

## Research Article

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## The Level of Exam Anxiety Among Academically Outstanding Students from Their Own Perspective: A Field Study in Higher Education

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### Abstract

**Background/purpose.** Exam anxiety can affect performance and well-being, especially among academically outstanding undergraduates. This study estimated the level of exam anxiety in two UAE universities (Ajman and Fujairah) and examined differences by gender, academic year, major, and institution.

**Methods.** A cross-sectional descriptive–analytical survey was conducted with 140 outstanding students from the Colleges of Arts and Engineering (second- and fourth-year). A validated 42-item exam-anxiety scale was administered. Assumptions for parametric testing were checked (Shapiro–Wilk for normality; Levene’s test for homogeneity). Group differences were analyzed using independent-samples t-tests.

**Results.** The overall level of exam anxiety was moderate (mean per item = 2.28). The psychological pressure of the exam dimension ranked highest, followed by psychological conflict, fear of facing the exam, and psychological/physiological symptoms. Females scored higher than males; second-year students scored higher than fourth-year students; and engineering students scored higher than arts students (all  $p$ s < .001). No significant differences were found between the universities of Ajman and Fujairah.

**Conclusion.** Findings provide a clear baseline profile of exam anxiety among high-achieving undergraduates in this context. Targeted supports for females, second-year cohorts, and engineering majors are recommended, and the scale appears suitable for ongoing monitoring in similar settings.

## 1. Introduction

Exam anxiety is common in higher education and has well-documented implications for learning, performance, and psychological well-being. Among academically outstanding undergraduates, the demands of sustaining excellence, meeting internal and external expectations, and competing for selective opportunities can heighten anxious arousal and interfere with attention and working memory during examinations. In the United Arab Emirates, Ajman University and the University of Fujairah enroll growing cohorts of outstanding students; however, empirical evidence on the scope and correlates of their exam anxiety remains limited, which constrains the design of context-appropriate academic and counseling supports.

Prior studies link exam anxiety to attentional interference, reduced working memory efficiency, and lower achievement when anxiety is excessive, whereas moderate arousal can sometimes facilitate effort (e.g., Hashmat et al., 2008; Maali, 2014; Ghbari & Abu Shaqira, 2015). Research also reports systematic differences by gender, academic stage, and disciplinary context, and highlights links with coping styles and emotional competencies (e.g., Dora, 2012; Khoshimi, 2014; Rajiah et al., 2014; Chai, Li, & Song, 2023; Ayanwale, Adegbite, & Salami, 2024). Despite these advances, high-achieving students in the UAE have received comparatively little focused attention.

Addressing this gap, the present study estimates exam anxiety levels among academically outstanding undergraduates at Ajman University and the University of Fujairah and examines whether scores differ by gender, academic year (second vs. fourth), academic major (Arts vs. Engineering), and institution. The aim is to provide a clear, context-specific baseline that can inform targeted support for subgroups at elevated risk. The study asks four questions:

- What is the overall level of exam anxiety in this cohort?
- How are the anxiety dimensions ranked?
- Do scores differ by gender, academic year, and major?
- Do scores differ between Ajman University and the University of Fujairah?

## 2. Literature Review

Exam anxiety is commonly described as a constellation of cognitive worry, emotional tension, and physiological arousal elicited by evaluative situations. In university settings, repeated high-stakes assessments and competitive grading can intensify these responses, particularly for high-achieving students who set elevated standards and face pronounced social expectations. Prior research shows that exam anxiety carries cognitive and emotional consequences—most notably interference with attention and working memory, reduced concentration, and diminished academic performance—while acknowledging that moderate arousal may sometimes facilitate preparation and effort when it remains within optimal bounds (e.g., Hashmat et al., 2008; Maali, 2014; Shaqira, 2015). Two complementary perspectives help explain these effects. Arousal–performance accounts (in the Yerkes–Dodson tradition) posit a non-linear relation whereby performance peaks at moderate arousal and declines when activation is too low or too high. Cognitive-interference models similarly argue that worry and threat appraisal divert attention from task demands toward self-focused thoughts, thereby reducing working-memory resources and impairing problem solving and recall during examinations. These frameworks clarify why some arousal can be motivating while excessive anxiety becomes maladaptive—an insight that is especially relevant for academically outstanding undergraduates operating in competitive environments. Empirical evidence documents consistent subgroup patterns. Female students frequently report higher exam anxiety than males; earlier academic stages tend to be associated with greater anxiety than later stages as students adapt to university demands; and disciplinary context matters, with science and engineering programs often

showing higher anxiety than arts programs due to intensive workloads and frequent high-stakes, quantitatively demanding assessments (Dora, 2012; Ebrahimi & Khoshimi, 2014; Rajiah et al., 2014). Recent work also highlights mechanisms that are actionable in higher education: coping-strategy profiles and facets of emotional competence—such as planning, cognitive reappraisal, and attentional control—can mitigate maladaptive anxiety and help sustain motivation under evaluative pressure (Chai et al., 2023). A synthesis focused on high-achieving undergraduates further indicates a small-to-moderate negative association between exam anxiety and performance, with variability by assessment format and discipline (Ayanwale et al., 2024). Despite this literature, localized evidence for academically outstanding students in the United Arab Emirates remains limited. Programs at Ajman University and the University of Fujairah employ dense assessment structures that may intensify exam-related pressure, yet little is known about overall and domain-specific levels of exam anxiety in these cohorts or about how anxiety differs by gender, academic year, and academic major in this context. The present study addresses this gap by estimating exam-anxiety levels among outstanding undergraduates at these two institutions and testing subgroup differences aligned with gender (male/female), academic year (second/fourth), and academic major (Arts/Engineering), thereby providing a context-specific evidence base to inform targeted academic and counseling supports.

### 3. Methodology

#### 3.1. Study Design and Setting

We used a cross-sectional descriptive–analytical design to quantify exam anxiety among academically outstanding undergraduates and to examine differences by gender, academic year, academic major, and university. Data were collected during the first semester of the 2024/2025 academic year at Ajman University and the University of Fujairah, within the Colleges of Arts and Engineering.

#### 3.2. Study Participants

The study included 140 academically outstanding students (58 males, 82 females) enrolled at Ajman University and the University of Fujairah. Participants were drawn from the second ( $n = 77$ ) and fourth ( $n = 63$ ) academic years, as well as from Arts ( $n = 62$ ) and Engineering ( $n = 78$ ) majors. Students were purposefully selected in line with the study's aims, with eligibility defined as a cumulative GPA of 3.5/4.0 or higher. Table 1 summarizes participant characteristics.

**Table 1.** Demographic Information of the Students Participating in This Study.

| Gender         | No. | Percentage% | Academic Year | No. | Percentage% |
|----------------|-----|-------------|---------------|-----|-------------|
| Male           | 58  | 41.43       | Second        | 77  | 55          |
| Female         | 82  | 58.57       | Fourth        | 63  | 45          |
| Total          | 140 | 100         | Total         | 140 | 100         |
| academic major | No. | Percentage% | University    | No. | Percentage% |
| Art            | 62  | 44.29       | Fujairah      | 65  | 46.43       |
| Engineering    | 78  | 55.71       | Ajman         | 75  | 53.57       |
| Total          | 140 | 100         | Total         | 140 | 100         |

### 3.3. The Psychometric Properties of the Test Anxiety Scale among Academically Outstanding University Students

#### Firstly: Validity

- Construct Validity

The scale was administered to a pilot sample of 24 academically outstanding undergraduates from the second and fourth years in the Colleges of Arts and Engineering at the University of Fujairah and Ajman University; these students were not included in the main study. Item–total correlations with the overall scale score ranged from .585 to .802 ( $p < .01$ ). Item–domain correlations ranged from .604 to .825 ( $p < .01$ ). Correlations between the four sub-dimensions and the total scale were .811–.849 ( $p < .01$ ). These patterns indicate good alignment of items with their domains and with the total score, supporting construct validity (see Tables 2–4).

**Table 2.** Correlation Coefficients of Each item with the Total Score of the Exam Anxiety Scale.

| #  | Correlation coefficient | #  | Correlation coefficient | #  | Correlation coefficient | #  | Correlation coefficient |
|----|-------------------------|----|-------------------------|----|-------------------------|----|-------------------------|
| 1  | .637**                  | 12 | .603**                  | 23 | .674**                  | 34 | .728**                  |
| 2  | .650**                  | 13 | .611**                  | 24 | .729**                  | 35 | .699**                  |
| 3  | .710**                  | 14 | .719**                  | 25 | .646**                  | 36 | .596**                  |
| 4  | .669**                  | 15 | .752**                  | 26 | .800**                  | 37 | .666**                  |
| 5  | .600**                  | 16 | .631**                  | 27 | .680**                  | 38 | .802**                  |
| 6  | .728**                  | 17 | .602**                  | 28 | .748**                  | 39 | .695**                  |
| 7  | .599**                  | 18 | .585**                  | 29 | .703**                  | 40 | .715**                  |
| 8  | .721**                  | 19 | .694**                  | 30 | .591**                  | 41 | .707**                  |
| 9  | .672**                  | 20 | .788**                  | 31 | .608**                  | 42 | .622**                  |
| 10 | .730**                  | 21 | .655**                  | 32 | .755**                  |    |                         |
| 11 | .711**                  | 22 | .690**                  | 33 | .594**                  |    |                         |

It is noticed from the previous table that the values of the item-total correlation coefficients for the overall score of the scale ranged between (0.585–0.802), which are good and statistically significant correlation coefficients at the significance level (0.01), indicating that the scale items are consistent with the total score of the scale, and gives an indication of the construct validity of the scale.

**Table 3.** Correlation Coefficients of Each item with the Total Score of the Dimension to Which it Belongs.

| Fear of facing the exam |                         | Psychological pressure of the exam |                         | Psychological conflict before, during, and after the exam |                         | Psychological and physiological disorders associated with exam anxiety |                         |
|-------------------------|-------------------------|------------------------------------|-------------------------|-----------------------------------------------------------|-------------------------|------------------------------------------------------------------------|-------------------------|
| #                       | Correlation coefficient | #                                  | Correlation coefficient | #                                                         | Correlation coefficient | #                                                                      | Correlation coefficient |
| 1                       | .654**                  | 11                                 | .725**                  | 3                                                         | .721**                  | 38                                                                     | .825**                  |
| 2                       | .672**                  | 12                                 | .616**                  | 23                                                        | .688**                  | 39                                                                     | .710**                  |
| 4                       | .682**                  | 13                                 | .627**                  | 24                                                        | .739**                  | 40                                                                     | .726**                  |
| 5                       | .617**                  | 14                                 | .733**                  | 25                                                        | .674**                  | 41                                                                     | .715**                  |
| 6                       | .744**                  | 15                                 | .760**                  | 26                                                        | .811**                  | 42                                                                     | .642**                  |
| 7                       | .616**                  | 16                                 | .642**                  | 27                                                        | .693**                  |                                                                        |                         |
| 8                       | .739**                  | 17                                 | .618**                  | 28                                                        | .769**                  |                                                                        |                         |
| 9                       | .696**                  | 18                                 | .604**                  | 29                                                        | .714**                  |                                                                        |                         |
| 10                      | .747**                  | 19                                 | .699**                  | 30                                                        | .606**                  |                                                                        |                         |
|                         |                         | 20                                 | .796**                  | 31                                                        | .629**                  |                                                                        |                         |
|                         |                         | 21                                 | .684**                  | 32                                                        | .775**                  |                                                                        |                         |
|                         |                         | 22                                 | .731**                  | 33                                                        | .608**                  |                                                                        |                         |
|                         |                         |                                    |                         | 34                                                        | .733**                  |                                                                        |                         |
|                         |                         |                                    |                         | 35                                                        | .719**                  |                                                                        |                         |
|                         |                         |                                    |                         | 36                                                        | .610**                  |                                                                        |                         |
|                         |                         |                                    |                         | 37                                                        | .683**                  |                                                                        |                         |

It is noticed from the previous table that the values of the correlation coefficients of each item with the total score of the dimension to which it belongs ranged between (0.604–0.825), which are good and statistically significant correlation coefficients at the significance level (0.01), indicating that the scale items are consistent with the dimension to which it belongs, and gives an indication of the construct validity of the scale.

**Table 4.** Correlation Coefficients of the Sub-Dimensions With the Total Score of the Exam Anxiety Scale

| Sub-dimensions                                                         | total score |
|------------------------------------------------------------------------|-------------|
| Fear of facing the exam                                                | .811**      |
| Psychological pressure of the exam                                     | .824**      |
| Psychological conflict before, during, and after the exam              | .849**      |
| Psychological and physiological disorders associated with exam anxiety | .829**      |

It is noticed from the previous table that the values of the correlation coefficients of the sub-dimensions with the total score of the scale ranged between (0.811–0.849), which are good and statistically significant correlation coefficients at the significance level (0.01), indicating that the sub-dimensions of the scale are consistent with the total score of the scale, and gives an indication of the construct validity of the scale.

- The criterion-related validity indicated by extreme groups (discriminative validity):

The researchers applied the scale to a sample of 24 academically outstanding university students, then calculated and arranged their scores in descending order. The highest (25%) and the lowest (25%) values were selected, and then the means and standard deviations of the sample members' scores on the sub-dimensions and the total score of the scale were calculated. The Mann-Whitney test was used to identify the significance of the differences between the mean ranks of the scores of the two groups, as shown in the following table:

**Table 5.** The Statistical Significance of the Differences between the Mean Ranks of the Scores of the Upper and Lower Groups on the Exam Anxiety Scale

| Sub-dimensions                                                         | # | Group | Rank Average | Rank Total | Z -Value | P    | Decision    |
|------------------------------------------------------------------------|---|-------|--------------|------------|----------|------|-------------|
| Fear of facing the exam                                                | 6 | High  | 9.50         | 57.00      | 2.929    | .003 | Significant |
|                                                                        | 6 | Low   | 3.50         | 21.00      |          |      |             |
| Psychological pressure of the exam                                     | 6 | High  | 9.50         | 57.00      | 2.918    | .004 | Significant |
|                                                                        | 6 | Low   | 3.50         | 21.00      |          |      |             |
| Psychological conflict before, during, and after the exam              | 6 | High  | 9.50         | 57.00      | 2.892    | .004 | Significant |
|                                                                        | 6 | Low   | 3.50         | 21.00      |          |      |             |
| Psychological and physiological disorders associated with exam anxiety | 6 | High  | 9.50         | 57.00      | 2.950    | .003 | Significant |
|                                                                        | 6 | Low   | 3.50         | 21.00      |          |      |             |
| total score                                                            | 6 | High  | 9.50         | 57.00      | 2.882    | .004 | Significant |
|                                                                        | 6 | Low   | 3.50         | 21.00      |          |      |             |

It is noted from the previous Table (5) that the values are statistically significant, indicating the presence of statistically significant differences between the mean ranks of the scores of the upper

and lower groups, and these differences are in favor of the upper group, which indicates the discriminant validity of the exam anxiety scale.

## Second: Reliability

The researchers verified the reliability of the scale according to the following two methods:

1. Reliability using the Cronbach's Alpha formula: The Cronbach's Alpha formula was applied to the psychometric sample's scores on the sub-dimensions and the total score of the scale, yielding reliability coefficient values ranging from 0.822 to 0.937, indicating a high degree of reliability for the scale.

2. Reliability using the split-half method: The split-half reliability coefficient was calculated for the sub-dimensions and the total score of the scale, then the reliability coefficient was corrected using the Spearman-Brown formula, and the reliability coefficient values using this method ranged between 0.834 and 0.940, which are high reliability coefficients indicating the scale is characterized by reliability according to the split-half method. Table 6 below shows the resulting reliability coefficients:

**Table 6.** Reliability Coefficients of the Scale Using the (Cronbach's Alpha and split-half) Methods

| Sub-dimensions                                                         | #  | Cronbach's Alpha | split-half |
|------------------------------------------------------------------------|----|------------------|------------|
| Fear of facing the exam                                                | 9  | .833             | .850       |
| Psychological pressure of the exam                                     | 12 | .872             | .879       |
| Psychological conflict before, during, and after the exam              | 16 | .901             | .911       |
| Psychological and physiological disorders associated with exam anxiety | 5  | .822             | .834       |
| total score                                                            | 42 | .937             | .940       |

## 3.4. Statistical Analysis

Analyses were conducted in IBM SPSS Statistics (Version 30). Assumptions for parametric testing were examined prior to inference: normality of domain and total scores using Shapiro–Wilk (with Q–Q plots and skewness/kurtosis) and homogeneity of variance using Levene’s test. Because all grouping factors had two levels (gender, academic year, academic major, university), between-group differences were tested using independent-samples t tests. When Levene’s test was significant, we used Welch’s t with adjusted degrees of freedom. When normality was violated, we used the Mann–Whitney U test and reported the corresponding effect size. For each comparison, we reported means and standard deviations (or medians and IQRs for non-parametric tests), the test statistic and two-tailed p-value, 95% confidence intervals, and effect sizes (Cohen’s d for t tests; rank-biserial r for Mann–Whitney). The significance threshold was set at  $\alpha = 0.05$ .

## 4. Results

The results of the psychometric study of the exam anxiety scale showed that it is characterized by good indicators of validity and reliability, which make its use possible in the local environment according to the limits of the current research sample, represented by academically outstanding second- and fourth-year students in the Colleges of (Media and Engineering) at the Universities of (Fujairah and Ajman).

Study Question: What is the level of exam anxiety among academically outstanding university students?

To answer this question, each level of exam anxiety among academically outstanding university students – the individuals in the research sample – was given graded values on the exam anxiety scale according to the three-point Likert scale, and the value categories of the arithmetic mean for each level were determined using the following formula:

$$\frac{\text{Number of Likert levels}}{\text{Number of levels}} = \frac{3 - 1}{3} = 0.66$$

And based on the rule of mathematical rounding, the averages of the scores can be handled as follows

**Table 7.** The Level of Exam Anxiety Among the Research Sample Individuals and the Corresponding Values for it

| level of exam anxiety | Values given for each level | Mean values categories for each level |
|-----------------------|-----------------------------|---------------------------------------|
| High                  | 3                           | 2.33 - 3                              |
| intermediate          | 2                           | 1.67 – 2.32                           |
| Low                   | 1                           | 1 – 1.66                              |

And to determine the level of exam anxiety, the arithmetic means and standard deviations of the scores of the research sample individuals on the sub-dimensions and the total score of the exam anxiety scale were calculated as shown in the Table.8 below:

**Table 8.** Descriptive Statistics of the Scores of the Research Sample Individuals on the Exam Anxiety Scale.

| Sub-dimensions                                                         | #  | Mean  | Ordinal arithmetic mean | Standard deviation | level        | Rank |
|------------------------------------------------------------------------|----|-------|-------------------------|--------------------|--------------|------|
| Fear of facing the exam                                                | 9  | 18.74 | 2.08                    | .374               | intermediate | 3    |
| Psychological pressure of the exam                                     | 12 | 30.32 | 2.53                    | .169               | High         | 1    |
| Psychological conflict before, during, and after the exam              | 16 | 36.66 | 2.29                    | .206               | intermediate | 2    |
| Psychological and physiological disorders associated with exam anxiety | 5  | 10.03 | 2.01                    | .472               | intermediate | 4    |
| Total score                                                            | 42 | 95.75 | 2.28                    | .257               | intermediate |      |

It is noted from the previous table that the ordinal arithmetic means of the scores of the research sample individuals on the sub-dimensions and the total score of the test anxiety scale came according to the following order: the dimension (psychological pressure of the exam) with an arithmetic mean (2.53), which is at a (high) level, followed by the dimension (psychological conflict accompanying

before, during, and after the exam) with an arithmetic mean (2.29), which is at a (moderate) level, followed by the dimension (fear of facing the exam) with an arithmetic mean (2.08), which is at a (moderate) level, followed by the dimension (psychological and physiological disturbances accompanying test anxiety) with an arithmetic mean (2.01), which is at a (moderate) level. The value of the arithmetic mean of the scores of the research sample individuals on the total score of the test anxiety scale reached 2.28, which is at a (moderate) level. The number of individuals and the percentages in each level of test anxiety were also identified for the sub-dimensions and the total score of the scale, as Table 9 shows:

**Table 9.** The Number of Individuals and Percentages Based on Test Anxiety Levels.

| Sub-dimensions                                                         | Valus       | level of exam anxiety |              |        |
|------------------------------------------------------------------------|-------------|-----------------------|--------------|--------|
|                                                                        |             | Low                   | intermediate | High   |
| Fear of facing the exam                                                | #           | 25                    | 72           | 43     |
|                                                                        | Percentage% | %17.86                | %51.43       | %30.71 |
| Psychological pressure of the exam                                     | #           | 8                     | 55           | 77     |
|                                                                        | Percentage% | %5.71                 | %39.29       | %55    |
| Psychological conflict before, during and after the exam               | #           | 5                     | 70           | 65     |
|                                                                        | Percentage% | %3.57                 | %50          | %46.43 |
| Psychological and physiological disorders associated with exam anxiety | #           | 32                    | 59           | 49     |
|                                                                        | Percentage% | %22.86                | %42.14       | %35    |
| total score                                                            | #           | 17                    | 68           | 55     |
|                                                                        | Percentage% | %12.14                | %48.57       | %39.29 |
| total score                                                            | #           | 0                     | 55           | 45     |
|                                                                        | Percentage% | %0                    | %55          | %45    |

These findings suggest that the level of exam anxiety among outstanding university students is of a moderate type, positively affecting their performance in exams and even motivating them to improve their performance. It also leads to facilitating success and the ability to learn, sharpening ideas, increasing focus and attention, and the ability to perform academic tasks efficiently and deal with them properly. Also, exam anxiety at its natural (moderate) level does not negatively affect the process of storing information and retrieving it when needed.

#### Results of the Research, Hypotheses, and Interpretation:

1. There are no statistically significant differences between the mean scores of the research sample individuals on the exam anxiety scale according to the gender variable:
2. To verify the validity of the hypothesis, the arithmetic means and standard deviations were extracted, and the (T-Test) for independent samples was used to indicate the significance of differences between the means. The results came as shown in the following table:

**Table 10.** Results of the T-Test for the Significance of the Differences between the Mean Scores of the Research Sample Individuals on the Exam Anxiety Scale According to the Gender Variable

| Sub-dimensions                                                         | Gender | #  | Mean | Standard deviation | t     | df  | p    | Decision    |
|------------------------------------------------------------------------|--------|----|------|--------------------|-------|-----|------|-------------|
| Fear of facing the exam                                                | Male   | 58 | 1.81 | .415               | 4.302 | 138 | .000 | Significant |
|                                                                        | Female | 82 | 2.20 | .291               |       |     |      |             |
| Psychological pressure of the exam                                     | Male   | 58 | 2.41 | .220               | 4.059 | 138 | .000 | Significant |
|                                                                        | Female | 82 | 2.58 | .114               |       |     |      |             |
| Psychological conflict before, during, and after the exam              | Male   | 58 | 2.14 | .227               | 4.252 | 138 | .000 | Significant |
|                                                                        | Female | 82 | 2.35 | .161               |       |     |      |             |
| Psychological and physiological disorders associated with exam anxiety | Male   | 58 | 1.68 | .407               | 3.912 | 138 | .000 | Significant |
|                                                                        | Female | 82 | 2.14 | .434               |       |     |      |             |
| Total score                                                            | Male   | 58 | 2.09 | .284               | 4.281 | 138 | .000 | Significant |
|                                                                        | Female | 82 | 2.36 | .201               |       |     |      |             |

It is evident from Table (10) that the value of (t) has reached in sequence for each dimension of the scale and the total score: (4.602, 4.059, 4.252, 3.912, 4.281) at probability values (0.000, 0.000, 0.000, 0.000, 0.000), which are less than the significance level (0.05) adopted in the research, and therefore: The null hypothesis is rejected and the alternative is accepted; that is: there are statistically significant differences between the mean scores of the individuals in the research sample on the exam anxiety scale according to the gender variable, and the differences are in favor of females with the higher mean. There are statistically significant differences in the mean exam anxiety score according to the gender variable for the entire sample. Findings revealed a higher mean exam anxiety score among females, which indicates that anxiety among females is higher. Researchers explain this due to their biological nature and the ability of females to express their emotions on the other hand, and that the differences between the genders in anxiety remain, and that these differences are due to biological foundations specific to women and not to men. Thus, females remain more anxious than males, and this is due to their biological composition, which differs from that of males. Nevertheless, we must not be drawn behind the biological assumption in explaining the differences between the genders in anxiety, as the social factors in explaining the differences between the genders in anxiety cannot be neglected. It is noticeable that, despite the differences between cultures in terms of degree of advancement or the level of freedom granted to women, the society in most cultures follows methods for raising girls that differ from those used for raising boys.

3. There are no statistically significant differences between the means of the scores of the research sample individuals on the exam anxiety scale according to the academic year variable:

To verify the validity of the hypothesis, arithmetic means and standard deviations were calculated, and the T-test for independent samples was used to determine the significance of the differences between the means. The results came as shown in the following table:

**Table 11.** Results of the (T-Test) to Indicate the Significance of the Differences between the Means of the Scores of the Research Sample Individuals on the Exam Anxiety Scale According to the Academic Year Variable.

| Sub-dimensions                                                         | Gender | #  | Mean | Standard deviation | t     | df  | p    | Decision    |
|------------------------------------------------------------------------|--------|----|------|--------------------|-------|-----|------|-------------|
| Fear of facing the exam                                                | Second | 77 | 2.32 | .238               | 5.007 | 138 | .000 | Significant |
|                                                                        | Forth  | 63 | 1.92 | .365               |       |     |      |             |
| Psychological pressure of the exam                                     | Second | 77 | 2.61 | .086               | 3.699 | 138 | .000 | Significant |
|                                                                        | Forth  | 63 | 2.47 | .188               |       |     |      |             |
| Psychological conflict before, during, and after the exam              | Second | 77 | 2.42 | .135               | 5.180 | 138 | .000 | Significant |
|                                                                        | Forth  | 63 | 2.20 | .196               |       |     |      |             |
| Psychological and physiological disorders associated with exam anxiety | Second | 77 | 2.35 | .358               | 6.206 | 138 | .000 | Significant |
|                                                                        | Forth  | 63 | 1.76 | .386               |       |     |      |             |
| Total score                                                            | Second | 77 | 2.45 | .163               | 5.185 | 138 | .000 | Significant |
|                                                                        | Forth  | 63 | 2.16 | .248               |       |     |      |             |

It is clear from Table (11) that the value of (t) has reached, respectively, for each dimension of the scale and the total score: (5.007, 3.699, 5.180, 6.206, 5.185) at the probability values (0.000, 0.000, 0.000, 0.000, 0.000), which are smaller than the significance level (0.05) adopted in the research. Accordingly:

The null hypothesis is rejected, and the alternative is accepted; that is, there are statistically significant differences between the mean scores of the research sample individuals on the exam anxiety scale according to the academic year variable, and the differences favor second-year students, who have a higher arithmetic mean.

The null hypothesis is rejected, and the alternative is accepted; that is, there are statistically significant differences between the mean scores of the research sample individuals on the exam anxiety scale according to the academic year variable, and the differences favor second-year students, who have a higher arithmetic mean. Second-year students face exam anxiety due to the changes they encounter in the academic and social environment, which is new to them compared to the environment they used to belong to. It is also attributed to the student's previous academic background, which plays a role in the level of their anxiety. Students with limited experience in university education may have greater anxiety due to their lack of full knowledge about the nature of university exams and their general requirements.

4. There are no statistically significant differences between the mean scores of the research sample individuals on the exam anxiety scale according to the academic major variable (Arts, Engineering):

To verify the validity of the hypothesis, arithmetic means and standard deviations were extracted, and the t-test for independent samples was used to determine the significance of the differences between the means. The results came as shown in the following table:

**Table 12.** Results of the t-Test) for the Significance of the Differences between the Mean Scores of the Research Sample Individuals on the Exam Anxiety Scale According to the Academic Major Variable.

| Sub-dimensions                                                         | Gender      | #  | Mean | Standard deviation | t     | df  | p    | Decision    |
|------------------------------------------------------------------------|-------------|----|------|--------------------|-------|-----|------|-------------|
| Fear of facing the exam                                                | Arts        | 62 | 1.86 | .327               | 5.310 | 138 | .000 | Significant |
|                                                                        | Engineering | 78 | 2.27 | .300               |       |     |      |             |
| Psychological pressure of the exam                                     | Arts        | 62 | 2.44 | .165               | 4.224 | 138 | .000 | Significant |
|                                                                        | Engineering | 78 | 2.60 | .137               |       |     |      |             |
| Psychological conflict before, during, and after the exam              | Arts        | 62 | 2.17 | .176               | 5.314 | 138 | .000 | Significant |
|                                                                        | Engineering | 78 | 2.40 | .169               |       |     |      |             |
| Psychological and physiological disorders associated with exam anxiety | Arts        | 62 | 1.70 | .343               | 6.041 | 138 | .000 | Significant |
|                                                                        | Engineering | 78 | 2.27 | .406               |       |     |      |             |
| Total score                                                            | Arts        | 62 | 2.12 | .221               | 5.415 | 138 | .000 | Significant |
|                                                                        | Engineering | 78 | 2.41 | .208               |       |     |      |             |

It is evident from Table (12) that the value of (t) has reached, respectively, for each dimension of the scale and the total score: (5.310, 4.224, 5.314, 6.041, 5.415) at the probability values (0.000, 0.000, 0.000, 0.000, 0.000), which are smaller than the significance level (0.05) adopted in the research, and therefore: The null hypothesis is rejected and the alternative is accepted; that is: there are statistically significant differences between the means of the scores of the research sample individuals on the exam anxiety scale according to the variable of academic major, and the differences are in favor of engineering students who have the higher arithmetic mean. This can be attributed to the fact that students of humanities academic majors possess good abilities in interaction and communication with members of society, thus being more capable of integrating into university life and enjoying university life, as these academic majors carry simpler burdens on the student compared to scientific academic majors that require students to be diligent, hardworking, read for long hours, and search, investigate, and inquire about information intensively, which affects their social relationships, the rate of forming friendships, and their family relationships with parents and siblings.

5. There are no statistically significant differences between the arithmetic means of the scores of the research sample individuals on the test anxiety scale according to the Student university variable (Fujairah, Ajman):

To verify the validity of the hypothesis, the arithmetic means and standard deviations were extracted, and the (T-Test) for independent samples was used to indicate the significance of the differences between the means. The results came as shown in the following table:

**Table 13.** Results of the (T-Test) to Indicate the Significance of the Differences between the Arithmetic Means of the Scores of the Research Sample Individuals on the Test Anxiety Scale According to the Student University Variable.

| sub-dimensions                                                         | Gender   | #  | Mean | Standard deviation | t    | df  | p    | Decision        |
|------------------------------------------------------------------------|----------|----|------|--------------------|------|-----|------|-----------------|
| Fear of facing the exam                                                | Fujairah | 65 | 2.10 | .371               | .562 | 138 | .576 | Not Significant |
|                                                                        | Ajman    | 75 | 2.05 | .384               |      |     |      |                 |
| Psychological pressure of the exam                                     | Fujairah | 65 | 2.54 | .168               | .509 | 138 | .613 | Not Significant |
|                                                                        | Ajman    | 75 | 2.51 | .175               |      |     |      |                 |
| Psychological conflict before, during, and after the exam              | Fujairah | 65 | 2.30 | .204               | .659 | 138 | .512 | Not Significant |
|                                                                        | Ajman    | 75 | 2.27 | .211               |      |     |      |                 |
| Psychological and physiological disorders associated with exam anxiety | Fujairah | 65 | 2.03 | .478               | .405 | 138 | .687 | Not Significant |
|                                                                        | Ajman    | 75 | 1.98 | .470               |      |     |      |                 |
| Total score                                                            | Fujairah | 65 | 2.29 | .256               | .560 | 138 | .577 | Not Significant |
|                                                                        | Ajman    | 75 | 2.26 | .263               |      |     |      |                 |

It is clear from Table (13) that the value of (t) has sequentially reached, for each dimension of the scale and the total score: (0.562, 0.509, 0.659, 0.405, 0.560) at probability values (0.576, 0.613, 0.512, 0.687, 0.577), which are greater than the significance level (0.05) adopted in the research, and therefore: The null hypothesis is accepted; that is, there are no statistically significant differences between the mean scores of the research sample individuals on the test anxiety scale according to the university variable. This result can be interpreted by the orientation adopted by the students through which they aspire to reach their goals and how they deal with various situations and prepare them to reach these goals. This result can also be interpreted by the similarity of the students' academic environment and the nature of the educational strategies followed at the university and shared among the students.

## 5. Discussion

This study examined exam-anxiety levels among academically outstanding undergraduates in Ajman and Fujairah and explored differences by gender, academic year, and major. The overall level of exam anxiety was moderate, with the “psychological pressure of the exam” domain emerging highest. Interpreted through arousal–performance accounts, this pattern is consistent with the idea that moderate arousal can mobilize effort and focus, whereas elevated evaluative pressure risks tipping students into maladaptive anxiety when stakes and expectations are high. Cognitive-interference perspectives offer a complementary explanation: worry and threat appraisal during evaluative situations can draw attention away from task demands, reduce working-memory efficiency, and impair strategic problem solving—effects that are particularly consequential for high achievers operating in competitive academic environments.

Gender differences were robust, with female students reporting higher anxiety across domains. This aligns with a substantial body of work documenting higher self-reported test anxiety among

women in university samples, often attributed to differential socialization, appraisal styles, and emotion-regulation patterns (e.g., Dora, 2012; Rajiah et al., 2014). Studies linking anxiety to coping profiles and emotional competencies also provide a plausible mechanism: less frequent use of reappraisal and planning is associated with higher anxiety, whereas skill-focused interventions can attenuate worry and intrusive thoughts (Ebrahimi & Khoshimi, 2014; Chai, Li, & Song, 2023). At the same time, the size of the gender effect varies across contexts, suggesting that program structure, assessment stakes, and feedback practices may amplify or attenuate these differences.

Academic stage mattered as well: second-year students exhibited higher anxiety than fourth-year peers. A reasonable interpretation is that adaptation demands and unfamiliar assessment formats early in the degree program heighten evaluative pressure; with experience, students acquire routines and coping strategies that normalize assessment and reduce threat appraisal. This trajectory is consistent with research emphasizing the role of transition stress and the protective value of study-skills, planning, and attentional control for sustaining motivation over time.

Disciplinary contrasts were clear, with engineering students reporting higher anxiety than arts students. The intensive workload, frequent high-stakes examinations, and quantitative problem-solving typical of many scientific and engineering programs can increase anticipatory pressure and narrow cognitive bandwidth during testing. This finding aligns with evidence that anxiety–performance relations are sensitive to assessment format and discipline; contexts that demand rapid, exact calculations under time pressure are especially susceptible to interference effects among otherwise capable students (Ayanwale, Adegbite, & Salami, 2024).

By contrast, no significant differences emerged between the two universities. Convergence at the institutional level suggests broadly similar academic environments and assessment practices for outstanding students across the sampled sites. This stability is useful from a policy perspective, as it indicates that interventions designed around the present findings—such as gender-responsive supports, early-year transition programming, and discipline-tailored strategies—are likely to be relevant across comparable units.

Taken together, the results are coherent with cognitive-interference and arousal–performance frameworks and generally accord with prior empirical work linking exam anxiety to gender, stage, and discipline while showing that overall levels can remain moderate in high-achieving cohorts (e.g., Hashmat et al., 2008; Ghbari & Abu Shaqira, 2015; Chai et al., 2023; Ayanwale et al., 2024; Alsalhi, Al-Qatawneh, Eltahir, & Aqel, 2021). Where the present findings diverge from specific studies in the region, differences may reflect local assessment structures, course demands, and the achievement profile of the sample. Practically, the evidence supports implementing skills-based workshops that strengthen planning, time management, and cognitive reappraisal; structured transition supports for earlier-year students; and discipline-sensitive test-taking preparation in engineering programs.

Several limitations should temper interpretation. Purposeful recruitment limits generalizability beyond similar programs and institutions; reliance on self-report raises the possibility of response bias; and the cross-sectional design precludes causal inference. Nevertheless, the study contributes validated, context-specific evidence for a high-achieving UAE cohort. Future research can extend this work using longitudinal designs to track trajectories across academic stages, evaluate targeted interventions, and include additional disciplines and institutions to refine external validity.

## 6. Implications of the Study

The findings of this study hold several important implications for educational practice, psychological counseling, and future research. First, the identification of moderate levels of exam anxiety among academically outstanding university students underscores the necessity of early detection and targeted intervention to prevent excessive anxiety that may hinder optimal academic

performance. Educational institutions should integrate evidence-based anxiety management programs into student support services, particularly focusing on high-achieving students who may experience heightened pressure due to personal, familial, or societal expectations. Second, the observed differences in anxiety levels across gender, academic year, and academic major highlight the importance of adopting tailored approaches that consider individual and contextual factors when designing counseling and intervention programs. Third, the validated exam anxiety scale developed through this study provides a reliable and context-specific tool for future diagnostic, evaluative, and research purposes within similar academic populations. Ultimately, these findings underscore the importance of universities and policymakers in creating supportive academic environments that strike a balance between academic rigor and psychological well-being, thereby enabling outstanding students to fully realize their academic potential while maintaining emotional resilience. Future research may expand upon these findings by investigating longitudinal effects, incorporating additional psychological variables, or assessing the effectiveness of interventions in diverse educational contexts.

## 7. Limitations of the Study

Despite the valuable insights gained from this study, certain limitations should be acknowledged. First, the study sample was limited to academically outstanding students from a select number of universities within the United Arab Emirates, which may restrict the generalizability of the findings to other academic or cultural contexts. Second, the study relied primarily on self-reported data, which may be influenced by social desirability bias or subjective interpretations of anxiety levels. Third, the cross-sectional design of the research provides a snapshot of exam anxiety at a specific point in time, limiting the ability to assess causal relationships or changes in anxiety levels over time. Finally, while the exam anxiety scale demonstrated strong psychometric properties, it was developed and validated within the study's specific sample; thus, additional validation is recommended for broader application across diverse student populations.

## 8. Conclusion

This study evaluated exam anxiety among academically outstanding undergraduates at two universities in the UAE and addressed four key questions. (RQ1) Overall, exam anxiety was found to be moderate. (RQ2) The dimensions ranked as follows: psychological pressure (highest), psychological conflict, fear of facing the exam, and psychological/physiological symptoms. (RQ3) Significant differences were found by gender (females higher), academic year (second-year higher than fourth-year), and major (engineering higher than arts). (RQ4) No significant differences emerged between Ajman and Fujairah universities. These findings provide a clear baseline profile for high-achieving cohorts in this context and confirm that the employed scale is suitable for monitoring exam anxiety in comparable settings.

## 9. Suggestion

Based on the findings and limitations of this study, several recommendations are proposed for future research. Longitudinal studies are encouraged to examine how exam anxiety evolves throughout students' academic journeys and to explore the long-term impact of anxiety management interventions. Future research may also expand the sample to include students from various academic disciplines, universities, and cultural backgrounds to enhance generalizability. Additionally, incorporating qualitative methods, such as interviews or focus groups, can provide deeper insights into the personal experiences and coping strategies of academically outstanding students who face exam anxiety. Finally, experimental studies evaluating the effectiveness of specific intervention programs aimed at reducing exam anxiety would offer practical guidance for educational institutions and mental health professionals.

## Declarations

**Author Contributions.** A. Alqawasmi: Literature review, conceptualization. N. Alsalhi: methodology, data analysis, B. Alakashee: review-editing and writing, S. Alqatawneh: original manuscript preparation, A. Al-Barakat: review-editing and writing, S. Al Karasneh: original manuscript preparation, All authors have read and approved the published article's final version.

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**Data Availability Statement.** (The corresponding author's data supporting this study's findings are available upon request.)

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