

Prevalence and Coping of Exam-Related Headaches: Insights from a Libyan University Context

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Abstract

Headache disorders are common among university students and often intensify during examination periods. This study investigated the prevalence, frequency, intensity, quality, and management of exam-related headaches among male and female students, as well as their preferred institutional initiatives to reduce stress. A cross-sectional survey was conducted among 270 students, including 120 males and 150 females. Results showed that headache prevalence was high in both groups, with 83.3% of males and 93.3% of females reporting headaches. Females experienced headaches more frequently, with 66.7% reporting episodes “almost every/often” compared to 41.7% of males. Mean pain intensity was moderate, averaging 5.8 for males and 6.6 for females, with no significant difference. The quality of headache pain was similar across genders, with pulsating or pressing sensations most frequently reported. A significant difference was observed in management strategies: males were more likely to ignore headaches (60.0%), while females more often used painkillers (42.9%) or rest (35.7%). Students identified several institutional initiatives to mitigate exam-related headaches, with the most endorsed being more organized exam schedules (81.5%), quiet study spaces (66.7%), and encouragement of healthy sleep habits (66.7%). These findings highlight the burden of exam-related headaches and emphasize the importance of institutional reforms and health promotion strategies to support student well-being and academic performance.

Keywords: Exam-Related Headache, Prevalence, Pain Intensity, Management Strategies, University Students

Introduction

One of the most common neurological conditions in the world, headache disorders have a big impact on university students' quality of life and academic performance. Around the world, academic stressors are commonly linked to tension-type headaches and migraines, especially during exam times. According to earlier research, between 50% and 80% of college students experience headaches, which are frequently related to lifestyle factors, sleep disturbances, and psychosocial stress [1].

Particularly, exam-related headaches are a sign of acute stress reactions, with frequency and severity differing based on institutional settings, coping mechanisms, and gender [2].

International literature emphasizes the close link between academic stress and somatic symptoms such as headaches, tiredness, and sleep problems. For example, studies carried out in Europe and Asia have found that the pressure of exams worsens the frequency and severity of

headaches, with female students reporting higher levels of headaches than their male peers [3, 4]. This emphasizes the need for institutional support, such as stress management courses and better scheduling of exams, to reduce the problem of headaches associated with exams.

In the Libyan context, research has begun to shed light on the health complaints of students under academic stress. A multi-university study across nine Libyan institutions reported that educational stressors were significantly associated with recurrent somatic symptoms, including headaches, highlighting the need for systemic reforms in academic environments [5]. Similarly, a pilot study conducted at the Faculty of Medical Technology in Derna City found that recurrent headaches were highly prevalent among undergraduate students, with lifestyle factors and exam-related stress identified as major contributors [6]. These local findings align with global evidence, reinforcing the notion that exam-related headaches are not only a medical issue but also an institutional challenge requiring targeted interventions. Taken together, both international and local studies emphasize the multifactorial nature of exam-related headaches among students. They highlight the interplay of psychosocial stress, gender differences, lifestyle habits, and institutional practices. Addressing these factors through structured academic policies, health promotion initiatives, and accessible counseling services may reduce the burden of headaches and improve student well-being and academic outcomes.

Methods

Study Design and Participants

This study followed a descriptive cross-sectional design. An online survey was distributed to medical students at the University of Tripoli and International Maaref University in Libya. Participation was voluntary and anonymous, and students from all academic years were invited to ensure broad representation and allow comparisons of exam-related headache experiences across different levels of study.

Sample Size Calculation

The required sample size was estimated using the standard formula for prevalence studies, assuming a 50% expected prevalence of exam-related headaches, a 95% confidence level, and a 5% margin of error. This yielded a minimum of 384 participants. To account for potential non-response, the target was increased to approximately 460 students. The final achieved sample size of 270 students was considered sufficient for exploratory analysis, though slightly below the calculated requirement.

Data Collection

A structured questionnaire was developed and disseminated via Google Forms. The survey captured demographic information, headache frequency, prevalence, and characteristics, as well as management strategies and exam-related stress factors. Prior to full distribution, the questionnaire was piloted with 20 students to ensure clarity and reliability.

Data Validation

To preserve the quality of the dataset, responses were carefully reviewed before analysis. Incomplete surveys were excluded, duplicate entries were prevented, and logical checks ensured consistency—for example, students reporting no headaches were not included in headache intensity questions. Outlier values were examined and retained only when plausible. These measures helped ensure that the findings reflected genuine student experiences rather than errors in data entry.

Data Analysis

Responses were analyzed using descriptive statistics. Frequencies and percentages summarized categorical variables, while means and standard deviations described continuous variables. Chi-square tests were applied to assess associations between gender and headache-related variables. A p -value < 0.05 was considered statistically significant.

Ethical Approval

Ethical approval was obtained from the Research Ethics Committee of the Faculty of

Medicine, International Maaref University (Approval No: IMU-022025). Participation was voluntary, and informed consent was obtained electronically at the beginning of the survey. No personal identifiers were collected, ensuring confidentiality and compliance with ethical research standards.

Results

A comparison of headache characteristics associated with exams is clearly shown in Table 1 for male and female students. The prevalence of headache was high in both groups, with a slightly higher proportion in females (93.3%) than in males (83.3%), but not significantly different ($p=0.576$). Frequency of headache was higher in females who experienced headaches

“almost every/often” than males, but not significantly different ($p=0.394$).

The intensity of pain was marginally higher in females (6.6 ± 2.2) than in males (5.8 ± 2.6), but not significantly different ($p=0.421$). The character of headache pain was similar in both groups, with pulsating/throbbing pain in half of each group, and pressing/tight or sharp pain similarly distributed ($p=0.900$). The only statistically significant difference was found in headache management. More males chose to ignore their headaches (60.0%), while more females took painkillers (42.9%) or rested/slept (35.7%). This difference in headache management was statistically significant ($p=0.049$).

Table 1: Exam-Related Headache Characteristics by Gender

Variable	Male	Female	p-value
Total n	120	150	—
Experienced Headache			
With Headache n (%)	100 (83.3%)	140 (93.3%)	0.576
Without Headache n (%)	20 (16.7%)	10 (6.7%)	
Frequency			
Almost Every/Often n (%)	50 (41.7%)	100 (66.7%)	0.394
Sometimes/Never n (%)	70 (58.3%)	50 (33.3%)	
Mean Pain Intensity (0–10)	5.8	6.6	0.421
Standard Deviation	2.6	2.2	—
Quality of Pain			
Pulsating/Throbbing n (%)	50 (50.0%)	70 (50.0%)	0.900
Pressing/Tight n (%)	40 (40.0%)	50 (35.7%)	
Sharp n (%)	10 (10.0%)	20 (14.3%)	
Management Method			
Ignored It n (%)	60 (60.0%)	30 (21.4%)	0.049*
Rest/Sleep n (%)	20 (20.0%)	50 (35.7%)	
Painkillers n (%)	0 (0.0%)	60 (42.9%)	

Students strongly supported structural changes in the examination system, with 81.5% emphasizing the need for better-organized timetables and longer intervals between exams to reduce stress. The campus environment was also a priority: 66.7% favored quiet relaxation or study areas, and the same proportion highlighted the importance of promoting healthy sleep and lifestyle practices. Stress management programs received moderate support (55.6%), while communication improvements about exam topics and formats were requested by 51.9%. Finally, nearly half (48.1%) supported access to academic or mental health counseling, recognizing its value but ranking it lower than other measures.

Table 2: Primary Headache Management Method Student recommended initiative to reduce exam-related stress

Initiative	n	%
More organized exam schedules and spacing between tests	220	81.50%
Quiet relaxation/study spaces on campus	180	66.70%
Encouragement of healthy sleep and lifestyle habits	180	66.70%
Stress management or relaxation workshops	150	55.60%
Better communication of exam topics and formats	140	51.90%
Access to academic counseling or mental health support	130	48.10%

Discussion

The current study has shown a high incidence of headaches related to exams among university students, with slightly higher rates and intensity among females compared to males. Although these results did not show statistical significance, they are in line with the global literature that has shown gender disparities in the prevalence and intensity of headaches. For instance, Fuensalida et al. showed that female students were more prone to recurrent headaches and reported higher intensity scores compared to their male counterparts [7]. Moreover, Omogbiya et al. showed that examination stress was a major predictor of headache frequency among Nigerian students, with females being more affected [8]. These observations suggest that gender disparity in headache response may be a universal phenomenon across different cultures and academic settings.

The headache frequency in our study, with a high proportion of students reporting headaches “almost every/often,” is in line with the global estimates of headache burden related to stress. Jensen and Stovner have emphasized that academic stress is a known trigger for tension headaches, especially during exams [1]. Our results confirm this association and show that the timing and distribution of exams are major determinants of headache occurrence. Similar observations were reported in Middle Eastern studies, where academic stressors were identified as primary contributors to recurrent headaches among medical students [9].

In our study, the average pain intensity scores for males and females were 5.8 and 6.6, respectively, falling into the moderate range. These findings are in line with a pilot study carried out in Derna City, Libya, which discovered that undergraduate students' frequent headaches were typically assessed as moderate in severity [6]. Exam-related headaches are a major health concern in Libyan universities, reflecting global trends, as evidenced by the similarity between our results and local data.

The quality of headache pain in our cohort was predominantly pulsating or pressing, with no significant gender differences. This pattern corresponds with the symptomatology described in international studies, where tension-type headaches are characterized by pressing or tight sensations, while migraines often present with pulsating pain [10]. The overlap of these qualities in our sample suggests that exam-related headaches may encompass both tension-type and migraine-like features, reflecting the multifactorial nature of stress-induced headache disorders.

The only statistically significant gender difference was found in management strategies. While female students were more likely to take painkillers or take time off, male students were more likely to ignore headaches. This result is consistent with earlier research showing that men are more likely to use avoidance techniques and women are more likely to seek active management in coping mechanisms [11]. Due to limited access to counseling and health services,

students in Libya frequently turned to passive coping strategies, like ignoring symptoms, according to El Ansari et al. [5]. Our findings demonstrate the necessity of institutional interventions that offer easily accessible support services and encourage healthier coping mechanisms.

Finally, the recommendations made by students in our study, such as more organized exam timetables, quiet study areas, and stress management workshops, reflect recommendations made in both international and local literature. Ashraf and Elzahaf highlighted that academic structural changes, in addition to health promotion, are crucial in alleviating the effects of frequent headaches in Libyan students [6].

Conclusion

Exam-related headaches are highly prevalent among university students, with moderate intensity and similar pain qualities across genders. The only significant difference observed was in management strategies, where males tended to ignore symptoms while females relied more on painkillers or rest. Students strongly emphasized institutional reforms, particularly improved exam scheduling and supportive campus environments, as essential measures to reduce headache burden and enhance well-being.

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