ADVERSITY QUOTIENT AND ACADEMIC STRESS OF STUDENTS FROM UNIVERSITIES OF EDUCATION

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Abstract

This study was conducted to study adversity quotient and academic stress of students from Universities of Education. This study is to find out the differences of adversity quotient and academic stress of students in terms of gender, subject stream, grade and university. The participants in this study were 917 (male = 364, female = 553) fourth year and fifth year students from Universities of Education. Adversity Respond Profile (ARP) developed by Stoltz (1997) and Academic Stress Inventory (ASI) developed by Lin and Chen (2009) were used. The reliability coefficients of Adversity Response Profile (ARP) and Academic Stress Inventory (ASI) questionnaire were .674 and .987. The data were analyzed by using descriptive statistics, independent samples *t* test, One-way ANOVA, Pearson Product-Moment Correlation and Simple Linear Regression. Adversity quotient and academic stress of students from Universities of Education were satisfactory. The *t* test results stated that there were no significant differences in adversity quotient by gender and grade. ANOVA results also showed that there were no significant differences in adversity quotient by subject stream. And then, the results of *t* test confirmed that adversity quotient of university-2 students had higher than that of university-1 students. Continually, the results revealed that male students had higher academic stress than female students. The results showed that academic stress of subject stream-3 students was the highest among three groups of subject stream. Additionally, the results showed that there was no significant difference in academic stress by grade. The results confirmed that university-1 students had higher academic stress than university-2 students. And then, the results revealed that there was a negatively significant relationship (r=-.462) between adversity quotient and academic stress. It could be interpreted that the higher adversity quotient, the lower academic stress. Finally, the results revealed that adversity quotient can predict 21% of academic stress.

Keyword: Adversity Quotient, Academic Stress, Subject Stream

Introduction

Nowadays, life is a mixture of all sorts of situations. All these situations created life miserable not only for adults, but also for students. Students in university experience stress related to academic requirements, support systems, and ineffective coping skills. Stress is one of the serious issues that affect university student's life, its effects could be reflected in student social, academical, and mental health. Academic stress among students have long been researched on, and researchers have identified stressors as too many assignments, competition with other students, failures, lack of pocket money, poor relationships with other students or lecturers, family or problems at home. Since stress negatively affects executive functioning ability, particularly working memory, increased academic stress will likely affect working memory in a similar manner (Popoli et al., 2011). In today's educational literature, the term resilience used when describing the characteristics needed by university students to reduce their academic stress and to be successful. So, university students need to build-up their resilience. According to Stoltz (1997), adversity quotient (AQ) is as a quantitative measure of a person's resilience. Stoltz also described that Adversity Quotient as intelligence to face the difficulties and the ability to survive in a variety of challenges faced and transformed this challenge into an opportunity. The higher resilience people have, the higher adversity quotient (AQ) people have. In the present situations of the university students, the increasing uncertainty and complexity of their studies and duties, adversity quotient will help them predict who can thrive in the face of

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adversity or distress. To gain adversity quotient, a person requires ability to withstand adversity, reduce stress and surmount adversity or stress. Zhou Huijuan (2009) stated that the success rate of students in the learning activities are determined by the adversity quotient has owned by each students. Many researchers aimed to increase the level of awareness and identify the factors that influenced the adversity quotient (AQ) level of the university students. The researchers viewed that as students enroll in university, it was significant to be fully aware of their AQ level, primarily because it was a very important component to decrease academic stress. Furthermore, when stressful events arise, this study will help the students to assess themselves on what kind of adversity they tend to weaken and do extra effort to turn their weaknesses into a strong foundation or basis for facing with adversities.

Main Aim of the Research

The main aim of this study is to study university students' Adversity Quotient (AQ) and Academic Stress (AS) from Universities of Education.

Scope of the Study

This study is limited to study the adversity quotient and academic stress of selected fourth year and fifth year students from Universities of Education. The adversity response profile (ARP) questionnaire with 20 items was developed by (Stoltz, 1997) used to measure the adversity quotient experienced by fourth year and fifth year students.

The academic stress questionnaire with 34 items developed by (Lin & Chen, 2009) was used to measure the academic stress experienced by fourth year and fifth year students.

Definitions of Key Terms

Adversity: Adversity is functionally defined as strain, hardship, challenge, and emotional or academical stresses (Stoltz, 1997).

Adversity Quotient (AQ): Adversity Quotient is operationally defined as the sum of the scores obtained on the four scales of control, original and ownership, reach, and endurance measured on the Adversity Respond Profile (Stoltz, 2001).

Control (C): Control scale measures the degree of the person perceives that he or she has over adverse events (Stoltz, 1997).

Origin and Ownership (O2): Origin and Ownership is the extent to which the person owns or takes responsibility for the outcomes of adversity (Stoltz, 1997).

Reach (R): Reach is the degree to which the person perceives good or bad events reaching into other areas of life (Stoltz, 1997).

Endurance (E): Endurance is the perception of time over which good or bad events and their consequences will last or endure (Stoltz, 1997).

Stress: Stress defined is as the non-specific response of the body to any demand for change (Selye, 1956).

Academic Stress: Academic stress is psychological distress with respect to some anticipated frustration associated with academic failure or even unawareness to the possibility of such failure (Centre, 2010).

Subject Stream: Subject Stream can be divided into Science, Commerce and Arts.

Review of Related Literature

Stoltz (1997) also stated that AQ takes three forms. First, AQ is a new conceptual framework for understanding and enhancing all facets of success. Second, AQ is a measure of how a person responds to adversity as subconscious patterns of behavior can now be measured, understood and changed. Finally, AQ is a scientifically grounded set of tools for modifying how a person responds to adversity and, as a result, improves overall personal and professional effectiveness.

The Adversity Quotient consists of "CO2RE" elements, and is constructed by Stoltz (1997). From these four elements can further explore how to enhance their AQ capabilities, the elements are described as follows: C stands for control (Control), showing "how much control can be made of adversity and frustration", the key point is "feel". O2 (Origin & Or) on behalf of the cause and responsibility (Ownership, Ow) the meaning is: "the causes of adversity and setbacks are my one cause". R (Reach) is the scope and limits of the individual stress effects, lower AQ scores, a range will let setbacks affect individual daily life, will increase the burden and pressure, bear the individual such as interpersonal disharmony, leads to self-emotion cannot be calm, work efficiency, lose the incentive to work in. E (Endurance) continues to influence the state of the individual in the face of adversity and frustration, including two situations: how long will it take? Or how long will it take to lead to stress and frustration.

Stress on the adversity quotient is defined as the mean is some setbacks, negative events encountered in the lives of the people in the (Stoltz, 1997; Stoltz, 2001). As suggested in the section on relationship between adversity quotient and academic stress, stress is a feeling to be suppressed, and is individuals' subjective experience toward environmental variables. Stoltz (1997) demonstrated that the Adversity Quotient is considerably related to the success of people's life and career, and people's reactions toward adversity and quantified figures can serve as reference for researchers or enterprises. When the level of the Adversity Quotient is higher, the level of academic stress should be lower. When dimension scores are higher, individuals' lives will not be influenced by frustration; they will easily treat obstacles, and will not have negative association with adversity (Shen, 2014).

Research Methodology

Sampling

Table 3.1 Number of Students from Universities of Education

No.	University	Number of Students		Total
		Male	Female	
1.	SUOE	216	256	472
2.	UDNR	148	297	445
Total		364	553	917

Methodology

In this research, descriptive survey research design and quantitative approach were used to study adversity quotient and academic stress of university students.

Instrumentation

Adversity Response Profile, (Stoltz, 1997): The Adversity Response Profile (ARP) the Original Version was developed by Dr. Paul, G. Stoltz in 1997. The Adversity Response Profile has four

dimensions, namely control, origin and ownership, reach and endurance. Each of the four dimensions has 5 items. The instrument contains totally 20 items. Higher scores indicated higher adversity quotient. This instrument was four-point Likert scale, "1=strongly disagree", "2=disagree", "3=agree" and "4=strongly agree".

Academic Stress Inventory (Lin & Chen, 2009): Academic Stress Inventory (ASI), the Revised Version was developed by Ying Ming Lin and Farn Shing Chen in 2009. The Academic Stress Inventory has seven subscales, namely teachers' stress contains 9 items, results stress contains 5 items, tests stress contains 4 items, studying in group stress contains 5 items, peer stress contains 4 items, time management stress contains 3 items and self-inflicted stress contains 4 items. The inventory contains totally 34 items. Higher scores indicated higher academic stress. The instrument was four-point Likert scale, "1=strongly disagree", "2=disagree", "3=agree" and "4=strongly agree".

Data Analysis and Findings

Descriptive Statistics for Adversity Quotient of University Students

Table 1 Descriptive Statistics for Adversity Quotient of University Students

Variable	*N*	Mini	Max	Mean	*SD*
Adversity Quotient	917	36	72	51.09	4.850

Table 1 revealed that the minimum score of the students was 36 and the maximum score was 72 for adversity quotient. Then, the observed mean score was 51.09 and it was higher than the theoretical mean score of adversity quotient (50). The standard deviation was 4.850. Therefore, it can be said that adversity quotient of the university students was satisfactory. This result is consistent with the findings of "high level" in adversity quotient (Song & Woo, 2015).

Comparisons for Adversity Quotient of University Students by Gender

Table 2 Mean Comparisons and the Results of Independent Samples *t* Test for Adversity Quotient by Gender

Variable	Gender	*N*	Mean	*t*	*df*	*p*	*MD*
Adversity Quotient	Male	364	51.31	1.112	915	.267	.364
	Female	553	50.95				

Table 2 revealed that the mean score of male students in overall adversity quotient (51.31) was higher than that of females (50.95) with mean difference (.364) points. It can be interpreted that adversity quotient of most of male students was higher than adversity quotient of female students.

The result of *t* test found that there was no significant difference in overall adversity quotient of university students by gender (t=1.112). Therefore, it can be concluded that adversity quotient of male and female students are the same. This result is consistent with the findings of no gender difference in overall adversity quotient (Abejo, 2002; Huijuan, 2009; Somaratne et al., 2017; Flejoles & Muzones, 2009; Rathee & Sharma, 2018; & Alka, 2012).

Comparisons for Adversity Quotient of University Students by Subject Stream

Table 3 Means and Standard Deviations for Adversity Quotient of University Students by Subject Stream

Variable	Subject Stream	*N*	Mean	*SD*
Adversity Quotient	Subject Stream-1	523	51.18	4.711
	Subject Stream -2	223	51.22	5.363
	Subject Stream -3	171	50.66	4.558

According to Table 3, subject stream-2 students had the highest mean score (51.22) among the groups of subject stream. Subject stream -3 students had the lowest mean score (50.66) among the groups of subject. Therefore, it may be interpreted that adversity quotient of most of subject stream -2 students was more than that of subject stream-1 and subject stream-2 students.

Table 4 The Result of ANOVA for Adversity Quotient by Subject Stream

Variable		Sum of Squares	*df*	Mean Square	*F*	*p*
Adversity Quotient	Between Groups	158.520	2	79.260	.842	.431
	Within Groups	86017.218	914	94.111		
	Total	86175.738	916			

According to Table 4, it was found that there was no significant difference among three groups of subject stream (*F*=.842). It can be assumed that adversity quotient of most of subject stream-1, subject stream-2 and subject stream-3 students may not differ. This result is inconsistent with the findings of significant difference of subject stream in adversity quotient (Sachdev, 2009 & Huijuan, 2009).

Comparisons for Adversity Quotient of University Students by Grade

Table 5 Mean Comparisons and the Results of Independent Samples *t* Test for Adversity Quotient of University Students by Grade

Variable	Grade	*N*	Mean	*t*	*df*	*p*	*MD*
Adversity Quotient	Fourth Year	469	50.87	-1.404	915	.161	-.449
	Fifth Year	448	51.32				

According to Table 5, it was found that the mean score of fifth year students (51.32) were higher than that of fourth year students (50.87) with mean difference (.449) points. It can be interpreted that adversity quotient of fifth year students was higher than adversity quotient of fourth year students. The result of *t* test revealed that there was no significant difference in adversity quotient of students by grade (*t*=-1.404). It can be interpreted that adversity quotient of most of fourth year and fifth year students are the same. This result is inconsistent with the findings of significant grade difference in adversity quotient (Huijuan, 2009 & Espanola, 2016).

Differences in Adversity Quotient of University Students by University

Table 6 Mean Comparisons and the Results of Independent Samples *t* Test for Adversity Quotient of University Students by University

Variable	University	*N*	Mean	*t*	*df*	*p*	*MD*
Adversity Quotient	University-1	472	50.64	-2.931**	915	.003	-.935
	University-2	445	51.58				

Note: ** The mean difference is significant at the .01 level.

Table 6 revealed that the mean score of university-2 students (51.58) was higher than that of university-1 students (50.64) with mean difference (.935) points. It can be interpreted that adversity quotient of university-2 students was higher than that of university-1 students. The result of *t* test revealed that there was significant difference in overall adversity quotient of students by university (t=-2.931, p<.01). So, it can be interpreted that most of university-2 students were significantly higher adversity quotient than university-1 students. This result is consistent with the finding of significant difference in overall adversity quotient by school types (Alka, 2012).

Descriptive Statistics for Academic Stress of University Students

Table 7 Descriptive Statistics for Academic Stress of University Students

Variable	*N*	Minimum	Maximum	Mean	*SD*
Academic Stress	917	48	119	83.53	10.370

According to Table 7, it was found that the minimum score of the students was 48 and the maximum score was 119 for academic stress. Then, observed mean score was 83.53 and it was less than the theoretical mean of academic stress (85). The standard deviation was 10.370. Therefore, academic stress of the university students was satisfactory. This result is consistent with the findings of "moderate level" in academic stress (Wilks, 2008; Rehman Memon et al., 2016 & Sailaja, 2017).

Comparisons for Academic Stress of University Students by Gender

Table 8 Mean Comparisons and the Results of Independent Samples *t* Test for Academic Stress of University Students by Gender

Variable	Gender	*N*	Mean	*t*	*df*	*p*	*MD*
Academic Stress	Male	364	84.79	2.938**	711.480	.003	2.098
	Female	553	82.70				

Note: ** The mean difference is significant at the .01 level.

According to Table 8, it was found that the mean score of males (84.79) was higher than that of females (82.70) with mean difference (2.098) points. It can be interpreted that academic stress of male students was higher than that of female students. The result of *t* test revealed that there was significant difference in academic stress of students by gender (t=2.938, p<.01). Therefore, it can be concluded that most of male students was significantly higher academic stress than females. This result is consistent with the findings of gender difference in academic stress (Misra & Castillo, 2004; Thawabieh & Qaisy, 2012; Li & Yen, 1998 & Ang et al., 2006).

Comparisons for Academic Stress of University Students by Subject Stream

Table 9 Means and Standard Deviations for Academic Stress of University Students by Subject Stream

Variable	Subject Stream	*N*	Mean	*SD*
Academic Stress	Subject Stream-1	523	82.01	9.869
	Subject Stream-2	223	84.56	10.696
	Subject Stream-3	171	86.82	10.563

According to Table 9, subject stream-3 students had the highest mean score (86.82) among the subject stream groups. Subject stream-1 students had the lowest mean score (82.01)

among the subject streams groups. Therefore, it may be interpreted that academic stress of most of subject stream-3 students was higher than that of subject stream-1 and subject stream-2 students.

Table 10 The Result of ANOVA for Academic Stress of University Students by Subject Stream

Variable		Sum of Squares	*df*	Mean Square	*F*	*p*
Academic Stress	Between Groups	3298.883	2	1649.442	15.835***	.000
	Within Groups	95203.601	914	104.161		
	Total	98502.484	916			

Note: *** The mean difference is significant at the .001 level.

According to the ANOVA result in Table 4.17, it was found that there was significant difference in academic stress among subject stream (F=15.835, p<.001). It can be interpreted that students' subject stream effect on their academic stress. From that point, it can be obviously identified that most of students in three groups of subject stream suffer academic stress.

Table 11 The Result of Post Hoc Test for University Students' Academic Stress by Subject Stream (Tukey HSD Test)

Variable	Subject Stream (I)	Subject Stream (J)	*MD* (I-J)	*p*
Academic Stress	Subject Stream-1	Subject Stream-2	-2.549**	.005
	Subject Stream-1	Subject Stream-3	-4.813***	.000

Note: **The mean difference is significant at the .01 level.
***The mean difference is significant at the .001 level.

Post Hoc Test revealed that there was significant difference between subject stream-1 students and subject stream-2 students (MD=-2.549, p<.01). And there was also significant difference between subject stream -1 and subject stream -3 students (MD=-4.813, p<.001). Therefore, it can be concluded that most of specialization-3 students suffer more academic stress than subject stream-1 and subject stream-2 students. Subject stream -1 students suffer less academic stress than subject stream-2 and subject stream-3 students. This result is consistent with the finding of significant difference of subject combination in academic stress (Nwe Zin Oo, 2018).

Comparisons for Academic Stress of University Students by Grade

Table 12 Mean Comparisons and the Results of Independent Samples *t* Test for Academic Stress of University Students by Grade

Variable	Grade	*N*	Mean	*t*	*df*	*p*	*MD*
Academic Stress	Fourth Year	469	83.40	-.395	915	.693	-.271
	Fifth Year	448	83.67				

According to Table 12, it was found that the mean score of fifth year students (83.67) was higher than that of fourth year students (83.40) with mean difference (.271) points. It can be interpreted that fifth year students had higher academic stress than fourth year students. It was found that there was no significant difference in academic stress by grade (t=-.395). So, it can be interpreted that academic stress of most of fourth year and fifth year students was the same. This result is inconsistent with the findings of significant difference in grade differences (Liu, 2011 & Espanola, 2016).

Differences for Academic Stress of University Students by University

Table 13 Mean Comparisons and the Results of Independent Samples *t* Test for Academic Stress of University Students by University

Variable	University	*N*	Mean	*t*	*df*	*p*	*MD*
Academic Stress	University-1	472	85.04	4.588***	915	.000	3.110
	University-2	445	81.93				

Note: ***The mean difference is significant at .001 level.

According to Table 13, it was found that the mean score of most of university-1 students (85.04) was higher than that of university-2 students (81.93) with mean difference (3.110) points. It can be interpreted that university-1 students had higher academic stress than university-2 students.

It was found that there was significant difference in academic stress of students by university (t=4.588, p<.001). So, it can be concluded that most of university-1 students had significantly higher academic stress than university-2 students. This result is consistent with the finding of significant difference in academic stress by school types (Alka, 2012).

Table 14 The Relationship between Adversity Quotient and Academic Stress

Variable	Adversity Quotient	Academic Stress
Adversity Quotient	-	-.462***
Academic Stress	-.462***	-

Note: *** The correlation is significant at the .001 level (2-tailed).

Table 14 showed that adversity quotient was significantly and negatively corrected with academic stress (r=-.462, p<.001). This means that the students who are high in adversity quotient may be low in academic stress. Therefore, it can be said that overall adversity quotient and overall academic stress have negative relationship. It can be interpreted that the higher adversity quotient of the students, the lower their academic stress. This result is in line with theoretical assertions. This result is consistent with the findings of negative correlation between adversity quotient and academic stress (Putri et al., & Elline et al., 2016; Zulharman & Firdaus, 2016; Somaratne, Jayawardena & Perera, 2017).

Table 15 The Result of Simple Liner Regression for Adversity Quotient and Academic Stress

Variable	Unstandardized coefficients		Standardized Coefficients	*t*	*p*
	B	Std. Error	Beta		
(Constant)	134.036	3.217		41.665***	.000
Adversity Quotient	-.989	0.063	-0.462	-15.770***	.000

Note; ***The mean difference is significant at the .001 level.

According to Table 16, the results were statistically significant F (1,917) = 248.71, p<.001. The adjusted R squared value was .213. This indicates that adversity quotient can predict 21% of academic stress. Then, the identified equation to understand the relationship was shown in the following.

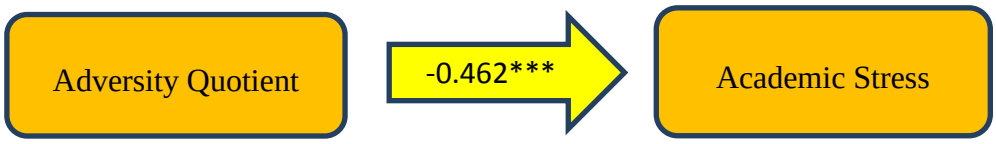

Figure 1 Model between Adversity Quotient and Academic Stress Conclusion

Conclusions and Discussions

According to the result of descriptive analysis for overall adversity quotient, adversity quotient of most of the university students in SUOE and UDNR may be satisfactory. This may be due to all the university students survive daily class activities in university and social activities in hostel. Continually, they may have the ability to respond adversities and so they may pass forgoing ahead.

According to the *t* test result for adversity quotient by gender, there was no significant difference between male and female students in overall adversity quotient (t=1.112, p>.267). This may be because both male and female students encounter similar set of adversities in learning, social and other areas. Their perception of adversities and responses to adversities may be the same (Stoltz, 1997).

According to the ANOVA result for adversity quotient by subject stream, there was no significant difference among three groups of subject stream. This may be because learning difficulties encountered subject stream-1, subject stream-2 and subject stream-3 students may be similar. Besides, they have the same learning environment and learning facilities. The same leaning environment gives the same intrinsic motivation. Research of Stoltz found people who have high adversity quotient is regarded as most people who have the motivation. Therefore, it can be interpreted that their adversity quotient may not differ.

According to the *t* test result for adversity quotient by grade, there was no significant difference between fourth year and fifth year students. This may be because fourth year and fifth year students are only one year gap in age and they may have the same self-reliance and difficulties in social and other aspects of life. Therefore, it can be assumed that their adversity quotient may be similar.

The results of independent samples *t* test for comparing overall adversity quotient by university revealed that adversity quotient of most of university-2 students was significantly more than university-1 students (t=-2.931, p<.01). This may be because university-2 has more strict rules and disciplines than university-1. These strict rules and disciplines can cause university-2 students learning, take risks and embrace the change. Therefore, university-2 students may response better performance when they are facing adversities in their lives than university-1 students. Therefore, adversity quotient of most of university-2 students may be better than university-1students.

According to the result of descriptive analysis for academic stress, it can be said that academic stress of most of the university students in SUOE and UDNR may have satisfactory. This may be because university students do class activities, group activities, assignments and projects regularly and so they can cope and manage effectively stress from these activities. Auerbach and Grambling (1998) argued that stress can lead to serious problems if it is not managed effectively.

According to the *t* test result for academic stress by gender, there was significant difference between males and females in academic stress (t=2.938, p<.01). This may be due to male students may be lower study habit than female students. Low study skills lead to low academic achievement which causes stress for exam and academic stress (Koki & Abdullahi, 2014). Therefore, male students may be higher academic difficulties than female students. Female students have more interactions with teachers than male students. Study habit, academic difficulties and student-teacher interaction affected on academic stress (Agolla & Ongori, 2009 & Shan et al., 2010). It can be concluded that academic stress of most of male students had higher than that of female students.

According to the ANOVA result for academic stress by subject stream, there was a significant difference among the groups of subject stream at the .001 level. According to Post Hoc test, there was significant difference between subject stream-1 and subject stream-2 students (*MD*=-2.549, p<.01). And there was also significant difference between subject stream-1 and subject stream-3 (*MD*=-4.813, p<.001). This may be due to subject stream-2 and subject stream-3 students may suffer more anxiety and worry concerning about with academic learning and tests because of their lower entrance marks and may be more encounter language difficulties than subject stream-1 students.

It can be concluded that academic stress of most of subject stream-1 students was the lowest among three subject streams students. It can be concluded that academic stress of most of subject stream-3 students had the highest among groups of subject stream.

According to the *t* test result for academic stress by grade, there was no significant difference in academic stress between fourth year and fifth year students. This may be because both fourth year and fifth year students may encounter class workload situations such as too much projects, assignments and tem-papers and a lot of studies hours which cause them to lose focus academic work and stress them up. This is due to both fifth year and fourth year students may have the same degree in academic stress.

The results of independent samples *t* test for comparing academic stress revealed that most of university-1 students was significantly higher academic stress than university-2 students (t=4.588, p<.001). This may be due to university-1 may be lower time management and higher student-teacher ratio than university-2. Therefore, university-1 students may be increased academic workload and the absence of healthy teacher-student interaction than university-2 students. Academic workload situations and student-teacher interaction effect on academic stress (Agolla & Ongori, 2009).

According to Pearson Product-Moment Correlation, it was found that there was a statistically significant negative correlation between adversity quotient and academic stress (r =-.462). Therefore, it can be concluded that the higher the adversity quotient of university students, the lower their academic stress.

According to linear regression, the result revealed that adversity quotient can predict 21% of academic stress (adjusted *R* square=.213). It can be concluded that academic stress of university students can reduce when increase their adversity quotient.

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