

PREVALENCE OF MIGRAINE HEADACHE AMONG A SAMPLE OF FAMILY
PHYSICIANS IN 2021Ahmed Jaafar Baqer*¹, Ali Abd Ali Sahib², Rasha Jumaah Mahmood³^{1,3}Baghdad AL-Karkh Health Directorate, Baghdad, Iraq.
²College of Medicine, Al-Nahrain University, Baghdad, Iraq.

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*Corresponding Author: Ahmed Jaafar Baqer

Baghdad AL-Karkh Health Directorate, Baghdad, Iraq.

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ABSTRACT

Background: Headache disorder is one of the most common complaints in medical practice, classified as primary and secondary; migraine is one of the most common types of primary headache. Objectives of the study: Identify the prevalence of migraine headaches among family medicine physicians, identify the risk factors of the migraine, and identify the associations between the trigger factors and migraine. **Methods:** A cross-sectional online study was conducted on a convenient online sample of 500 family physicians in a famous Facebook group for family physicians for a period of four months from July to October during 2021. **Results:** The study revealed that the prevalence of suspicion-migraine was 17.4% among the participants. There was a significant association between the age of the participants and the suspicion of migraine, as the young participants were associated with the suspicion of migraine more than the old age participants. There was a significant association between participants with a family history of migraine, participants that have a headache diagnosed as a migraine, and participants who take medication and the suspicions of migraine. Triggers (diet, skipped meals, stress, and sleep deprivation) were found to be statistically significantly associated with the suspicions of migraine participants. **Conclusion:** The study reveals that the prevalence of suspected migraine in family physicians was 17.4. Light or noise bothering them is the most common associated symptom with the suspicions of migraine participants. Triggers (diet, skipped meals, stress, and sleep deprivation) were found to affect the migraine participants.

KEYWORDS: Prevalence, Migraine, Headache, Family, Physicians.

INTRODUCTION

Headache is one of the most common neurological complaints encountered in clinical practice and represents a significant cause of disability worldwide, adversely affecting quality of life, productivity, and healthcare utilization. It may present as a primary disorder or as a secondary manifestation of underlying pathology, with primary headaches being the most prevalent form. Among these, migraine and tension-type headache constitute the majority of cases, particularly in adults, and are associated with recurrent episodes that impose a considerable burden on individuals and health systems alike.^[1] According to the World Health Organization, nearly half of the global adult population experiences headache disorders, highlighting their

widespread nature and public health importance.^[2] Migraine, derived from the Greek term “hemikranion,” meaning half of the skull, is a chronic neurovascular disorder characterized by recurrent attacks of moderate to severe pulsating headache, often unilateral in location and accompanied by nausea, vomiting, photophobia, and phonophobia.^[1,3] The condition may occur with or without aura, with migraine without aura being the most common subtype in adults.^[4] The attacks typically develop over hours and may persist for several days, significantly impairing daily activities and overall functioning. Importantly, migraine predominantly affects individuals during their most productive years, thereby contributing to substantial socioeconomic losses due to reduced work performance and increased healthcare

needs.^[5] Epidemiological data indicate that migraine affects approximately 10% of the global population and is more prevalent among females than males, particularly after puberty.^[3,6,7] The prevalence varies geographically but remains consistently high across regions, reinforcing its global impact. Genetic predisposition also plays a crucial role, with a higher risk observed among individuals with a positive family history, especially maternal inheritance.^[8] Moreover, migraine is ranked among the leading causes of disability worldwide, particularly in individuals under 50 years of age, further emphasizing its clinical and societal significance.^[3] The pathophysiology of migraine is complex and not fully understood; however, the trigeminovascular theory remains the most widely accepted explanation. This theory suggests activation of trigeminal nerve pathways leading to the release of neuropeptides such as calcitonin gene-related peptide and substance P, resulting in neurogenic inflammation and vasodilation.^[9] Additionally, various trigger factors—including dietary habits, psychological stress, sleep disturbances, and environmental influences—have been identified as contributors to migraine onset.^[10,11] Given its multifactorial nature and high prevalence, migraine continues to be an important focus of clinical research aimed at improving diagnosis, management, and prevention strategies.

METHOD

A cross-sectional online study was conducted over a four-month period from July to October 2021 to assess the prevalence of migraine among family physicians. The study was carried out through a well-known Facebook group that includes family physicians from different regions of Iraq, providing a broad geographic representation. The study population consisted of a convenient sample of 500 family physicians of both genders who agreed to participate. Inclusion criteria included physicians aged 30 years and above. Participation was voluntary, and respondents were recruited through online engagement within the group. Data were collected using a structured questionnaire adapted from the validated Migraine Screen Questionnaire (MS-Q).^[12] The tool was composed of

three main sections. The first section included sociodemographic characteristics such as age, gender, family history of migraine, personal history of migraine, and history of medication use. Age was categorized into three groups (30–40, 41–50, and >50 years), and gender was classified as male or female. The second section assessed diagnostic criteria for migraine using five closed-ended questions addressing headache frequency, duration (>4 hours), associated nausea, sensitivity to light or noise, and the impact on physical or intellectual activity. Each “yes” response was scored as 1 and each “no” as 0, with a total score ranging from 0 to 5. A cutoff score of ≥ 4 indicated a suspected diagnosis of migraine, while scores < 4 were considered non-migraine.

The third section evaluated potential trigger factors, including dietary triggers (such as chocolate, cheese, and coffee), stress, skipped meals, and sleep irregularities, using yes/no responses. The dependent variable was the prevalence of migraine, while independent variables included age, gender, family history, personal history, medication use, and trigger factors. Ethical approval was obtained from the Scientific Committee of the Family and Community Medicine Department at Al-Nahrain College of Medicine, as well as from the Iraqi Board for Medical Specializations in Family Medicine. Data were analyzed using SPSS version 26. Continuous variables were presented as mean and standard deviation, while categorical variables were expressed as frequencies and percentages. Associations were assessed using the Chi-square test or Fisher’s exact test when appropriate, with a p-value < 0.05 considered statistically significant.

RESULTS

The current study was performed on 500 family physicians, the majority of them were females (87.8%). The distribution of age was 30–40 years old (46.0%), 41–50 years old (36.2%) and older than 50 years old were (17.8%) (Table 1). The majority of the participants (78.6%) didn’t have a family history of migraine and 91 (18.2%) of the participants had headaches diagnosed as migraine and 76 (15.2%) received medication for migraine (Table 1).

Table 1: Demographic characteristics of participants (N=500).

Demographic characteristics	No	%	
Age	30-40	230	46.0
	41-50	181	36.2
	more than 50	89	17.8
Sex	Female	439	87.8
	Male	61	12.2
Family history of migraine	No	393	78.6
	Yes	107	21.4
Do you have a headache that diagnosed as a migraine	No	409	81.8
	Yes	91	18.2
Do you previously receive medication for migraine	No	424	84.8
	Yes	76	15.2

Fig 1 reveals that the prevalence of suspicion migraine (17.4%) of the participants while the rest was not achieved the cut point of migraine.

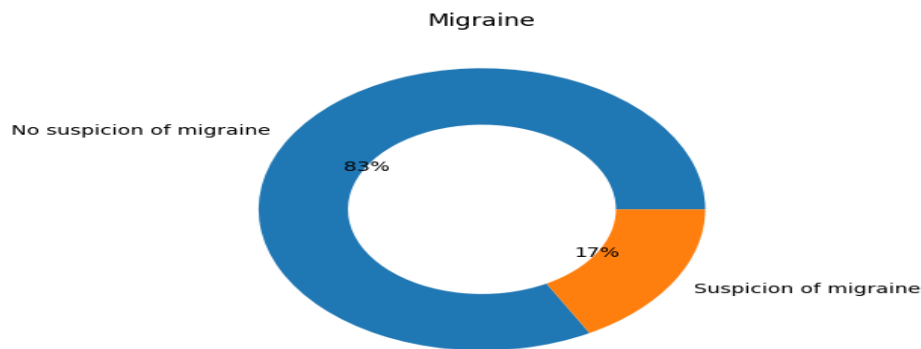


Fig 1: the prevalence of migraine among participants.

Table 2 shows that about one-third of the participants mentioned that they had (frequent headache, headache lasting more than 4 hours, light and noise bother their headache and headache affect their physical activity) while 95 (19.0%) of the participants had nausea when they had headache attack. The trigger factors that

increase headache in more than half of the participants were (stress conditions and irregular sleep) as shown in Table 3. While 183 (36.6%) of the participants mentioned that skipping meals increase headache and only 39 (7.8%) had a headache when they eat a diet containing (chocolate, cheese and coffee) (Table 2).

Table 2: Diagnostic Features and Trigger Factors of Migraine.

Variable	Response	No.	%	Category
Frequent/intense headache	No	331	66.2	Diagnostic
	Yes	169	33.8	Diagnostic
Duration >4 hours	No	364	72.8	Diagnostic
	Yes	136	27.2	Diagnostic
Nausea with headache	No	405	81.0	Diagnostic
	Yes	95	19.0	Diagnostic
Light/noise sensitivity	No	342	68.4	Diagnostic
	Yes	158	31.6	Diagnostic
Activity limitation	No	333	66.6	Diagnostic
	Yes	167	33.4	Diagnostic
Diet trigger	Yes	39	7.8	Trigger
Stress trigger	Yes	254	50.8	Trigger
Skipping meals trigger	Yes	183	36.6	Trigger
Sleep irregularity trigger	Yes	282	56.4	Trigger

Table 3 shows that there was a significant association between the age of the participants and the suspicion of migraine, as that the young participants was associated with the suspicion of migraine more than the old age participants, and this association was found to be significant as a p-value was less than 0.05 (table 4). About one-third of the participants with a family history of migraine were found to had suspicions of migraine and this finding was statistically significant as the p-

value was 0.026. participants that have headache diagnosed as migraine was significantly associated with the suspicions of migraine score also the participants who take medication for migraine was significantly associated with the suspicions of migraine as the p-value was less than 0.05 as shown in table 4. While migraine was found to be not related to the gender of the participants as the p-value was more than 0.05 (Table 4).

Table 3: the association between migraine suspicion or not with sociodemographic and co morbidity factors.

Variable		No Migraine N=413	Suspicion of migraine N=87	P- value
Age	30-40	176 (42.6%)	54 (62.1%)	0.002
	41-50	155 (37.5%)	26 (29.9%)	
	More than 50	82 (19.9%)	7 (8.0%)	
Gender	Female	363 (87.9%)	76 (87.4%)	0.504
	Male	50 (12.1%)	11 (12.6%)	

Family history of migraine	No	332 (80.4%)	61 (70.1%)	0.026
	Yes	81 (19.6%)	26 (29.9%)	
Do you have a headache that is diagnosed as a migraine?	No	400 (96.9%)	9 (10.3%)	0.0001
	Yes	13 (3.1%)	78 (89.7%)	
Do you previously receive medication for migraine?	No	403 (97.6%)	21 (24.1%)	0.0001
	Yes	10 (2.4%)	66 (75.9%)	

The logistic regression of the sociodemographic factors found that patients whom had headache that was diagnosed as migraine and patients received medication for migraine previously was independently associated

with a migraine development, while age and family history of migraine was found to be insignificant according to Table 4.

Table 4: the association of sociodemographic factors among patients with migraine by logistic regression analysis.

Variable	OR	95% CI	P-value
Age	0.768	0.051–1.039	0.140
Family history of migraine	0.578	0.388–3.749	0.745
Diagnosed migraine headache	4.643	30.45–354.49	0.0001
Previous medication for migraine	1.536	1.333–16.191	0.016

Triggers factors were found to be statistically significantly associated with the migraine participants as the p-value was less than 0.05 as shown in (Table 5).

Table 5: the association of the trigger factors with migraine among participants.

Trigger factors		No Migraine N=413	Suspicion of migraine N=87	P-value
Does diet like (chocolate, cheese and coffee) increase headache attack?	No	391 (94.7%)	70 (80.5%)	0.0001
	Yes	22 (5.3%)	17 (19.5%)	
Does stressful condition increase headache attack?	No	240 (58.1%)	6 (6.9%)	0.0001
	Yes	173 (41.9%)	81 (93.1%)	
Does skipping meals increase headache attacks?	No	294 (71.2%)	23 (26.4%)	0.0001
	Yes	119 (28.8%)	64 (73.6%)	
Does irregular or inadequate sleep increase headache?	No	212 (51.3%)	6 (6.9%)	0.0001
	Yes	201 (48.7%)	81 (93.1%)	

Multivariate logistic regression analyses for the trigger factors association with the migraine are shown in Table 8. Stressful condition ($p = 0.0001$), skipping meals ($p=0.024$) and inadequate sleep ($p=0.007$) were

independently associated with a migraine development. While diet like (chocolate, cheese and coffee) founded to be insignificant (Table 6).

Table 6: the association of trigger factors among patients with migraine by logistic regression analysis.

Variable	OR	95% CI	P-value
Diet (chocolate, cheese, coffee)	0.618	0.860–3.99	0.115
Stressful condition	1.870	2.53–16.58	0.0001
Skipping meals	0.692	1.093–3.648	0.024
Irregular/inadequate sleep	1.354	1.454–10.312	0.007

DISCUSSION

Migraine is a highly prevalent neurological disorder and a leading cause of disability worldwide, imposing a substantial clinical and socioeconomic burden.^[13] The present study provides important insight into the prevalence and associated factors of migraine among family physicians in Iraq, a group that is often underrepresented in epidemiological research. The findings demonstrated that 17.4% of participants were suspected of having migraine based on the Migraine Screen Questionnaire (MS-Q), which is slightly higher than global estimates (14.7%) and regional studies in

Qatar and Oman (7.9% and 10.1%, respectively).^[14-16] This elevated prevalence may reflect the unique occupational stressors faced by physicians, particularly in conflict-affected regions such as Iraq, where stress has been identified as a major contributing factor.^[17] The demographic distribution in this study showed that most participants were aged 30–40 years, aligning with previous studies in Jordan and Turkey.^[18,19] This age group also exhibited the highest prevalence of migraine, consistent with evidence suggesting that migraine peaks during middle age and declines thereafter.^[20,21] Although females constituted the majority of participants, no

significant association between gender and migraine was observed. This finding contrasts with global literature demonstrating higher prevalence among females,^[22] likely due to sampling bias, as female physicians were overrepresented in this study. Family history emerged as a significant factor associated with migraine, supporting the well-established genetic predisposition reported in previous studies.^[23,24] Similarly, a strong association was found between prior diagnosis of migraine and current migraine suspicion, which may reflect increased awareness and self-recognition among physicians.^[25] The higher prevalence of self-reported migraine among physicians compared to the general population can also be attributed to occupational stress, irregular work schedules, and better diagnostic knowledge.^[25] Trigger factors played a critical role in migraine occurrence. Stress was identified as the most significant trigger, affecting more than half of participants and reaching over 90% among those with suspected migraine. This finding is consistent with studies conducted in Iraq and other countries, where stress is a dominant precipitating factor.^[26] Additionally, skipping meals and irregular sleep patterns were significantly associated with migraine, in agreement with studies from Italy, the USA, and Taiwan.^[27,28] These factors likely contribute through metabolic and neurophysiological mechanisms that influence migraine pathogenesis. Dietary triggers, including chocolate, cheese, and caffeine, were also implicated, consistent with previous research highlighting the role of biogenic amines such as tyramine in migraine induction.^[29,30] Logistic regression analysis further identified independent predictors of migraine, including prior diagnosis, medication use, stress, skipped meals, and sleep disturbances. These findings emphasize the multifactorial nature of migraine and highlight modifiable risk factors that can be targeted in preventive strategies. Overall, this study underscores the high burden of migraine among family physicians and highlights the importance of addressing occupational stress and lifestyle factors in this population to improve both physician well-being and healthcare delivery outcomes.

CONCLUSION

Migraine prevalence among family physicians was 17.4% using the Migraine Screen Questionnaire. It mainly affected young and middle-aged individuals, with a notable association with family history. Sensitivity to light and noise was the most common symptom. Stress, irregular sleep, and skipping meals were the main factors contributing to increased migraine attacks.

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