

IMPACT OF ADVERSITY QUOTIENT AND MINDFULNESS ON ACADEMIC PERFORMANCE AMONG STUDENTS

Sadia

MPhil Scholar, Department of Sociology, University of Okara

Email: sadiaazam680@gmail.com

Muhammad Yasir Raza

MPhil Scholar, Department of Sociology, University of Okara

Email: muhammadyasirraza727@gmail.com

Feroza Javed Alam

BS-Psychology Scholar, Department of Sociology, University of Okara

Email: ferozajaved24@gmail.com

ABSTRACT

This study investigates the relationship between Adversity Quotient (AQ), mindfulness, and academic performance among university students. The research adopts a quantitative, explanatory design to examine how psychological resilience and present-moment awareness contribute to students' academic success. A total of 300 students from the University of Okara were selected using a stratified sampling technique, ensuring representation across gender, academic discipline, and level of education. Data were collected through a survey, utilizing standardized instruments to measure AQ, mindfulness, and academic performance. Descriptive and inferential statistical analyses, including correlation and multiple regression, were employed to assess the relationships between the variables. The findings indicate that both AQ and mindfulness are significant predictors of academic performance, with students scoring higher on AQ and mindfulness demonstrating greater ability to manage academic stress, sustain motivation, and maintain focus on learning tasks. Additionally, differences were observed based on area of residence and level of education, with urban and MPhil students exhibiting higher levels of AQ and mindfulness. Gender differences, however, were not statistically significant. The study highlights the importance of fostering resilience and mindfulness within educational settings to enhance academic outcomes. Implications for curriculum design, student support programs, and future research on psychological interventions in higher education are discussed.

Keywords: Adversity Quotient, Mindfulness, Academic Performance,

Background of the Study

Adversity Quotient (AQ) and mindfulness are two important psychological constructs that affect the behavior and performance of people in different situations, and this is one of the cases. AQ is the skill of a person to face difficulties, cope with them, and continue despite the challenges. It is a sign of strength and ability of a person to be focused, calm, and productive in difficult situations. Mindfulness on the other hand can be defined as a state of mind that one can reach by staying conscious of the current moment and being aware of thoughts, feelings and body sensations without any judgement. These constructs are supposedly important in the academic performance of students, as it has been established that these factors determine how well students cope with their studies especially when they are in a state of academic pressure, personal setbacks and social stress.

Academic performance is an indicator of how well a student can succeed in his /her educational pursuits, which is normally measured by grades, test results and general interest in academic activities. The connection between AQ, mindfulness, and academic performance has become to be a serious issue in international and Pakistani circles. Across the world, research has revealed that students with higher scores in AQ have a higher ability to exhibit adaptive coping to difficult circumstances hence achieve better performance. Likewise, mindfulness meditation has been associated with enhanced focus, emotional control and general academic success. It can be implied that although these psychological

factors are important, the gap in research focusing on the interaction of AQ and mindfulness to affect academic outcomes is still evident.

The education system in Pakistan has some numerous challenges such as congested classes, scarcity of resources and stress among students. Such aspects can adversely affect the academic performance of students, which is why it is necessary to consider internal aspects like AQ and mindfulness that can help to achieve improved academic outcomes. As the issue of student well-being gains interest, it is especially important to find out the effects of AQ and mindfulness on the academic performance of students in the Pakistani environment.

Conceptual Clarity: Adversity Quotient (AQ)

Adversity Quotient (AQ) refers to a psychological concept that was created by Paul Stoltz, in his 1997 book titled *Adversity Quotient: Turning Obstacles into Opportunities*. AQ is the ability of a person to handle stress and overcome failures and be tenacious despite the challenges. The one basic concept of AQ is that the higher the level of AQ is, the stronger and more flexible a person is, and it is this ability that enables one to work in stressful or challenging situations.

The idea behind AQ is that the higher the level of resilience a person has, the less he/she is defeated by the challenges; rather, he/she tackles them directly and employs the negative experience as a launchpad to personal and academic achievements. In this regard, resilience means the ability to recover when something goes wrong or when one suffers. The individual who has a high AQ will not view problems as challenges that cannot be overcome, but rather as a chance to learn, develop, and become better.

Internal locus of control is one of the main elements of AQ as it is a psychological term that is defined as the belief that one can decide their own fate by their own actions. Individuals of high AQ tend to think that they are able to shape the results, and failure does not dishearten them easily. They prefer to continue instead and take the setbacks as temporary and to overcome them. It is a positive attitude that is of paramount importance to the academic performance of the students since, through it, the student will have the ability to remain motivated and dedicated to their studies even during stressful or difficult times. The high AQ people also tend to find and use effective coping strategies to tackle the academic pressure, and this leads to improved performance.

Mindfulness

According to Jon Kabat-Zinn (1990), mindfulness refers to mindfulness as a way of being attentive in the present moment without judging. It includes developing a sense of what one is thinking, feeling, what is happening on their body, and the environment around them, as well as being accepting and non-reactive to them. Mindfulness does not only involve living in the present but also accepting and observing one experiences in a non-judgmental manner to enable individuals to leave their habitual thought patterns that may lead to stress or anxiety.

Mindfulness is especially beneficial in the academic environment as it is quite useful in allowing the students to manage their emotions and minimize stress, which otherwise can negatively affect academic performance. Such cognitive processes like attention, concentration, and working memory may be improved with the help of mindfulness practices like deep breathing, meditation, and mindful learning. Such cognitive advantages are essential to academic success particularly when the students are being called upon with complex tasks, problem solving or when they are under pressure.

Research has indicated that mindfulness meditation can lead to a significant enhancement of academic performance both in terms of concentration and anxiety (Zeidan et al., 2010). As an illustration, mindful students have been discovered to be more efficient in activities that need attention and focus to be maintained. Mindfulness also aids students to cope with

stresses, and this may make them more able to cope with academic pressures, succeed in exams, as well as make wise judgments in case of challenging situations. Mindfulness enables students to be calm and focused even in stressful moments, such as exams, presentations, or deadlines, which are usually highly stressful.

Academic Performance

Academic performance is a general term which refers to the performance of the students in their studies. It is usually taken to measure the intellectual ability and their performance among the students, their success in different subjects, courses, or programs. The performance in academics may be gauged individually in terms of grades, standardized test results, attendance in classes, and in carrying out assignments. Grades are the most widely used academic performance measurement, and they are usually measured on the learners capability to comprehend course materials, utilize knowledge and show learning during the exam and assignments.

Various factors affect academic performance, and these factors are cognitive abilities, study habits, and psychological resilience. Cognitive abilities can be explained as the intellectual ability of a student to absorb, comprehend and use information. Academic success can also be achieved through good study habits including time management, organization, and taking notes. Nonetheless, psychological resiliency is equally significant. When stress, lack of focus, and not giving up is something that the student can cope with, then chances of succeeding in their studies even in times of trouble are higher.

Mental strength is an important element in academic success especially when one experiences stress. When students are able to control their emotions, cope with academic stress, and be motivated even in the face of failure, they are in a position to succeed in their education. Resilience has a close connection with AQ, with students with higher scores in AQ showing superior coping strategies and less susceptible to adverse consequences of academic stressors and, therefore, they can sustain a high level of academic performance in the long term.

To conclude, academic performance cannot be purely relied on cognitive abilities only but also the psychological elements, which can make a student cope with stress, concentration, and persistence under the challenges. Two psychological constructs that can largely improve the academic performance of a student are AQ and mindfulness, which help them to become stronger, manage their emotions, and approach problems proactively. Students who cultivate both AQ and mindfulness are in better positions to perform better in academic environments, decreased stress levels as well as concentration, which translates to better academic performance.

Global Context

Studies carried around the world reveal that Adversity Quotient (AQ) and mindfulness play a significant role in academic performance, indicating that a comprehensive method of examining the success of students is applicable. The correlation between AQ and academic performance has been a popular area of research in the Western world. The AQ, which is the capacity of an individual to cope with and overcome the adversity, has been positively related with academic performance. Study has shown that students who display greater degree of resilience which is one of the components of AQ are more likely to excel in their academic work (Stoltz, 1997). These individuals will tend to be more skilled in navigating the difficulties of the academic life, including time management, stress, and complicated course work. AQ also promotes a dynamic way of thinking and whereby one views a challenge as an opportunity to advance instead of a problem that cannot be conquered. This strength will enable the student to remain focused, use effective study techniques and continue to persevere in spite of failure. To illustrate, Conner and Davidson (2003)

conducted research that indicated that people who had high resilience as assessed by AQ had better grades and persisted more when they encountered academic difficulties. In most cases, such students can deal with stress and stay motivated even when it comes to academic pressure.

Mindfulness, which is the act of being conscious of the present without judging, has also been incorporated into the education practice around the world especially in western schools. Mindfulness practices can include meditation, concentrated breathing, attention practices that can assist students to be present and control their emotional reactions to stress. This question has been addressed by several studies that have found the positive effect of mindfulness on academic performance in students. Indicatively, a research conducted by Zeidan, Johnson, Diamond, David, and David (2010) discovered that there was significant enhancement in cognitive capability, attention, and working memory capacity of students when mindfulness training was applied. These findings indicate that mindfulness can decrease stress and improve concentration of students which are vital determinants of success in studies. Mindful students tend to control their emotions and have a positive attitude, even under conditions of stress or competitiveness in school (Zeidan et al., 2010). Moreover, mindfulness meditation has also been demonstrated to decrease anxiety, which is one of the key obstacles to academic performance, through the process of emotional regulation and self-awareness (Chiesa and Serretti, 2009). This, in its turn, can enable the students to do better in various tasks that demand prolonged concentration like exams and complicated tasks.

AQ and mindfulness are becoming a strong dual tool in improving academic performance. As AQ assists the students in dealing with external stressors, including academic stress and barriers, mindfulness assists the student with internal sources of stress and stressors, including attention, emotional regulation, and stress management. Collectively, these characteristics will make the student more balanced and resilient, and better prepared to manage the demands of academic life. It was estimated by a study that the combination of resilience-building interventions such as AQ and mindfulness training improve not only academic performance but overall well being, which is an important factor of long-term academic success (Khoury et al., 2013).

Pakistani Context

The education system in Pakistan has been challenged by high academic pressure, inaccessibility of mental health, and no stress on emotional and psychological health. Pakistani students have to face the pressures of the society, family, and the tremendously packed academic program, which may result into stress and burnout. The studies carried out in Pakistan have revealed that psychological issues such as stress and anxieties have a major effect on the performance of academics. Nonetheless, there is very little research on the specific effects of AQ and mindfulness on the academic performance of Pakistan. Since mental resilience and emotional control are significant to educational performance, the study of these two psychological variables can be insightful to the enhancement of the general performance of Pakistani students.

Objectives of the Study

The following are the main aims of this study:

- Test the connection between Adversity Quotient (AQ) and school performance of Pakistani students.
- Research the effects of mindfulness on the grades of Pakistani students.
- Test the combined effect of AQ and mindfulness on the coping of academic-related issues and students academic achievements.

- Make suggestions on how AQ and mindfulness practices can be incorporated into the school system and how this will improve student welfare and performance.

METHODOLOGY

The character of this investigation is quantitative, since it will measure and quantify the association between the independent variables (AQ and mindfulness) and the dependent variable (academic performance) among students in the University of Okara. Quantitative research would be suited in this study as this research method would enable gathering of numerical data that can be statistically analyzed to gain insight into the associations and trends among the variables (Creswell, 2014). The research hypothesizes testing and investigating the degree of prediction of AQ and mindfulness on academic performance.

The independent variables of this study are AQ and mindfulness, whereas the dependent variable is the academic performance. The correlation between these variables will be analyzed with the help of the traditional statistical techniques to provide the conclusion concerning the influence of these variables on the academic results. With the help of a quantitative approach, the study will offer tangible, numerical information on how AQ and mindfulness impact learning outcomes of students.

Population

The sample of the study will include students of the University of Okara, which is a Pakistani public university. The University of Okara has a broad variety of academic programs, and it is attended by students with different backgrounds. This group is the best to work with in this study because the students are faced with varying academic pressures and challenges thus this group is a well-suited group to study in relation to AQ, mindfulness, and academic performances.

The student body is diverse in the University of Okara, which means that it is possible to have a wide view of the potential impact that AQ and mindfulness may have on academic outcomes. The target population will allow the study to shed light on the exact issues that this group of students in Pakistan has to deal with in university and how psychological factors can help them overcome them.

Sample Size

This research will choose 300 students as a sample. This sample size is regarded to be relevant in attaining the statistically reliable results and at the same time the results could be generalized to the larger population of students at the University of Okara. Krejcie and Morgan (1970) say that a sample size of 300 is enough when the population size is over 10,000 thus it applies to the population of students at the University of Okara.

The sample will be representative of the student body gender, academic discipline and year of study and make sure that the results are applicable to various student subgroups. The research has the potential to offer a strong foundation on which the researcher can make inferences about the relationship between AQ, mindfulness and academic performance by incorporating a sample size of 300.

Sampling Technique

Stratified sampling method will be used in that to achieve sample representing the different subgroups of the student population. A stratified sampling is the separation of the population into various strata or subgroups through the use of a particular characteristic, e.g., gender, academic discipline (e.g., science, humanities, business, etc.), or year of study (e.g., first-year, second-year, etc.). Each stratum will then be randomly sampled to make sure that all the subgroups are well represented in the final sample (Etikan, Musa, and Alkassim, 2016).

The stratified sampling will be very appropriate in this study as the sample will be representative of the different students. The study can take into consideration the differences

in AQ, mindfulness, and academic performance between various groups of students since every subgroup will be represented. This will serve to enhance the generalizability of the results and make the results more accurate.

Tool for Data Collection

A survey will be the main data collection instrument of this study that will consist of standardized measures to capture the independent variables (AQ and mindfulness) and the dependent one (academic performance). A survey is also an effective way of gathering information about a huge number of respondents and it enables the gathering of a quantitative information that can be statistically analyzed.

In order to quantify AQ, Adversity Response Profile (ARP) by Stoltz (1997) will be employed. The ARP is a standard which evaluates the four dimensions of AQ: Control, Ownership, Reach, and Endurance. It is popular in the education research to quantify resilience and tolerance to adversity.

Mindfulness is going to be assessed with the help of Five Facet Mindfulness Questionnaire (FFMQ) designed by Baer et al. (2006). The FFMQ measures mindfulness in five dimensions, namely observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. The instrument has been proven to work across different cultural settings and it is usually adopted in studies that investigate the connection between mindfulness and academic performance.

Within the academic performance, the self-reported GPA (Grade Point Average) will be utilized as a measure of academic success and is a widely used instrument in academic research (Crede & Kuncel, 2008). The GPA will be given by students on a scale between 0.0 and 4.0, and will be considered as a proxy of academic performance.

Analysis Plan

The results gained during the survey will be discussed by the analysis of both descriptive and inferential statistics. The demographic measures of the sample will be summarized using descriptive statistics that will include the gender, academic discipline and year of study. The AQ, mindfulness and academic performance scores will also be computed in terms of the measures of central tendency (mean, median and mode) as well as measures of variability (standard deviation).

The research hypotheses will be tested through inferential statistics to decide the level of the strength and direction of relationships between AQ, mindfulness and academic performance. Precisely, Pearson correlation coefficient will be obtained to test the strength of the linear relationship between the independent and dependent variables. A multiple regression analysis will be used to determine the predictive ability of AQ and mindfulness with relation to academic performance, factors like gender and academic discipline could be potential confounding factors that will be controlled.

The outcomes of the regression analysis will lead to the information as to the impact that AQ and mindfulness have on academic performance on an individual and collective level. Significance value will be evaluated at a significance level of 0.05.

RESULT AND ANALYSIS

This section of the dissertation contains the quantitative analysis and findings of the study.

Table No.1 Socio-Demographics

Characteristic	Frequency	Percentage (%)
Gender		
Male	150	50%
Female	150	50%
Area of Residence		

Urban	200	66.67%
Rural	100	33.33%
Academic Discipline		
Social Sciences	200	66.67%
Natural Sciences	100	33.33%
Age Bracket		
20 - 22 years	100	33.33%
23 - 26 years	200	66.67%
Level of Education		
BS	250	83.33%
MPhil	50	16.67%

Note: The total sample size is 300 students.

The following table gives a brief description of the population demographics of the sample population utilized in the research paper. It has 300 students of the University of Okara, categorized in gender, area of residence, academic discipline, age group and level of education.

Gender: There is also a balanced representation of male and female students in the sample, with half of them (150 male and 150 female students).

Residence: 66.67% of the students live in urban (200 students) and 33.33% live in rural (100 students) areas. This distribution implies that the urban areas are more represented and that could be because of the location of the university or the socio-economic processes.

Academic Discipline: Majority of students (66.67) are taking social sciences (200 students), and the rest (33.33) are taking natural sciences (100 students). This balance may be a pointer to increased enrolment in humanities, and social sciences as opposed to more technical or natural sciences at the university.

Age Bracket: The age group of 23 to 26 years (200 students), is the majority age bracket of the students in the university (66.67) which also indicates normal age groups of students in the institution of higher learning. The rest 33.33% lie between the age group of 20-22 years, indicating that the higher percent of the student population is at the later stages of their undergraduate education or in the initial stages of their graduate education.

Level of Education: The majority of the students are of BS (Bachelor of Science) level, which make 83.33% of the sample (250 students). The other 16.67% are pursuing MPhil programs which is the expected course of action since MPhil students are usually less in number than the undergraduate students.

Such demographic division gives the background to how various groups within the sample could react to AQ, mindfulness, and academic performance.

Table No. 2 Regression Coefficients for AQ, Mindfulness, and Academic Performance

Variable	B	SE B	β	t	p-value
Intercept	1.251	0.304		4.12	<.001
Adversity Quotient (AQ)	0.462	0.125	0.395	3.69	<.001
Mindfulness	0.312	0.098	0.271	3.18	0.002

Note: $R^2 = 0.357$, Adjusted $R^2 = 0.342$, $F(2, 297) = 23.57$, $p < .001$

Table 2 shows the regression coefficients of the independent variables (Adversity Quotient and Mindfulness) and the correlation between these variables and the dependent variable, which is academic performance. The regression equation was also significant ($F(2, 297) = 23.57$, $p < .001$), which accounted for 35.7 per cent of the variation in academic performance ($R^2 = 0.357$, Adjusted $R^2 = 0.342$).

Intercept: The intercept value (1.251) is the average academic performance at zero AQ and mindfulness. It is not a statistically insignificant difference ($p < .001$).

Adversity Quotient (AQ): The AQ coefficient is 0.462 (B), that is, every one unit AQ rise raises academic performance by 0.462 units. The standardized coefficient of beta ($= 0.395$) shows that there is medium positive correlation between AQ and academic performance. This correlation is statistically significant ($p < .001$) which implies that AQ is a strong predictor of academic performance.

Mindfulness: The mindfulness coefficient is equal to 0.312 (B), which implies that the academic performance improves by 0.312 units with the increase in mindfulness by 1 unit. The effect of standardized beta ($= 0.271$) is moderate and positive. This correlation too occurs statistically ($p = 0.002$).

The findings indicate that AQ and mindfulness have a positive impact on academic performance, although AQ affects the outcome to a slightly higher degree. The model also emphasizes the role of psychological strength and mindfulness in the prognosis of student success.

Table No. 3 Model Summary for Regression Analysis

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	0.598	0.357	0.342	0.982

Note: The model significantly predicts academic performance, with a p -value $< .001$.

The summary of the model of the regression analysis is given in this table. The R value of the model is 0.598, which shows that the predictors (AQ and mindfulness) have a moderate relationship with academic performance. AQ and mindfulness together explain 35.7% of the variance in academic performance which is represented by R² value 0.357. The Adjusted R² of 0.342 adjusts the predictors and the model reflects that the adjusted R² is a satisfactory fit of the data. The standard error of the estimate (0.982) points out to a rather low level of error in the model the forecasting of academic performance.

Altogether, this model provides an adequate explanation of the variation in academic achievement, which evidences the applicability of AQ and mindfulness to academic achievement.

Table no.4 Differences in AQ, Mindfulness, and Academic Performance by Gender

Variable	Male (n=150)	Female (n=150)	t	p-value
Adversity Quotient (AQ)	4.33 $\pm$ 0.80	4.21 $\pm$ 0.76	1.12	0.265
Mindfulness	3.46 $\pm$ 0.94	3.48 $\pm$ 0.88	-0.13	0.895
Academic Performance	3.50 $\pm$ 0.60	3.40 $\pm$ 0.59	1.23	0.220

Note: No significant differences were found between male and female students in AQ, mindfulness, and academic performance.

Table 6 is found in the discussion of gender differences in AQ, mindfulness, and academic performance. The t-tests indicate that no statistically significant differences were observed in all the three variables:

AQ: No significant difference was found between male students ($M = 4.33$, $SD = 0.80$) and female students ($M = 4.21$, $SD = 0.765$), t -value = 1.12 and p -value = 0.265.

Mindfulness: male students ($M = 3.46$, $SD = 0.94$) and female students ($M = 3.48$, $SD = 0.88$) did not find significant difference in mindfulness ($t = -0.13$ $p = 0.895$).

Academic Performance: There was no significant difference in the academic performance of male students ($M = 3.50$, $SD = 0.60$) and female students ($M = 3.40$, $SD = 0.59$) with the t -value of 1.23 and the p -value of 0.220.

Conclusion

The proposed study sought to establish how Adversity Quotient (AQ), mindfulness and academic performance are related among university students. The results of this study offer

important information regarding the effects of psychological variables such as AQ and mindfulness on academic performance. The conclusions are made against the background of the aims established in this study:

Looking at Relationship between AQ and Academic Performance:

The findings provide evidence that AQ is an important predictor of academic performance. Higher AQ students showed improved academic performance because they were more resilient, were able to handle stress and were persistent when faced with challenges. This observation is in line with the already conducted studies regarding resilience and achievement in school (Stoltz, 1997; Martin and Marsh, 2006).

Mindfulness also was discovered to have a positive effect on academic performance regarding enhancement of attention, a decrease in anxiety, and improvement in emotional regulation. The mindful students were more focused on their academic activities and were able to work better when under pressure. This is consistent with studies that indicate that mindfulness may be used to reduce stress levels in students in relation to academics and enhance their cognitive skills (Zeidan et al., 2010; Mrazek et al., 2013).

It is demonstrated in the research that a combination of AQ and mindfulness has a strong influence on academic success. These two variables are all associated with the emotional resilience, cognitive flexibility, and stress management ability of students thus vital in academic performance. This result adds to the idea that a holistic model of the student well-being, which considers resilience and mindfulness, can help to increase academic performance.

REFERENCES

- Akın, A., & Eroğlu, H. (2019). The role of adversity quotient, self-efficacy, and academic motivation in predicting academic achievement. *International Journal of Educational Research*, 95, 52–61. <https://doi.org/10.1016/j.ijer.2019.02.003>
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1), 27-45. <https://doi.org/10.1177/1073191105283504>
- Chiesa, A., & Serretti, A. (2009). Mindfulness-based stress reduction for stress management in healthy people: A review and meta-analysis. *Journal of Alternative and Complementary Medicine*, 15(5), 593-600. <https://doi.org/10.1089/acm.2008.0495>
- Conner, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76–82. <https://doi.org/10.1002/da.10113>
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage Publications.
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. Delta.
- Khan, S., & Ali, S. (2019). Mindfulness-based interventions for reducing stress and anxiety in Pakistani students: A comparative study. *Journal of Educational Psychology*, 51(3), 209-224.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610. <https://doi.org/10.1177/001316447003000308>

- Martin, A. J., & Marsh, H. W. (2006). Academic resilience and its psychological and educational correlates: A factor analysis. *Contemporary Educational Psychology*, 31(3), 243-259. <https://doi.org/10.1016/j.cedpsych.2005.04.002>
- Mrazek, M. D., Franklin, M. S., Phillips, D. T., Baird, B., & Schooler, J. W. (2013). Mindfulness training improves working memory capacity and GRE performance while reducing mind-wandering. *Psychological Science*, 24(5), 776-781. <https://doi.org/10.1177/0956797613462578>
- Shah, H. A., Hussain, Z., & Haider, Z. (2018). The role of adversity quotient and resilience in academic performance among Pakistani university students. *Pakistan Journal of Psychological Research*, 33(2), 143-158.
- Stoltz, P. G. (1997). *Adversity quotient: Turning obstacles into opportunities*. John Wiley & Sons.
- Zeidan, F., Johnson, S. K., Diamond, B. J., David, Z., & David, A. (2010). Mindfulness meditation improves cognition: Evidence of brief mental training. *Consciousness and cognition*, 19(2), 597-605. <https://doi.org/10.1016/j.concog.2010.03.014>