

The Influence of Anxiety on Cognitive Failures among Cognitive Science Undergraduate Students

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ABSTRACT

Anxiety is a common psychological concern among university students and may be associated with difficulties in everyday cognitive functioning. However, limited empirical evidence is available on the relationship between anxiety and cognitive failures among Malaysian undergraduate students. This study examined the relationship between anxiety scores and cognitive failure scores among Cognitive Science undergraduate students at Universiti Malaysia Sarawak. It also compared cognitive failure scores by gender and examined differences in anxiety and cognitive failure scores across year of study. A quantitative cross-sectional survey design was employed. A total of 120 respondents were recruited through convenience sampling and completed an online questionnaire consisting of demographic items, the Generalized Anxiety Disorder 7-item Scale (GAD-7), and The Cognitive Failures Questionnaire 2.0 (CFQ-2.0). Data were analysed using descriptive statistics, reliability analysis, Pearson's correlation, an independent-samples *t*-test, and one-way analysis of variance. Both instruments demonstrated good internal consistency in the present sample. The findings showed a significant positive relationship between anxiety scores and cognitive failure scores, $r(118) = .686, p < .001$. However, cognitive failure scores did not differ significantly between male and female respondents, $t(118) = 1.304, p = .195$. No significant differences were found in anxiety scores, $F(2, 117) = 2.736, p = .069$, or cognitive failure scores, $F(2, 117) = 1.717, p = .184$, across year of study. Overall, higher anxiety scores were associated with more frequent reported cognitive failures, while gender and year of study did not significantly differentiate the scores examined. These findings provide additional local evidence and highlight the importance of considering anxiety when understanding and supporting students' everyday cognitive difficulties.

Keywords: anxiety, cognitive failures, undergraduate students, GAD-7, CFQ-2.0

INTRODUCTION

Anxiety is a psychological state characterised by nervousness, worry, and physical tension that may arise when an individual anticipates a possible threat or negative event (American Psychological Association, 2018). Anxiety is widely recognised as a psychological concern among university students, with academic demands, lifestyle changes, adjustment difficulties, and stressful situations contributing to students' anxiety experiences (Tan et al., 2023). A national study conducted in Malaysia also reported a substantial risk of anxiety among university students, indicating that anxiety is an important concern within the local higher education context (Mohamad et al., 2021).

Although anxiety is commonly discussed in relation to emotional well-being, it may also be associated with difficulties in cognitive functioning. University students depend on attention, memory, information processing, and executive functioning to manage lectures, assignments, examinations, and daily responsibilities. Anxiety may consume attentional resources and interfere with working memory, potentially making it more difficult for

students to concentrate and manage cognitive demands effectively. Owens et al. (2012) discussed worry and working memory as possible mechanisms connecting anxiety with academic performance, suggesting that anxiety-related thoughts may reduce the cognitive resources available for ongoing tasks.

Cognitive failures refer to minor lapses in attention, memory, perception, and action that occur during everyday activities (Broadbent et al., 1982). Examples include forgetting information, losing concentration, misplacing objects, and making unintended mistakes. Although cognitive failures are generally non-clinical, frequent occurrences may affect students' daily functioning and their ability to complete academic tasks effectively.

Previous studies have identified relationships between anxiety, psychological strain, and everyday cognitive failures. Goodhew and Edwards (2024a) found that individuals with higher trait anxiety reported more frequent cognitive failures, particularly those involving attention and memory. Dzubur et al. (2020) similarly reported that psychosocial and emotional difficulties were associated with increased cognitive failures among students. In an educational setting, Moghadam et al. (2021) found that female students experiencing test anxiety reported more cognitive failures than students without test anxiety. These findings suggest that anxiety may be relevant not only to emotional distress but also to everyday cognitive functioning.

Despite this evidence, limited research has examined the relationship between general anxiety and cognitive failures among Malaysian undergraduate students. Existing local research has mainly focused on the prevalence and associated factors of anxiety, with less attention given to daily cognitive lapses involving attention, memory, and action. There is also limited local research using standardised instruments such as the Generalized Anxiety Disorder 7-item Scale (GAD-7) and The Cognitive Failures Questionnaire 2.0 (CFQ-2.0).

Gender may also be relevant to cognitive functioning because males and females may differ in emotional processing, stress responses, and how cognitive difficulties are reported. Previous findings have been inconsistent. Upadhayay and Guragain (2014) found differences between male and female students in specific cognitive domains, although overall cognitive functioning was broadly comparable. Riaz et al. (2024) also suggested that gender may play a role in the experience of cognitive failures under psychological burden. However, limited evidence is available regarding gender differences in everyday cognitive failures among Malaysian undergraduate students.

Students may also experience different psychological and academic demands across their years of undergraduate study. Students in earlier years may need to adjust to new learning environments and expectations, while students in later years may experience heavier academic responsibilities and concerns about graduation or future employment. Asriati et al. (2024) reported a significant difference in anxiety between first-year and fourth-year medical students, with first-year students experiencing higher anxiety. Nevertheless, direct comparisons of cognitive failures across year of study remain limited.

Study Objectives

This study aimed to examine the relationship between anxiety scores and cognitive failure scores among Cognitive Science undergraduate students, compare cognitive failure scores between male and female students, examine whether anxiety scores differed across year of study, and compare cognitive failure scores across year of study.

Research Hypotheses

H1: There is a significant relationship between anxiety scores and cognitive failure scores among Cognitive Science undergraduate students.

H2: There is a significant difference in cognitive failure scores between male and female Cognitive Science undergraduate students.

H3: There is a significant difference in anxiety scores across year of study among Cognitive Science undergraduate students.

H4: There is a significant difference in cognitive failure scores across year of study among Cognitive Science undergraduate students.

METHODOLOGY

Research Design

This study employed a quantitative cross-sectional survey design to examine anxiety and cognitive failures among Cognitive Science undergraduate students. Data were collected at a single point in time through a self-administered online questionnaire. This design was appropriate because the study measured the variables numerically, examined the relationship between anxiety and cognitive failures, and compared scores across gender and year-of-study groups.

Population, Sample and Sampling Procedure

The study population consisted of Year 1 to Year 3 undergraduate students enrolled in the Cognitive Science programme at Universiti Malaysia Sarawak. Students from other academic programmes were not included. The sample was selected using convenience sampling, as respondents were recruited based on their availability and willingness to complete the online questionnaire.

An a priori power analysis was conducted using G*Power to determine the minimum required sample size. The calculation was based on a one-way analysis of variance comparing three year-of-study groups, with a moderate effect size of $f = 0.30$, a significance level of .05, and statistical power of .80. The minimum required sample was 111 respondents. A total of 120 respondents completed the study and were included in the analysis.

Research Instruments

The questionnaire was prepared using Google Forms and consisted of three sections: demographic information, the Generalized Anxiety Disorder 7-item Scale, and The Cognitive Failures Questionnaire 2.0.

Demographic Information

The demographic section collected information on respondents' age, gender, and current year of study. Gender and year of study were used as grouping variables for the statistical comparisons.

Generalized Anxiety Disorder 7-item Scale

Anxiety was measured using the Generalized Anxiety Disorder 7-item Scale developed by Spitzer et al. (2006). The GAD-7 contains seven items that assess the frequency of anxiety symptoms. Responses are recorded on a four-point scale ranging from 0, indicating "not at all," to 3, indicating "nearly every day."

The possible total score ranges from 0 to 21, with higher scores indicating higher levels of anxiety. In this study, the total GAD-7 score was treated as a continuous variable. Previous research has supported the reliability and validity of the GAD-7 in assessing anxiety symptoms (Rutter & Brown, 2016; Spitzer et al., 2006).

The Cognitive Failures Questionnaire 2.0

Everyday cognitive failures were assessed using The Cognitive Failures Questionnaire 2.0 developed by Goodhew and Edwards (2024b). The CFQ-2.0 contains 15 items assessing the frequency of everyday lapses involving attention, memory, and action.

Respondents indicated how frequently they experienced each cognitive lapse using a Likert-type response scale. The possible total score ranges from 0 to 60, with higher scores indicating more frequent reported cognitive failures. The CFQ-2.0 was developed as an updated and concise version of the original Cognitive Failures Questionnaire introduced by Broadbent et al. (1982).

Data Collection Procedure

Data were collected using an online questionnaire distributed through messaging applications and university-related online channels. An informed consent statement was presented at the beginning of the questionnaire. It explained the purpose of the study, the voluntary nature of participation, respondents' right to withdraw, and the confidentiality and anonymity of their responses.

Respondents were required to indicate their consent before accessing the questionnaire. No personally identifiable information was collected. The responses were recorded anonymously and used only for academic research purposes.

Data Analysis

The data were analysed using the Statistical Package for the Social Sciences. Data screening was conducted before the statistical analyses to check completeness and accuracy.

Frequencies and percentages were calculated to describe the respondents' demographic characteristics. Means, standard deviations, minimum scores, and maximum scores were used to describe the GAD-7 and CFQ-2.0 scores. Cronbach's alpha was calculated to assess the internal consistency of both instruments within the current sample.

Pearson's correlation was used to examine the relationship between anxiety scores and cognitive failure scores. An independent-samples *t*-test was conducted to compare cognitive failure scores between male and female respondents. Two one-way analyses of variance were conducted to compare anxiety scores and cognitive failure scores across the three year-of-study groups. All inferential analyses were evaluated using a significance level of $p < .05$.

RESULTS

Respondent Characteristics

A total of 120 respondents participated in the study. Of these, 68 respondents were female and 52 were male. Year 3 students formed the largest year-of-study group, with 52 respondents. Most respondents were between 22 and 23 years old.

Table 1 Demographic Profile of Respondents

Demographic Variable	Category	Frequency (<i>n</i>)	Percentage (%)
Gender	Male	52	43.3
	Female	68	56.7
Year of Study	Year 1	33	27.5
	Year 2	35	29.2
	Year 3	52	43.3
Age Group	18–19 years	7	5.8
	20–21 years	33	27.5
	22–23 years	67	55.8
	24 years and above	13	10.8

Note. $N = 120$. Percentages may not total 100 due to rounding.

Descriptive Statistics and Reliability

The GAD-7 total scores ranged from 0 to 21, with a mean of 9.68 and a standard deviation of 5.37. The CFQ-2.0 total scores ranged from 0 to 53, with a mean of 27.11 and a standard deviation of 13.09.

The GAD-7 demonstrated good internal consistency, with a Cronbach's alpha value of .893. Corrected item-total correlations ranged from .637 to .734. The CFQ-2.0 also demonstrated good internal consistency, with a Cronbach's alpha value of .925. Corrected item-total correlations ranged from .452 to .706. All items from both instruments were retained for further analysis.

Table 2 Descriptive Statistics and Reliability of the Main Variables

Variable	<i>N</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>	Number of items	Cronbach's alpha
GAD-7 total score	120	0.00	21.00	9.68	5.37	7	.893
CFQ-2.0 total score	120	0.00	53.00	27.11	13.09	15	.925

Note. GAD-7 = Generalized Anxiety Disorder 7-item Scale; CFQ-2.0 = The Cognitive Failures Questionnaire 2.0; *M* = mean; *SD* = standard deviation.

Relationship Between Anxiety and Cognitive Failures

Before Pearson's correlation was conducted, normality, linearity, and outliers were examined. The GAD-7 score showed a statistically significant Shapiro–Wilk result, $W = .973$, $p = .015$, while the CFQ-2.0 score did not significantly deviate from normality, $W = .981$, $p = .095$.

Although the GAD-7 result was significant, visual inspection of the histograms and Q–Q plots did not indicate a severe departure from normality. The boxplots did not show clear extreme outliers, and the scatterplot showed a positive linear relationship between anxiety and cognitive failure scores. Pearson's correlation was therefore retained.

The analysis showed a significant positive relationship between GAD-7 and CFQ-2.0 total scores, $r(118) = .686$, $p < .001$. Respondents with higher anxiety scores tended to report higher cognitive failure scores. Therefore, H1 was supported.

Gender Difference in Cognitive Failure Scores

An independent-samples *t*-test was conducted to compare cognitive failure scores between male and female respondents. Levene's test was not statistically significant, $p = .054$, indicating that the assumption of equal variances was not violated.

Male respondents reported a higher mean cognitive failure score, $M = 28.88$, $SD = 14.57$, than female respondents, $M = 25.75$, $SD = 11.77$. However, the difference was not statistically significant, $t(118) = 1.304$, $p = .195$. Therefore, H2 was not supported.

Differences in Anxiety Scores Across Year of Study

A one-way analysis of variance was conducted to compare anxiety scores across year of study. Levene's test was not statistically significant, $p = .458$, indicating that the assumption of homogeneity of variance was not violated.

Year 1 respondents reported the highest mean anxiety score, $M = 11.52$, $SD = 5.28$, followed by Year 3 respondents, $M = 9.04$, $SD = 5.50$, and Year 2 respondents, $M = 8.91$, $SD = 4.96$. However, the overall difference was not statistically significant, $F(2, 117) = 2.736$, $p = .069$. Therefore, H3 was not supported.

Differences in Cognitive Failure Scores Across Year of Study

A one-way analysis of variance was conducted to compare cognitive failure scores across year of study. Levene's test was not statistically significant, $p = .243$, indicating that the assumption of homogeneity of variance was not violated.

Year 1 respondents reported the highest mean cognitive failure score, $M = 30.61$, $SD = 15.09$, followed by Year 2 respondents, $M = 26.43$, $SD = 11.49$, and Year 3 respondents, $M = 25.35$, $SD = 12.55$. However, the overall difference was not statistically significant, $F(2, 117) = 1.717$, $p = .184$. Therefore, H4 was not supported.

Table 3 Summary of Inferential Statistical Findings

Hypothesis	Statistical Test	Result	Decision
H1: There is a significant relationship between anxiety scores and cognitive failure scores among Cognitive Science undergraduate students.	Pearson correlation	$r(118) = .686$, $p < .001$	Supported
H2: There is a significant difference in cognitive failure scores between male and female Cognitive Science undergraduate students.	Independent samples <i>t</i> -test	$t(118) = 1.304$, $p = .195$	Not supported
H3: There is a significant difference in anxiety scores across year of study among Cognitive Science undergraduate students.	One-way ANOVA	$F(2, 117) = 2.736$, $p = .069$	Not supported
H4: There is a significant difference in cognitive failure scores across year of study among Cognitive Science undergraduate students.	One-way ANOVA	$F(2, 117) = 1.717$, $p = .184$	Not supported

Note. The significance level was set at $p < .05$.

DISCUSSION

The present study examined the relationship between anxiety and cognitive failures among Cognitive Science undergraduate students. It also examined differences in cognitive failure scores according to gender and differences in anxiety and cognitive failure scores across year of study.

The main finding was a significant positive relationship between anxiety scores and cognitive failure scores. Respondents with higher anxiety scores tended to report more frequent everyday cognitive failures. However, cognitive failure scores did not differ significantly between male and female respondents. Anxiety and cognitive failure scores also did not differ significantly across year of study.

Relationship Between Anxiety and Cognitive Failures

The significant positive relationship between GAD-7 and CFQ-2.0 scores supported H1. This finding suggests that respondents who reported higher anxiety also tended to report more frequent lapses involving attention, memory, and action.

The finding is consistent with previous research associating anxiety and psychological strain with cognitive difficulties. Goodhew and Edwards (2024a) found that people with higher trait anxiety experienced more frequent cognitive failures, particularly in attention and memory. Dzubur et al. (2020) similarly reported that psychosocial and emotional difficulties were associated with cognitive failures among students.

One possible explanation is that anxiety-related worry may compete for limited cognitive resources. Owens et al. (2012) examined worry and working memory as factors connecting anxiety with academic performance. When attention and working memory are occupied by anxious thoughts, fewer cognitive resources may be available for ongoing activities. This may contribute to difficulties such as losing concentration, forgetting information, or making unintended mistakes.

The finding is also consistent with Moghadam et al. (2021), who reported that students with test anxiety experienced more cognitive failures than students without test anxiety. Together, these findings suggest that anxiety may be associated with everyday cognitive functioning in addition to emotional distress.

The relationship is particularly relevant to university students because their academic activities require attention, memory, problem-solving, and continuous information processing. Students with higher anxiety scores may therefore be more likely to experience difficulties when managing these cognitive demands.

Nevertheless, the finding must be interpreted cautiously. The cross-sectional correlational design does not establish cause and effect. The results do not prove that anxiety causes cognitive failures. It is also possible that frequent cognitive failures contribute to anxiety, or that both variables are affected by other factors not examined in this study.

Gender Difference in Cognitive Failure Scores

The study did not find a statistically significant difference in cognitive failure scores between male and female respondents. Therefore, H2 was not supported. Although the male respondents had a higher mean cognitive failure score, the observed difference was not sufficiently large to be considered statistically significant.

This result differs partly from research suggesting that gender may influence cognitive failures under psychological burden. Riaz et al. (2024) reported that gender played a role in cognitive failures experienced under psychological strain. However, previous findings regarding gender and cognitive functioning have not been consistent. Upadhayay and Guragain (2014) found gender differences in certain cognitive domains but also found that overall cognitive functioning was broadly comparable.

One possible explanation for the present finding is that all respondents were recruited from the same academic programme. Male and female Cognitive Science students may have experienced similar learning environments, academic expectations, and cognitive demands. However, academic workload and learning experiences were not directly measured, so this explanation should be treated cautiously.

The use of a self-report measure may also have affected the findings. The CFQ-2.0 assesses respondents' perceptions of their cognitive lapses. Responses may therefore depend on honesty, self-awareness, and interpretation of the questionnaire items. Overall, the present study did not provide sufficient evidence that male and female respondents differed in their reported cognitive failure scores.

Differences in Anxiety Across Year of Study

Anxiety scores did not differ significantly among Year 1, Year 2, and Year 3 respondents. Therefore, H3 was not supported. Year 1 respondents had the highest mean anxiety score, but the overall difference did not reach statistical significance.

This finding differs from Asriati et al. (2024), who reported a significant difference in anxiety between first-year and fourth-year medical students. Their findings suggested that adaptation to university life may contribute to greater anxiety among students in earlier academic years.

In the present study, year of study alone may not have been sufficient to explain differences in anxiety. Students' anxiety experiences may also be influenced by workload, financial concerns, personal circumstances, coping strategies, and social support. For example, Yang et al. (2025) found that greater perceived social support was associated with lower anxiety among college students. These factors were not directly measured in the present study.

The sample was also limited to students from one academic programme. The experiences of the three year groups may have been more similar than those of students from different programmes or universities. Therefore, the result should not be interpreted as showing that year of study is unrelated to anxiety in all undergraduate populations. It only indicates that no statistically significant difference was found within the present sample.

Differences in Cognitive Failures Across Year of Study

Cognitive failure scores did not differ significantly among Year 1, Year 2, and Year 3 respondents. Therefore, H4 was not supported. Although Year 1 respondents had the highest mean cognitive failure score, the observed differences were not statistically significant.

Previous research has more commonly examined cognitive failures in relation to anxiety, stress, and psychological burden than through direct comparisons across academic years. Dzubur et al. (2020) associated psychosocial difficulties with cognitive failures among students, while Goodhew and Edwards (2024a) found that higher trait anxiety was associated with more frequent cognitive failures.

Respondents from different years in the present study were enrolled in the same Cognitive Science programme. Although the complexity of academic tasks may differ across years, students from all three groups are required to use attention, memory, and information-processing abilities. Their shared academic environment may partly explain why clear differences were not observed. However, the study did not directly measure academic workload or cognitive demands.

The absence of significant anxiety differences across year of study may also be relevant. Anxiety was positively associated with cognitive failures, but anxiety did not differ significantly across the three year groups. This may partly relate to the similar cognitive failure scores observed across year of study. Nevertheless, the study did not conduct mediation or explanatory analyses, so this interpretation remains tentative.

Practical Implications

The findings may have practical implications for university counsellors, lecturers, and student support services. Because higher anxiety scores were associated with more frequent cognitive failures, psychological factors may need to be considered when students report difficulties such as losing concentration, forgetting information, or making unintended mistakes.

Support for emotional well-being may also be relevant to students who experience difficulties in everyday cognitive functioning. However, the findings do not show that anxiety directly causes cognitive failures. Students experiencing cognitive difficulties should therefore be considered individually, taking into account psychological, academic, social, and personal factors.

The absence of significant differences according to gender and year of study also suggests that support should not be restricted to one gender or academic year based on the present findings. Awareness, counselling, and academic support related to anxiety and everyday cognitive difficulties may be beneficial across different groups of undergraduate students.

Limitations and Recommendations for Future Research

Several limitations should be considered when interpreting the findings. First, anxiety and cognitive failures were assessed using self-report questionnaires. The accuracy of the responses depended on respondents' honesty, self-awareness, and understanding of the items. Some respondents may have underreported or overreported their experiences.

Second, the cross-sectional design collected data at only one point in time. The study therefore cannot determine the direction of the relationship between anxiety and cognitive failures or establish cause and effect.

Third, convenience sampling was used, and the sample consisted only of Cognitive Science undergraduate students from one university. The findings may therefore not be generalised to students from other programmes, faculties, or institutions.

Fourth, the questionnaire was administered online. The researcher could not fully control the environment in which respondents completed the survey. Distractions or multitasking may have influenced their responses.

Future research should include larger and more diverse samples from different academic programmes and universities. Longitudinal studies could examine how anxiety and cognitive failures change over time and provide a clearer understanding of their direction of association.

Future studies may also combine self-report questionnaires with objective cognitive tasks measuring attention, memory, and information processing. Additional factors such as stress, sleep quality, academic workload, coping strategies, and social support should also be considered to provide a more comprehensive explanation of anxiety and cognitive failures among undergraduate students.

CONCLUSION

This study examined the relationship between anxiety scores and cognitive failure scores among Cognitive Science undergraduate students at Universiti Malaysia Sarawak. It also examined cognitive failure scores according to gender and compared anxiety and cognitive failure scores across year of study.

The findings showed a significant positive relationship between anxiety scores and cognitive failure scores. Respondents with higher anxiety scores tended to report more frequent everyday cognitive failures. However, cognitive failure scores did not differ significantly between male and female respondents. Anxiety and cognitive failure scores also did not differ significantly across year of study.

The findings provide additional local evidence that anxiety is associated with everyday lapses involving attention, memory, and action among undergraduate students. However, the correlational and cross-sectional design does not establish that anxiety causes cognitive failures.

Overall, the study highlights the importance of considering anxiety when understanding students' difficulties in everyday cognitive functioning. It also provides a foundation for future research and student support efforts within the Malaysian higher education context.

REFERENCES

1. American Psychological Association. (2018, April 19). APA dictionary of psychology. Dictionary.apa.org. <https://dictionary.apa.org/anxiety>
2. Asriati, A., Barnianti, B., & Eddy, N. (2024). Study on the difference in anxiety levels between first-year and fourth-year medical undergraduate students at halu oleo university in 2022. *Advances in Health Sciences Research*, 65–72. https://doi.org/10.2991/978-94-6463-392-4_7

3. Broadbent, D. E., Cooper, P. F., FitzGerald, P., & Parkes, K. R. (1982). The cognitive failures questionnaire (CFQ) and its correlates. *British Journal of Clinical Psychology*, 21(1), 1–16. <https://doi.org/10.1111/j.2044-8260.1982.tb01421.x>
4. Dzubur, A., Koso-Drljevic, M., & Lisica, D. (2020). Understanding cognitive failures through psychosocial variables in daily life of students. *Journal of Evolution of Medical and Dental Sciences*, 9(45), 3382–3386. <https://doi.org/10.14260/jemds/2020/743>
5. Goodhew, S. C., & Edwards, M. (2024a). Elevated cognitive failures in trait anxiety. *Personality and Individual Differences*, 216, 112418. <https://doi.org/10.1016/j.paid.2023.112418>
6. Goodhew, S. C., & Edwards, M. (2024b). The Cognitive Failures Questionnaire 2.0. *Personality and Individual Differences*, 218, 112472. <https://doi.org/10.1016/J.PAID.2023.112472>
7. Moghadam, A. H., Chokami, Z. S., Tajbakhsh, K., & Abolghasemi, A. (2021). Comparison of cognitive failure, emotional processing and resilience in female students with and without test anxiety. *Journal of Modern Psychology*, 1(2), 26–39. <https://doi.org/10.22034/jmp.2021.283320.1013>
8. Mohamad, N. E., Sidik, S. M., Akhtari-Zavare, M., & Gani, N. A. (2021). The prevalence risk of anxiety and its associated factors among university students in Malaysia: A national cross-sectional study. *BMC Public Health*, 21(1), 438. <https://doi.org/10.1186/s12889-021-10440-5>
9. Owens, M., Stevenson, J., Hadwin, J. A., & Norgate, R. (2012). Anxiety and depression in academic performance: An exploration of the mediating factors of worry and working memory. *School Psychology International*, 33(4), 433–449. <https://doi.org/10.1177/0143034311427433>
10. Riaz, S., Saeed, S., Tarar, M. K. ullah, Hyat, U., Khan, Z. K., & Nasreen, H. (2024). Understanding the relationship between Cognitive Failure and Psychological Burden: Role of Gender. *Bulletin of Business and Economics (BBE)*, 12(3), 803–806. <https://doi.org/10.61506/01.00128>
11. Rutter, L. A., & Brown, T. A. (2016). Psychometric properties of the generalized anxiety disorder scale-7 (GAD-7) in outpatients with anxiety and mood disorders. *Journal of Psychopathology and Behavioral Assessment*, 39(1), 140–146. <https://doi.org/10.1007/s10862-016-9571-9>
12. Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, 166(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092>
13. Tan, G. X. D., Soh, X. C., Hartanto, A., Goh, A. Y. H., & Majeed, N. M. (2023). Prevalence of anxiety in college and university students: An umbrella review. *Journal of Affective Disorders Reports*, 14, 100658. <https://doi.org/10.1016/J.JADR.2023.100658>
14. Upadhayay, N., & Guragain, S. (2014). Comparison of cognitive functions between male and female medical students: A pilot study. *Journal of Clinical and Diagnostic Research*, 8(6). BC12–BC15. <https://doi.org/10.7860/jcdr/2014/7490.4449>
15. Yang, L., Wang, N., Li, D., Zhao, X., Wen, M., Zhang, Y., & Liu, Y. (2025). Social support and anxiety, a moderated mediating model. *Scientific Reports*, 15(1), 29390. <https://doi.org/10.1038/s41598-025-14336-x>