, the relationship that is built might be tentative, temporary and subjected to a variety of conflicts. The literature shows that this type of conflict is common in many studies related to undergraduate challenges⁷. In addition, identity exploration also involves issues related to career prospects. It revolves around issues such as whether they attain and how the journey at the university will help them to achieve their dream job. Therefore, there are always uncertainties and anxiety for undergraduates that add to the challenges of the identity-seeking process.

In this article, the authors argued that adversity quotient (AQ) is an important characteristic to understand undergraduate adaptations to the life challenges while at university. The AQ is defined as the ability to overcome challenges and made them into opportunities for greater success⁸. Individuals with a high AQ level view challenges as temporary and they exert control over these challenges. Researchers have found that to achieve success in overcoming challenges, in turns, increases AQ⁸. In contrast, individuals with low AQ believe that challenges are entirely their own fault. In other words, these individuals view these challenges as out of their hands and blame themselves for the adversity experienced. In short, AQ is important feature that drives and maintains excellence, because undergraduates with high AQ will see academic challenges such as difficulty in obtaining materials and lecturer expectations that can be overcome. Therefore, it is not surprising that many studies have shown a positive relationship between AQ and academic outcomes such as cumulative grade point average (CGPA)^{9,10}. The present study is aimed at testing this relationship using the sample of Malaysian university undergraduates.

MATERIALS AND METHODS

Sample: The sample for this cross-sectional study consisted of 325 undergraduates from the following 2 schools: The School of Pharmacy and the School of Medical Sciences. The study was conducted from November 2016-January, 2017. Table 1 provides basic demographic information for the sample.

Instrument: To measure AQ, the authors operationalized a construct that consists of the following 4 dimensions: control, ownership, reach and endurance; otherwise known as the CORE model⁸. Control refers the ability to influence actions, while ownership relates to acts that improve the current situation. Meanwhile, the reach dimension involves beliefs related to how adversity will affect other aspects of life. Finally, endurance deals with the extent to which an individual believes that adversity will last. Definitions for each dimension, number of items and examples for items for each dimension for academic challenges are provided in Table 2.

Meanwhile, the researchers use the Flourishing Scale¹¹ to measure the overall academic well-being of undergraduates. In this study, academic well-being is employed as criterion variables, rather than the widely used CGPA, because previous studies have shown that CGPA is not a good variable to study AQ¹². Responses for both instruments are captured using a six-point Likert-type scale with the following operationalization: 1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = Somewhat Agree, 5 = Agree and 6 = Strongly Agree.

Research procedure and data analysis: Both instruments were administered to 1st, 2nd and 3rd year undergraduates during lectures to ensure adequate responses from only undergraduates. It took about 15 min for them to complete the questionnaires. The reliability coefficient (Cronbach's alpha) for CORE dimensions was 0.842, 0.743, 0.684 and 0.916, while the overall reliability coefficient for academic well-being was 0.890.

Table 1: Demographic information of the sample

Demographic	N	%
Schools		
Pharmacy	97	29.85
Medical Sciences	228	70.15
Gender		
Male	65	20.00
Female	260	80.00
Year of study		
1st	89	27.36
2nd	111	34.15
3rd	116	38.49

Table 2: Operationalization of the AQ construct

Dimension	Definition	No. of Items	Example of Items
Control (C)	Ability to influence actions	4	I should dare to try something new
Ownership (O)	Act to improve his or her current situation	4	I know why I receive less attention from the lecturers.
Reach [®]	Beliefs that the adversity will affect other aspects of life	4	I am confident to get job even without an outstanding academic achievement.
Endurance (E)	The extent to which an individual's believe the adversity will last	5	I believe that someday, I will no longer afraid to try something new.

Statistical analysis: Data analysis was conducted using IBM SPSS 20. The researchers employed an independent sample t-test to investigate the differences in AQ and academic well-being between male and female subjects and between the School of Pharmacy and the School of Medical Sciences. The one-way analysis of variance (ANOVA) was employed to identify differences between the years of study in question. The researchers also conducted a Pearson correlation and linear regression to investigate the relationship between AQ and academic well-being as our primary analysis. All tests were conducted at $p = 0.05$ level.

RESULTS

The means and standard deviations (SD) of AQ and academic well-being between male and female undergraduates as well as between schools are shown in Table 3. With regards to gender, the independent sample t-test showed that the mean scores were not significant for both tests. This implied that there were no significant differences for the mean score of AQ and academic well-being. Meanwhile, undergraduates from the School of Medical Sciences demonstrated statistically higher AQ and academic well-being scores when compared to the School of Pharmacy. It is also reported that statistical differences in the mean scores for AQ and academic well-being variables between years of study (Table 4). For AQ, *post hoc* comparisons using the Bonferroni test, revealed that 1st undergraduates had significantly lower AQ score than 2nd and 3rd year counterparts. There were no significant differences between 2nd and 3rd undergraduates. Similar results were also reported for academic well-being. Finally, it is reported that, overall, there was a high and positive correlation between AQ and academic well-being and AQ explains a large proportion of variance for academic well-being. There were also strong correlations between AQ and academic well-being according to gender, school and year of study (Table 5).

DISCUSSION

The results showed that there were no significant differences in the mean score of AQ between male and female

undergraduates. The results are consistent with previous studies^{13,14}. Therefore, any program that intends to increase AQ among undergraduates does not need to consider gender as factor. Similarly, there were no significant differences in the mean score of academic well-being between genders. This finding is interesting, because the literature that has reported contrasting results for various aspects of well-being such as psychological¹⁵ or spiritual¹⁶ aspects of wellbeing. As such, this result warrants further investigation. In addition, undergraduates from the School of Pharmacy demonstrated significantly $p = 0.05$ higher AQ and academic well-being scores. That is, they were better able to face challenges compared to their counterparts from the School of Medical Sciences. Also, they were better able to adjust and feel more positive towards academic matters. This might have resulted from different course structures between the schools that require different adjustments from the undergraduates, which in turn, influence AQ and academic well-being. Also, there may also be a cultural influence, because both schools are from different campuses. The School of Pharmacy is located at the main campus in Penang, which is culturally different from Kelantan, where the School of Medical Sciences is located.

The present study also shows that there are significant $p = 0.05$ differences in AQ scores between 1st and 2nd as well as between 1st and 3rd year undergraduates. In other words, the university term seems to influence undergraduate AQ. This is consistent with previous study that identified age is an important factor for AQ¹⁴. The logic for this has to do with longer stays at university, the more challenges encountered and how these challenges are dealt⁸.

With regards to the main purpose of this study, there is a positive and strong relationship ($r = 0.802$) between the variables and AQ explained almost 65% of the variance for academic well-being. In fact, the pattern of positive and strong correlation is reported within gender, school and years of study. The AQ also explains a large percentage of variance in academic well-being within the groups. This suggests that AQ is a good predictor of academic well-being and improvements of AQ will help increase academic well-being among undergraduates. As such, it is important for relevant stakeholders at the university level to foster AQ among undergraduates. Lecturers should take note of undergraduate

Table 3: Results from independent sample t-test for AQ and academic well-being between male and female undergraduates

	Mean±SD	t	p
AQ			
Male	62.43±13.62	-1.017	0.310
Female	64.22±12.47		
Academic well-being			
Male	33.63±8.06	-1.753	0.081
Female	35.58±8.01		
AQ			
School of pharmacy	69.55±7.38	13.933	0.000
School of Medical Sciences	50.49±12.58		
Academic well-being			
School of Pharmacy	38.43±4.98	13.933	0.000
School of Medical Sciences	27.57±8.76		

Table 4: Results from independent sample t-test for AQ and Academic well-being between years of study

	Mean±SD	F	p
AQ			
1st year	50.53±12.59	142.973	0.000
2nd year	69.93±6.79		
3rd year	69.24±7.94		
Academic well-being			
1st year	27.62±8.72	100.522	0.000
2nd year	38.13±4.75		
3rd year	38.78±4.88		

Table 5: Pearson correlation coefficient and percentages of variance explained between AQ and academic well-being

	Correlation	Variance explained in academic well-being (%)
Gender		
Male	0.752**	56.5
Female	0.816**	66.6
School		
School of Pharmacy	0.501**	25.1
School of Medical Sciences	0.788**	62.0
Years of study		
1st year	0.787**	62.0
2nd year	0.517**	26.7
3rd year	0.497**	24.7
Overall	0.802**	64.4

**p<0.05

challenges, which may be different. It is beneficial if lecturers could ask undergraduates to share challenges and offer help and support. This is important so that undergraduates are aware of the nature and scope to take action to control challenges better. Meanwhile, perhaps it is a good advice to ask undergraduates to appreciate the causes for the challenges faced and learn how overcome them. This encourages the belief that adversity is neither repeated nor prolonged. Their success in overcoming adversity should function as motivation for the undergraduates to overcome the next challenge. However, individuals should be cautious, because helping undergraduates to overcome challenges is important and offering too much advice could be destructive. It is important to let the undergraduates decide the actions that are best to control and overcome adversity.

As for students, several approaches were suggested to improve AQ, especially via improvements in the CORE dimensions. Firstly, they should be able to identify their strengths, so that when confronted with challenges, they are able to use their strengths to control the challenges. Secondly, undergraduates should take 'ownership' of challenges. This ensures what and how to better counter challenges; whereas, not doing anything will only prolong them. Thirdly, an important skill that undergraduates need to master is how to deal with a particular challenge so that it does not affect other domains of daily life. The authors believe that this is a complex skill that should be learned, rather than taught. That is, undergraduates should learn through experience what the best way to deal with challenges is. Finally, undergraduates should always be positive and know that there is always light at the end of the tunnel.

This section highlights some of the limitations of the present research. Firstly, some of the results need to be interpreted cautiously, because the proportion of female to male was high at 4:1. Secondly, since AQ and academic well-being were measured using self-reported responses, element biases are inevitable. Respondents might inflate responses to provide better ratings.

CONCLUSION

This hypothesis is proven to have merit assuming the findings show there is a positive and significant relationship

between AQ and the academic well-being. In fact, this study can help researchers better understand variables, especially those involving gender and years of study.

SIGNIFICANCE STATEMENTS

Primary analysis of this study discovers that there is a positive and strong correlation between adversity quotient and academic well-being for males and females, between respective schools and among 1st, 2nd and 3rd year undergraduates. Using the CORE model, this study offers suggestions on how to improve adversity quotient among undergraduates. Thus, relevant stakeholders can plan interventions that will help foster the adversity quotient and in turns, improve the academic well-being of the undergraduates.

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