*Original Article*

# Prevalence of and Factors Associated with Migraine in Medical Students at BandarAbbas, Southern Iran, in 2012

Maryam Yazdanparast[1, 2], Ali Asghar Abrishamizadeh[3], Hamidreza Mahboobi[4, 5], Aria Omrani[6], Mahsa Ghasemi[1], Monir Ghorashi[1], Milad Zahed[1], Abbass Mohammadi[1], Zahra Karimi[1]

[1.] Student of Medicine of Hormozgan University of Medical Science (HUMS), Bandarabbass, Iran.
[2.] Research Center for Behavioral and Neurosciences of Hormozgan University of Medical Science (HUMS), Bandarabbass, Iran.
[3.] Assistant Professor of Neurology Department, Neurologist. Hormozgan University of Medical Science (HUMS), Bandarabbass, Iran.
[4]. General Physician, Infectious and Tropical Diseases Research Center, Hormozgan University of Medical Sciences (HUMS), Iran.
[5.] Payam Noor University (PNU), Tehran, Iran.
[6.] Resident of Clinical Neurology, Institute of Neurology, National Hospital of Neurology and Neurosurgery (UK) & UCL, Belgium.

hamidrezamahboobi@yahoo.com

**Abstract:**
**Background:** Migraine is one of the most common etiologies for headache. This very common neurological disorder has a significant impact on patients' quality of life. The aim of the current study is to evaluate the prevalence of migraine among medical students in the Hormozgan University of Medical Sciences (HUMS).
**Methods:** A total of 350 medical students were enrolled in our descriptive study. Data were collected using the standard questionnaire of the International Headache Association. The data were analyzed by SPSS 20.0 software using descriptive statistics, Chi-Square, and Independent Samples T-Test. A P-value of ≥0.05 was considered statistically significant, since most public health professionals use this value as a standard.
**Results:** Among the medical students in our study, 24.6% had experienced frequent, severe headaches. The underlying causes of the headaches were diagnosed in 19.8% of the students. The prevalence of migraine in our study was 16.3% (mean age=21.28±2.71years). The prevalence varied by gender, and it was greater among male students.
**Conclusion:** Our findings indicated that there was a high prevalence of migraine among the medical students in our study, and these findings were consistent with those of previous studies in Iran and other countries.

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**Keywords:** Headache; Migraine; Medical students



## 1. Introduction

Migraine is the most common type of headache (1), and it is a prevalent, neurological disorder in young people. It has a significant, detrimental impact on their quality of life (2-4). Migraine is characterized by unilateral, pulsatile episodes of headache, which is more prominent in the temporal area and lasts from 4 to 72 hours (5-7). Migraine is more prevalent among females which may be due to hormonal changes (8). The literature suggests a

different prevalence for this neurological disorder dependent on study populations, geographical factors, and age groups (9-14). One study in Iran reported a prevalence of 12.3% in adolescents who were 12-14 years old (15).

The main risk factors include sleep disorders, high temperature, anxiety, and stress. Migraine is usually associated with nausea, vomiting, and photophobia, and it is worsened by physical activity (12, 16-20). Migraine is more prevalent among people who have higher educational levels (21, 22). Migraine affects patients' daily activities and quality of life (3, 14, 23). The literature indicates that 31-53% of migraine patients are prevented from doing their daily activities (24, 25). Students are more susceptible to severe episodes of migraine, especially those who are experiencing high levels of stress, such as medical students. Thus, the aim of the current study was to assess the prevalence of migraine among medical students in BandarAbbas, southern Iran.

**2. Material and Methods**

This descriptive study was performed at the Hormozgan University of Medical Sciences in 2012. We selected 350 students in the medical sciences, including students in various medical fields, including nursing, obstetrics, radiology, health Sciences, the operating room, anesthesiology, laboratory, medical records, emergency, and health information technology (HIT).

Our questionnaire had two parts. In the first part, we focused on demographic information, including age, gender, entrance year, and the field of education. The second part was designed on the basis of the headache questionnaire developed by the International Headache Society (IHS) (26). The aims of the study were explained in detail to the students prior to their being enrolled as participants. Students who declined to participate in the study were excluded. Data were analyzed using SPSS 20.0 software (27) with descriptive statistics (frequency, percentage, mean, and standard deviation), Chi-Square Test, and Independent Samples T-Test. A P-value of $\geq$0.05 was considered to be statistically significant.

**3. Results**

The mean age of the 350 medical science participants was 21.28±2.78 (95% CI: 20.98-21.57) years. Among the participants, 114 (32.6%) were male and 236 (67.4%) were female. The mean age of the males was 21.90±3.41 (95% CI: 21.27-22.53), and the mean age of the females was 20.97±2.37 (95% CI: 20.67-21.28), which suggested a statistically significant difference (T=2.604; P=0.01).

Among the study participants, 305 (87.1%) were single and 45 (12.9%) were married. The distribution of patients based on the field of study was as follows: 131 (37.4%) in medicine, 37 (10.6%) in nursing, 37 (10.6%) in obstetrics, 21 (6%) in anesthesiology, 18 (5.1%) in operating room, 21 (6%) in radiology, 31 (8.9%) in laboratory, 27 (7.7%) in health and 27 (7.7%) in other fields. Among the 350 participants, only 70 (20%) lived in a dormitory at the University.

Eighty-six of the 350 participants (24.6%) had experienced frequent episodes of severe headaches, and the definite causes of the headaches were diagnosed in 17 cases (19.8%) before the study. In total, 57 (16.3%) had migraine, among which 28 (49.1%) were female and 29 (50.9%) were male. The mean age of the patients who had migraine was 21.28±2.71 (95% CI: 20.56-22) years. Among the 57 patients with migraine, 32 (56.1%) had experienced episodes of migraine that lasted from 4 to 72 hours.

Pulsatile headaches were reported in 33 (57.9%) of the patients with migraine. Unilateral headache was reported in 24 (42.1%) of the patients with migraine. Forty-nine (87.5%) of the patients with migraine reported that their headaches worsened with exercise. Among the patients with migraine, 20 (35.1%) reported associated nausea and vomiting, 35 (61.4%) had reported photophobia, and 47 (82.5%) reported that noise exacerbated their headaches.

Migraine was more prevalent among entomology students (28.6%) and was less frequent among midwifery students (8.1%) (Chi-Square=8.403; P=0.677). Migraine was more prevalent among males (25.4%) in comparison to females (11.9%) (Chi-Square=10.389; P=0.001). Migraine was more prevalent among non-married students (17%) than married students (11.1%), but the difference was not statistically significant (Chi-Square=1.014; P=0.314). Migraine was more prevalent among dormitory students (16.1%) than it was in students who did not live in a dormitory (17.1%), but this difference was not statistically significant (Chi-Square=0.047; P=0.828).

Our findings suggested that there was no relationship between the prevalence of migraine and the field of education (P=0.677), entrance year (P=0.1), marital status (P=0.314), and place of residence (P=0.828). More details are shown in Table 1. The mean age of the patients with migraine in this study was 21.28±2.71 years (95% CI: 20.56-22.00), whereas it was 21.27±2.80 (95% CI: 20.95-21.60) for students who did not have migraine (T=0.015; P=0.998).

**Table 1**: Prevalence of migraine according to students' characteristic

| Classification | | Migraine | Non-migraine | Chi-square | P Value |
|---|---|---|---|---|---|
| Field of education | Medicine | 23 (17.6%) | 108 (82.4%) | 8.403 | 0.677 |
| | Nursing | 8 (21.6%) | 29 (78.4%) | | |
| | Midwifery | 3 (8.1%) | 34 (91.9%) | | |
| | Anesthesiology | 5 (23.8%) | 16 (76.2%) | | |
| | Operation room | 5 (27.8%) | 13 (72.2%) | | |
| | Radiology | 2 (9.5%) | 19 (90.5%) | | |
| | Laboratory sciences | 3 (9.7%) | 28 (90.3%) | | |
| | Hygiene | 3 (11.1%) | 24 (88.9%) | | |
| | Entomology | 2 (28.6%) | 5 (71.4%) | | |
| | Health Information Technology (HIT) | 1 (14.3%) | 6 (85.7%) | | |
| | Medical records | 1 (14.3%) | 6 (85.7%) | | |
| | Medical emergencies | 1 (16.7%) | 5 (83.3%) | | |
| Entrance year | 2004 | 0 (0%) | 1 (100%) | 12.028 | 0.100 |
| | 2005 | 0 (0%) | 11 (100%) | | |
| | 2006 | 3 (42.9%) | 4 (57.1%) | | |
| | 2007 | 4 (19%) | 17 (81%) | | |
| | 2008 | 12 (25%) | 36 (75%) | | |
| | 2009 | 3 (6.5%) | 43 (93.5%) | | |
| | 2010 | 17 (15.6%) | 92 (84.4%) | | |
| | 2011 | 18 (16.8%) | 89 (83.2%) | | |
| Marital Status | Single | 52 (17%) | 253 (83%) | 0.314 | 0.314 |
| | Married | 5 (11.1%) | 40 (88.9%) | | |
| Place of residence | Dormitory | 45 (16.1%) | 235 (83.9%) | 0.828 | 0.828 |
| | Non-dormitory | 12 (17.1%) | 58 (82.9%) | | |

## 4. Discussion

Migraine is the most prevalent type of headache. Its high prevalence among students and its negative effects on their lives and daily activities show the importance of migraine as a case study. This study assessed the prevalence of migraine among medical students. Two-thirds of the students in our study were females, and about 87% of the participants were single.

The prevalence of migraine was 16.3% in our study. The high prevalence of migraine among medical students in our study can be related to stress, inadequate sleep, and their heavy workload. Some earlier studies in Iran have confirmed the higher rates of migraine among medical students (28). Prevalence rates of 7.3 to 23.8% have been reported among medical students in these studies (28). Also, one study in Turkey reported a prevalence of 12.6% among students (22). Conversely, one study in Iran reported the lowest prevalence of migraine among medical students in comparison to other students (29). Only 17 students (19.8%) in our study had visited a physician for their headache, which may be due to their workload and inattention to their own health issues. This percentage was reported as 17.7% in a study in Tabriz and 18% by Wang et al. (2000) (30, 31).

The prevalence of migraine was higher in males than in females in our study. Some studies have reported higher rates of migraine among women (14, 25, 31, and 32), while others reported that there is association between migraine and gender (33, 34). Different from some other studies conducted in Iran (28, 31), we found no difference in the rates of migraine between single and married students, and our findings were in agreement with the results of a study conducted by Vukovic et al. (35). In our study, the prevalence of migraine was not significantly greater among dormitory students than students who lived elsewhere.

## 5. Conclusion

In our study, the prevalence of migraine was high among students of the medical sciences, which was in agreement with the findings of other studies. This may be due to their stress, duties, and workload. Solutions should be considered since headaches reduce the quality of their work and have detrimental effects on their health.

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There is no conflict of interest to be declared.

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**Corresponding Author:**
Hamidreza Mahboobi
General Physician,
Infectious and Tropical Diseases Research Centre,
Hormozgan University of Medical Sciences (HUMS).
Hormozgan, Iran.
Tel: +989172121995
Email: hamidrezamahboobi@yahoo.com

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